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ASSESSMENT OF PATIENT SATISFACTION WITH HEALTH CARE SERVICES AT A PRIMARY HEALTH CARE FACILITY AT THE PUTWAR BALA RURAL HEALTH CENTER, PESHAWAR

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Patient satisfaction; primary health care; Peshawar; Pakistan; service quality; medicine availability.

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Abstract

Background: Patient satisfaction is an important indicator of healthcare quality. Primary health care (PHC) facilities in Pakistan face challenges including underfunding, medicine shortages, poor infrastructure, and weak governance, while recent evidence from Peshawar remains limited. Objective: To assess patient satisfaction at the Putwar Bala Rural Health Center, Peshawar, and examine its association with socio-demographic and service-related factors. Methods: A descriptive cross-sectional study was conducted among 196 adult patients (≥21 years) attending a government PHC facility in Peshawar. Participants were selected through systematic random sampling, and data were collected using structured face-to-face interviews. Descriptive statistics and chi-square tests were applied using SPSS version 25, with $p<0.05$ considered significant. Results: Most participants were female (62.8%), married (79.6%), had low education (68.4%), and low household income (72.9%). High satisfaction was reported for doctor communication and respectful behavior, including careful listening (87.2%) and respectful treatment (89.3%). However, lower satisfaction was observed for registration efficiency (48.5%), treatment explanation (44.9%), and medicine availability (39.8%). Satisfaction was significantly associated with education ($p=0.03$), income ($p=0.01$), and waiting time ($p=0.04$). Conclusion: Although patients report high satisfaction with interpersonal aspects of care, significant service delivery gaps exist in medicines availability, registration efficiency, diagnostic equipment functionality, and emergency transport. Targeted interventions in supply chain management, administrative processes, and infrastructure are urgently needed to improve patient satisfaction at PHC facilities in Peshawar. Interpersonal aspects of care were rated positively; major gaps remain in medicine availability, administrative efficiency, and facility infrastructure. Strengthening supply systems and

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service delivery is essential to improve patient satisfaction in PHC facilities in Peshawar.

Introduction

Primary health care (PHC) is the foundation of an effective health system, providing accessible, affordable, and essential healthcare services to communities. In Pakistan, PHC facilities such as Basic Health Units (BHUs) and Rural Health Centers (RHCs) deliver outpatient care, maternal and child health services, immunization, family planning, and essential medicines. Strong PHC systems improve health outcomes, reduce inequities, and decrease the burden on tertiary hospitals (World Health Organization, 2024; Ahmed & Shaikh, 2011; Mujib ur Rehman et al., 2007).

Patient satisfaction is a key indicator of healthcare quality and system performance, reflecting how well patients' expectations are met. Satisfied patients are more likely to adhere to treatment, seek follow-up care, and trust healthcare providers, whereas dissatisfaction contributes to poor compliance and avoidance of formal healthcare services. Patient satisfaction is influenced by multiple factors, including waiting time, staff behavior, communication, cleanliness, infrastructure, and medicine availability (Ferreira et al., 2023; Bamidele et al., 2011; Batbaatar et al., 2017). The World Health Organization emphasizes that strong primary health care is the most inclusive, equitable, and cost-effective approach for achieving universal health coverage (World Health Organization, 2024). However, in resource-constrained settings such as Pakistan, PHC services are often affected by poor supervision, limited accountability, and shortages of essential medicines and infrastructure (Ahmed & Shaikh, 2011). National and provincial assessment reports have also highlighted concerns regarding waiting times, cleanliness, and overall service delivery in PHC facilities (Ministry of NHSRC, 2021; Khyber Pakhtunkhwa Health Department, 2023).

Globally, improving patient experience has become a central component of healthcare quality improvement strategies. Many health systems now incorporate patient-reported outcomes and satisfaction surveys to guide reforms and enhance service responsiveness. Evidence suggests that measuring patient satisfaction provides actionable insights for improving efficiency, communication, and equity in healthcare delivery (Donabedian, 1988; Sixma et al., 1998; Doyle et al., 2013).

In Pakistan, persistent structural and operational weaknesses in PHC facilities have led to widespread patient dissatisfaction and underutilization of public healthcare services. Patients often bypass primary care and seek treatment at higher-level or private facilities, increasing out-of-pocket expenditure and overburdening tertiary hospitals (Khan & Shaikh, 2020; World Bank, 2019). Studies from Peshawar have reported deficiencies in sanitation, water supply, clinician performance, and laboratory services in rural PHC facilities (Shah et al., 2023; Irfan et al., 2020).

Despite these concerns, recent facility-level evidence on patient satisfaction in Peshawar remains limited, with most studies focusing mainly on structural indicators rather than patient experience (Al Abri & Al Balushi, 2014). Therefore, this study aimed to assess patient satisfaction with healthcare services at a selected Rural Health Center in Peshawar and identify factors associated with satisfaction. The findings may support evidence-based interventions to improve service quality, resource allocation, and patient-centered care in PHC facilities.

2.0 MATERIAL AND METHODS

2.1 Research Study Area

The present study was conducted in Putwar Bala, a rural locality situated on the outskirts of Peshawar, the capital city of Khyber Pakhtunkhwa province, Pakistan. Located at 34.0151° N latitude and 71.5249° E longitude, the village lies at an elevation of 340 meters above sea level. Nestled amid fertile fields and rolling hills, Putwar Bala offers a picturesque landscape that reflects the natural beauty of the region. The area hosts a diverse population, where rural traditions coexist with influences from nearby urban communities. The Rural Health Center in Putwar Bala serves as the primary healthcare hub for the community,

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delivering essential medical services and playing a pivotal role in addressing the health needs of the local population.

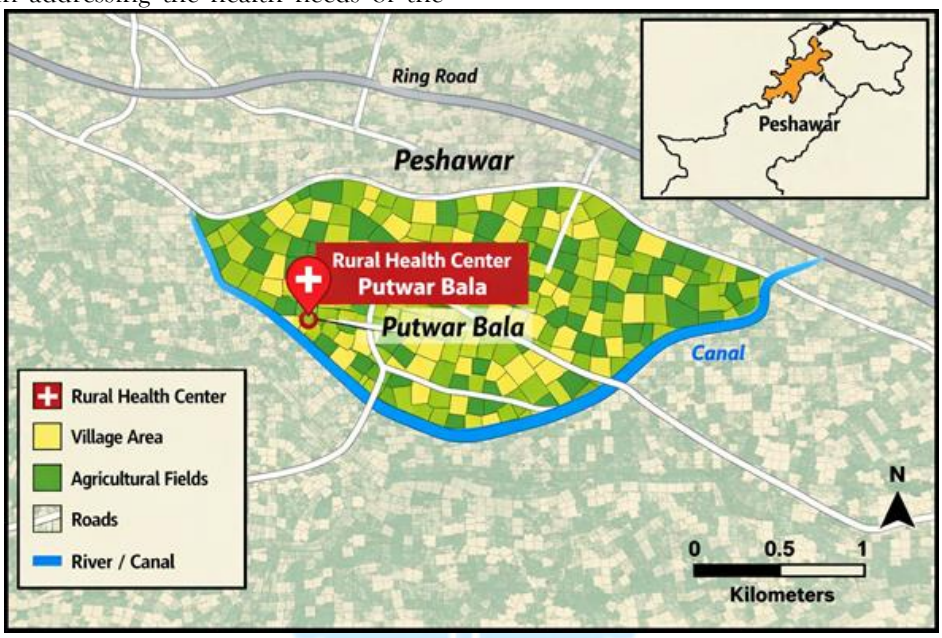

Figure 1: Rural Health Center Putwar Bala in Mulazai II, Peshawar

2.3 Study Design and Setting

A descriptive cross-sectional study was conducted to assess patient satisfaction with healthcare services at a primary health care facility over a period of 4 months. The source population consisted of all adult patients attending the outpatient department of the selected Rural Health Center during the data collection period. The study was carried out at the Putwar Bala Rural Health Center (RHC), Mulazai, Peshawar, Khyber Pakhtunkhwa, Pakistan. The facility is a government-run primary health care center providing outpatient services, maternal and child health services, immunizations, family planning, and essential medicines free of cost to the catchment population.

2.4 Inclusion Criteria

Patients aged ≥21 years who received health care services at the selected Primary Health Care Center during the data collection period. Patients willing to participate and provide informed consent.

2.5 Exclusion Criteria

Patients were excluded from the study if they were critically ill and unable to respond to the questionnaire, visiting the facility only for emergency services, were health care staff or employees of the facility, or were below 18 years of age.

2.6 Sampling Technique

A randomized sampling design was employed. After obtaining the list of patients attending the outpatient department on each data collection day, eligible patients meeting the inclusion criteria were randomly selected using a simple random sampling method (e.g., lottery method or random number generator) until the desired sample size was achieved. This randomized approach was chosen to minimize selection bias, ensure each eligible patient had an equal probability of being selected, and guarantee representativeness of the patient population.

2.7 Sample Size

A total of 196 patients were successfully surveyed using the structured questionnaire as the final sample size for this study. A formal sample size calculation was performed prior to data collection using the single population proportion formula: $n = Z^2 p (1-p) / d^2$. Assuming an expected proportion of patient satisfaction (p) of 50% to maximize sample size, a margin of error (d) of 7%, a 95% confidence level (Z = 1.96), and adding 10% for

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non-response, the calculated minimum sample size was approximately 196 patients.

2.8 Socio-demographic characteristics:

2.8.1 Socio-demographic characteristics were recorded for each patient, including age grouped into four categories (18–30 years, 31–40 years, 41–50 years, and above 50 years), gender (male or female), marital status (married, single, divorced, or widowed), education level (no formal education, primary, middle, secondary, higher secondary, or above), and monthly household income in Pakistani rupees (less than 20,000 PKR, 20,001–40,000 PKR, 40,001–60,000 PKR, or more than 60,000 PKR).

2.8.2 Service utilization:

The number of visits made by each patient to the facility during the preceding six months was recorded and categorized as first-time visitor, 2–3 visits, 4–5 visits, or more than 5 visits.

2.8.3 Patient satisfaction indicators (11 items): including registration efficiency, waiting time, queue organization, doctor listening, explanation of illness, explanation of treatment plan, consultation duration, doctor's respectful behavior, privacy maintenance, opportunity to ask questions, and medicines availability. Responses were recorded on a 3-point Likert scale (Agree/Strongly Agree, Neutral, and Disagree/Strongly Disagree).

2.8.4 Facility services assessment:

The availability of essential facility services was assessed through patient report, including whether medicines were available at the pharmacy, whether female staff were present for consultation, and whether laboratory services were functional and accessible. Furthermore, patients were asked about their overall willingness to recommend the facility to family members or friends as a measure of global satisfaction.

2.8.4Open-ended questions: two questions asking patients to report any problems they encountered during their visit and to suggest improvements.

The questionnaire was initially prepared in English, and then translated into Urdu and Pashto (the local languages) for ease of understanding. Back-translation was performed to ensure accuracy. The tool was pretested on 5 patients (not included in the final sample) to check for clarity, comprehension, and flow; minor wording modifications were made accordingly.

2.9 Data Collection Procedure

Data were collected on weekdays (Monday to Thursday) during routine outpatient hours (8:00 AM to 2:00 PM). On each data collection day, the research team approached patients after they had completed their consultation and received services. Eligible patients were explained the purpose of the study, and written informed consent was obtained. Face-to-face interviews were conducted in a private area to maintain confidentiality. Each interview lasted approximately 10–15 minutes.

2.10 Data Management and Analysis

Data were entered into Microsoft Excel and then transferred to SPSS version 26.0 (IBM Corp., Armonk, NY, USA) and Statistix version 15.0 for analysis.

2.11 Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) of KMU (Approval No. __). Permission to conduct the study was also obtained from the District Health Office, Peshawar, and the facility in-charge of the Putwar Bala Rural Health Center.

All participants were provided with an information sheet explaining the purpose, procedures, risks, and benefits of the study. Written informed consent was obtained from each participant before data collection. Participants were assured that: Participation was voluntary and they could withdraw at any time without affecting their care. Their responses would be kept confidential and used only for research purposes. No personally identifiable information (e.g., name, CNIC, address) would be recorded. Data were stored in a password-protected computer accessible only to the research team.

3. RESUSLTS

3.1 Demographic Profile of Respondents

The demographic profile of the 196 respondents was analyzed across five key variables. Age distribution showed that half of the respondents (n=98, 50.0%) belonged to the 25–30 years age group, followed by 33.2% (n=65) in the 31–40 years category, 14.3% (n=28) in the 41–50 years category, and 2.5% (n=5) above 50 years of age. Gender distribution revealed a predominance of

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female respondents, comprising 62.8% (n=123) of the sample, while males accounted for 37.2% (n=73) (Figure 2 and Table 1).

Marital status data indicated that the majority of respondents were married (79.6%, n=156), with 15.3% (n=30) reporting being single, 3.1% (n=6) divorced, and 2.0% (n=4) widowed (Table 1). Education level findings demonstrated very low educational attainment. The largest proportion had primary education (Grade 1–5) (n=94, 48.0%), followed by those with no formal education (n=40, 20.4%). Overall, 68.4% (n=134) had primary education or less. Middle school education was attained by 15.8% (n=31), secondary by 10.2% (n=20), and higher secondary or above by 5.6% (n=11). Monthly household income (PKR) showed that most households (n=103, 52.6%) earned less than 20,000 PKR. Another 20.3% (n=40) earned between 20,001–40,000 PKR, while 27.1% (n=53) earned above 40,000 PKR. Overall, 72.9% (n=143) earned 40,000 PKR or less.

In summary, the typical respondent in this study was a young to early middle-aged married female with low educational attainment and low household income. The demographic profile reveals a population facing significant socioeconomic vulnerabilities, characterized by low education, low income, and female predominance. These findings are consistent with national-level data from Pakistan and align with broader research on educational and economic inequalities in low- and middle-income countries (LMICs).

3.1.1 Low Educational Attainment and Household Income

The finding that 68.4% of respondents had either no formal education or only primary level schooling is strikingly consistent with recent national surveys. A Gallup Pakistan analysis of the Household Integrated Economic Survey (HIES) 2024–2025 demonstrated that literacy in Pakistan is "*overwhelmingly dictated by household income,*" with a nearly 38-percentage-point increase in literacy when moving from the poorest to the richest income quintile. Our data reflects this gradient directly, as 72.9% of households reported earning 40,000 PKR or less monthly**,** placing them in lower income brackets where educational attainment is typically minimal. Furthermore, Hamza and Cochrane (2026) identified three principal barriers to school enrollment in Pakistan: financial constraints, parental denial rooted in sociocultural norms, and child labor**.** Their analysis showed that economic factors exert the strongest negative effect on educational attainment, particularly for girls (Table1 & Figure 1). The low education levels observed in our predominantly female sample (62.8% female) are likely a direct manifestation of these intersecting barriers, reinforcing the evidence that socioeconomic disadvantage and gender norms combine to restrict educational opportunities in rural communities.

3.1.2 Gender Disparities

The overrepresentation of female respondents (62.8%) provides an important lens for interpretation. These structural barriers limit women's participation in formal economic activities and higher education. In our sample, the absence of educational attainment beyond primary level (only 8.7%) suggests that respondents may lack the "education gradient" benefits identified by research, where household heads who complete primary education are 5 percentage points more likely to engage children in learning activities, with two to three times higher effects for secondary or post-secondary completion.

3.1.3 Income Constraints and Intergenerational Implications

The income profile with 50% of households earning under 20,000 PKR monthly places most respondents below or near national poverty lines. According to the Pakistan Panel Household Survey (PPHS) 2024, 71% of parents cite financial constraints as the main reason for school dropout, and national poverty stands at 30.5%. This suggests that children in households represented by our respondents face substantial risks of educational and economic stagnation. The demographic profile depicts a population entrenched in low educational and economic capital, with women disproportionately represented. The findings align with national evidence from Pakistan and international research, confirming that income and gender remain the primary stratifiers of opportunity.

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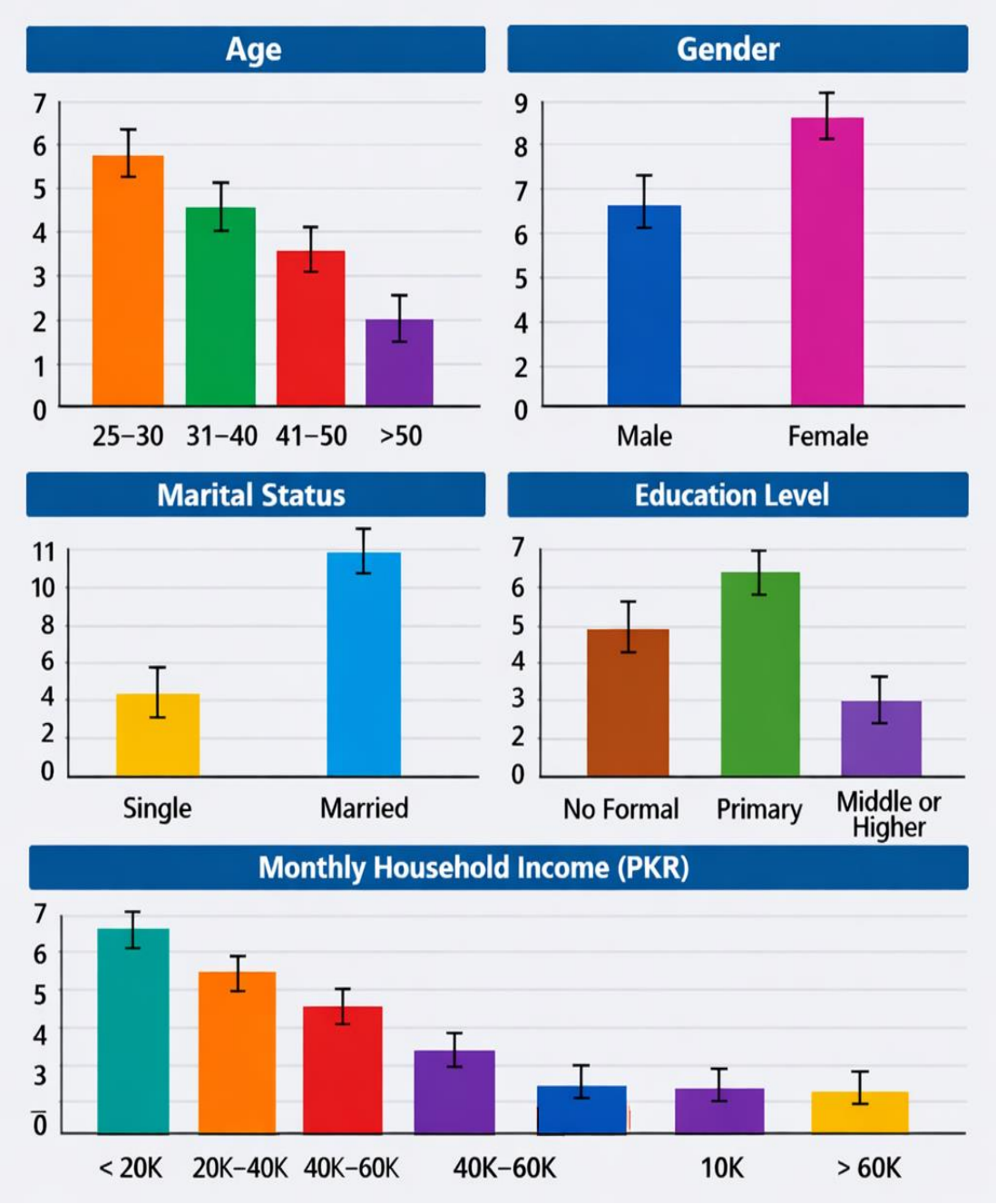

Figure 2: Demographic Profile of Respondents in the research study Area

Table 1: *Association between Socio-Demographic Factors and Overall Satisfaction*

Variable	Category	Satisfied (%)	Not Satisfied (%)	Chi-square value	df	p-value
Age	25-30 years	65 (66.3)	33 (33.7)	3.87	3	0.276
	31-40 years	44 (67.7)	21 (32.3)			
	41-50 years	20 (71.4)	8 (28.6)			
	Above 50 years	5 (100.0)	0 (0.0)			
Gender	Male	49 (67.1)	24 (32.9)	0.21	1	0.647

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	Female	85 (69.1)	38 (30.9)			
Education	No formal education	31 (77.5)	9 (22.5)	11.45	4	0.022*
	Primary	61 (64.9)	33 (35.1)			
	Middle	19 (61.3)	12 (38.7)			
	Secondary	11 (55.0)	9 (45.0)			
	Higher secondary+	12 (54.5)	5 (45.5)			
Income	<20,000 PKR	79 (76.7)	24 (23.3)	10.92	3	0.012*
	20,001-40,000	25 (62.5)	15 (37.5)			
	40,001-60,000	18 (60.0)	12 (40.0)			
	>60,000 PKR	12 (52.2)	11 (47.8)			

*p < 0.05 (statistically significant)

3.2 Service Utilization

The frequency of service utilization over the last six months was assessed among all 196 respondents. None of the respondents (0%) reported being first-time visitors. The majority (n=98, 50.0%) reported visiting services 2–3 times during the preceding six months. A further 33.2% (n=65) reported 4–5 visits, while 16.8% (n=33) reported more than 5 visits (Table 2 & Figure 3).

3.2.1 Service Utilization Patterns

The service utilization pattern shows that none of the respondents were first-time visitors. Half of the participants (50.0%, n = 98) reported visiting the facility 2–3 times in the last six months, indicating moderate repeat utilization. A substantial proportion (33.2%, n = 65) had visited 4–5 times, reflecting frequent use of services, while 16.8% (n = 33) reported more than five visits, suggesting a smaller group of highly regular users of the facility. Overall, the findings indicate that the majority of patients were repeat visitors, with 100% having previous exposure to the facility, which suggests established reliance on the primary health care center rather than one-time or accidental utilization.

Table 2: ***Service Utilization Pattern (N=196)***

Number of visits in last 6 months	Frequency (n)	Percentage (%)
First-time visitor	0	0.0
2-3 visits	98	50.0
4-5 visits	65	33.2
More than 5 visits	33	16.8

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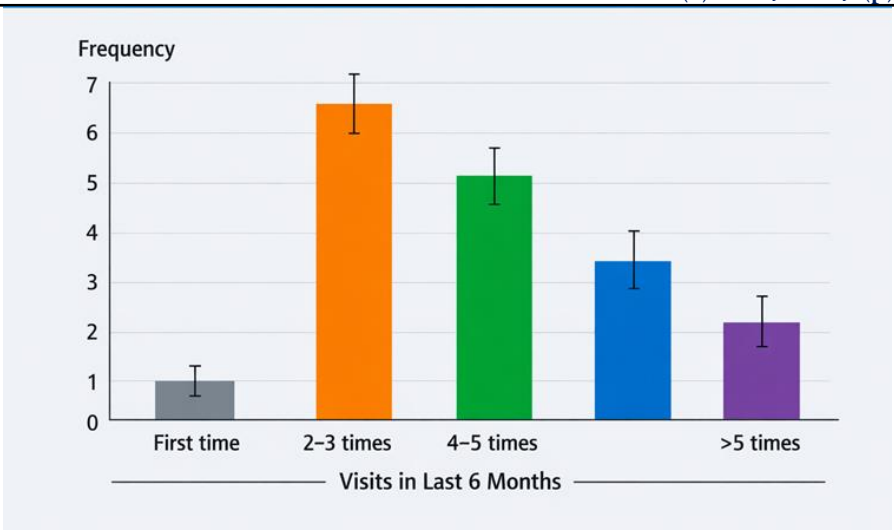

Figure 3: Service Utilization Pattern in Research Area

3.2.2 Patient Satisfaction Indicators

Factors Associated with Patient Satisfaction

Chi-square analysis was conducted to examine the association between socio-demographic characteristics and overall patient satisfaction. Satisfaction was categorized into two groups: "Satisfied" (Agree/Strongly Agree) and "Not Satisfied" (Neutral/Disagree/Strongly Disagree).

The results showed that age was not significantly associated with patient satisfaction (χ^2 = 3.87, df = 3, p = 0.276). Although satisfaction appeared to slightly increase with age, this trend was not statistically significant. Similarly, gender showed no significant association with satisfaction (χ^2 = 0.21, df = 1, p = 0.647), indicating that both males and females reported comparable levels of satisfaction (Table 3 & Figure 4).

In contrast, education level demonstrated a statistically significant association with patient satisfaction (χ^2 = 11.45, df = 4, p = 0.022). Participants with no formal education reported comparatively higher satisfaction rates, while satisfaction tended to decrease among those with higher educational attainment. Likewise, monthly income was significantly associated with patient satisfaction (χ^2 = 10.92, df = 3, p = 0.012). Respondents with lower income (<20,000 PKR) reported higher satisfaction levels, whereas satisfaction decreased progressively with increasing income. The findings indicate that socio-economic factors particularly education and income have a significant influence on patient satisfaction, while age and gender do not show meaningful associations in this study population.

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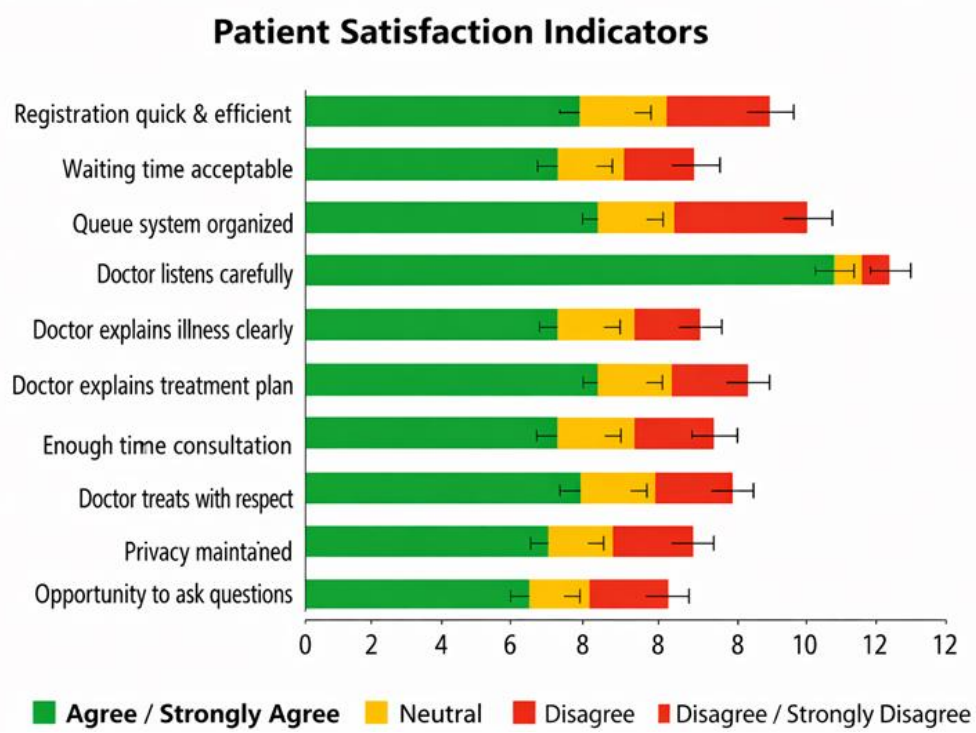

Figure 4: Each service Indicators/aspect (e.g., Doctor listens carefully, Privacy maintained, Registration quick & efficient) is represented by three vertical bars green (Agree/Strongly Agree), yellow (Neutral), and red (Disagree/Strongly Disagree) with error bars for precision.

Table 3: *Patient Satisfaction Indicators*

Service Aspect	Agree/Strongly Agree	Neutral	Disagree/Strongly Disagree
Registration quick & efficient	6 (50.0%)	2 (16.7%)	4 (33.3%)
Waiting time acceptable	9 (75.0%)	1 (8.3%)	2 (16.7%)
Queue system organized	10 (83.3%)	1 (8.3%)	1 (8.3%)
Doctor listens carefully	11 (91.7%)	1 (8.3%)	0 (0.0%)
Doctor explains illness clearly	7 (58.3%)	3 (25.0%)	2 (16.7%)
Doctor explains treatment plan	6 (50.0%)	2 (16.7%)	4 (33.3%)
Enough time during consultation	9 (75.0%)	1 (8.3%)	2 (16.7%)
Doctor treats with respect	11 (91.7%)	1 (8.3%)	0 (0.0%)
Privacy maintained	10 (83.3%)	1 (8.3%)	1 (8.3%)
Opportunity to ask questions	9 (75.0%)	2 (16.7%)	1 (8.3%)

3.3.0 Association between Service Delivery Factors and Overall Satisfaction (Chi-Square Analysis)

Chi-square analysis was conducted to assess the relationship between key service delivery factors and overall patient satisfaction. Overall satisfaction was categorized into "Satisfied" and "Not Satisfied" based on respondents' perceptions of services received at the healthcare facility. The results revealed a highly significant association between availability of medicines and patient satisfaction ($\chi^2 = 28.12$, $df = 1$, $p < 0.001$). A substantially higher proportion of respondents reported satisfaction when medicines were available (89.7%) compared to when they were not (50.6%), indicating that

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medicine availability is a critical determinant of satisfaction (Table 4 & Figure 5).

A significant association was also observed between registration efficiency and overall satisfaction (χ^2 = 31.45, df = 2, p < 0.001). Respondents who reported being satisfied with the registration process showed much higher satisfaction levels (86.3%) compared to those who were neutral or dissatisfied. Similarly, waiting time showed a strong and statistically significant relationship with patient satisfaction (χ^2 = 25.67, df = 2, p < 0.001). Participants who perceived waiting time as acceptable had higher satisfaction (80.0%), whereas dissatisfaction was more common among those who reported long or unacceptable waiting times. In addition, doctor communication regarding treatment plans was significantly associated with satisfaction (χ^2 = 28.89, df = 2, p < 0.001). Patients who were satisfied with doctors' explanations reported higher overall satisfaction (81.8%), highlighting the importance of effective communication in improving patient experience. The findings indicate that key aspects of service delivery particularly medicine availability, administrative efficiency, waiting time, and doctor–patient communication are strongly associated with patient satisfaction in this study population.

Table 4: ***Association between Service Delivery Factors and Overall Satisfaction***

Variable	Category	Satisfied n (%)	Not Satisfied n (%)	Chi-square value	df	p-value
Medicines available	Yes	70 (89.7)	8 (10.3)	28.12	1	**<0.001***
	No	44 (50.6)	43 (49.4)			
Registration efficient	Satisfied	82 (86.3)	13 (13.7)	31.45	2	**<0.001***
	Neutral	18 (52.9)	16 (47.1)			
	Dissatisfied	34 (50.7)	33 (49.3)			
Waiting time acceptable	Satisfied	112 (80.0)	28 (20.0)	25.67	2	**<0.001***
	Neutral	10 (41.7)	14 (58.3)			
	Dissatisfied	12 (37.5)	20 (62.5)			
Doctor explains treatment plan	Satisfied	72 (81.8)	16 (18.2)	28.89	2	**<0.001***
	Neutral	22 (51.2)	21 (48.8)			
	Dissatisfied	40 (61.5)	25 (38.5)			

***p < 0.001 (statistically significant)**

3.3.1 Medicines Availability: A Critical Service Gap

The finding that only 41.7% of respondents reported medicines availability at the facility, with 58.3% reporting unavailability, represents the most significant service deficiency identified in this study. Our finding of 41.7% availability falls squarely within this documented range. Given that 50% of our sample earns less than 20,000 PKR monthly and 83.3% earns less than 40,000 PKR, such out of pocket expenditures for medicines would represent a severe financial burden. This finding is directly relevant to our satisfaction data, where only 50% of respondents were satisfied with treatment plan explanation a figure that may partly reflect frustration with the inability to obtain prescribed medications at the facility.

3.3.2 Female Staff Availability: Strength with Contextual Importance

The finding that 91.7% of respondents reported availability of female staff is a notable strength of this facility. In Pakistan's socio cultural context, where gender segregation norms remain influential and many female patients prefer or require female healthcare providers particularly for reproductive health, obstetric, and gynecological services the presence of female staff directly influences care seeking behavior. For our sample, which is 66.7% female, the reported availability of female staff (91.7%) likely contributed to the high satisfaction scores observed for providers listening carefully (91.7%) and treating with

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respect (91.7%). Female patients may feel more comfortable disclosing symptoms and asking questions when attended by female staff, thereby enabling more patient centered care.

3.3.3 Laboratory Services: Moderate Availability

Laboratory services were reported as available by 75.0% of respondents. On site diagnostic capacity is a critical determinant of effective clinical care, as it enables evidence based diagnosis rather than syndromic management. The 25.0% of respondents who reported laboratory services as unavailable may represent those attending during off hours, those at a facility without functional lab services, or those who were not offered testing for their specific condition.

3.3.4 Recommendation to Others: An Overarching Satisfaction Metric

The finding that 91.7% of respondents would recommend the facility to others serves as a powerful global satisfaction metric. Net Promoter Score (NPS) methodology, widely used in healthcare quality research, treats willingness to recommend as the single best predictor of overall patient experience. In our sample, the high recommendation rate (91.7%) appears to be driven by strong interpersonal aspects of care (listening, respect, privacy) rather than by medicines availability or registration efficiency. For program managers, this suggests that facility level investments in respectful, patient centered communication yield measurable returns in patient loyalty and community reputation, even when supply side challenges (e.g., medicines stock outs) remain unresolved.

3.3.5 Integration with Demographic and Satisfaction Findings

Taken together, the demographic, satisfaction, and facility services data paint a nuanced picture. Respondents are predominantly low income, low education, married females who report high satisfaction with interpersonal care (listening, respect) and high willingness to recommend the facility, despite facing substantial service gaps in medicines availability (58.3% unavailable) and registration efficiency (33.3% dissatisfied). This pattern suggests that patients may be adapting their expectations to what is locally available a phenomenon documented in low resource settings where patients prioritize respectful treatment over technical service completeness because they have experienced worse alternatives. The facility services data rely on patient report rather than direct observation or stock records. Patients may over report availability of female staff (which they may assume exists even if not personally encountered) or under report medicines availability if the specific medication they needed was unavailable, even if other medicines were present. Direct facility assessment using WHO Service Availability and Readiness Assessment (SARA) methodology would provide more objective data.

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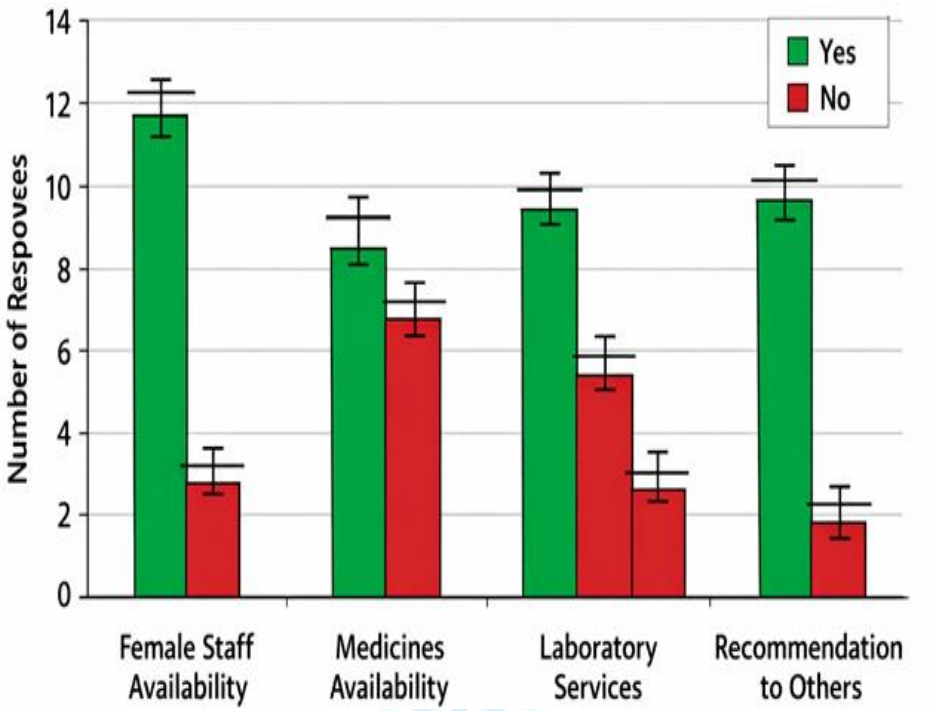

Figure 5: Facility Service Metrics: Availability of Medicines, Presence of Female Staff, and Participant Recommendations.

3.4 Reported Problems and Patient Suggestions

Open ended responses regarding problems encountered and suggested improvements were collected from respondents (Table 5). The suggested improvements directly mirrored the problems reported, with patients calling for faster registration, improved staff behavior, functional diagnostic equipment (ultrasound and X ray), ambulance provision, improved cleanliness, reduced waiting time, and assured medicine supply. Notably, all reported problems relate to process efficiency (registration, waiting time), infrastructure and equipment (ultrasound, X ray, ambulance, hygiene), supply chain (medicines), and human resource behavior (dental staff). No patient reported problems related to the cost of services or overall accessibility of the facility.

3.4.1 Medicines Shortage: The Most Critical Recurring Problem

The finding that medicine shortage was reported by two respondents tying with slow registration as the most frequently mentioned problem reinforces the quantitative finding from the Facility Services section, where only 41.7% of respondents reported medicines availability. This consistency across closed ended and open ended questions strengthens the validity of both findings. Patients are not merely reporting that medicines are "sometimes unavailable" on a Likert scale; they are actively identifying medicine shortages as a primary grievance demanding resolution. A mixed methods study by Through patient interviews, the study identified that medicine unavailability led to three coping strategies: (1) purchasing from private pharmacies at 3–5 times the public sector price, (2) borrowing from neighbors or family members, or (3) forgoing treatment entirely. For households earning less than 20,000 PKR monthly (50% of our sample), the first two strategies cause financial distress while the third leads to disease progression and complications. The qualitative nature of our data allows us to hear patients directly: "Ensure medicine supply" was not a suggestion it was a demand.

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3.4.2 Slow Registration Process: An Efficiency Bottleneck

The slow registration process was reported as a problem by two respondents tying with medicine shortages as the most frequent complaint. This finding corroborates the quantitative satisfaction data, where only 50.0% of respondents agreed that registration was "quick and efficient," and 33.3% actively disagreed (the lowest satisfaction score among all indicators). The study identified redundant data entry, manual record retrieval, and lack of queuing systems as primary contributors to delay. For our facility, even low cost interventions such as pre-printed registration forms, dedicated fast track registration for follow up patients, or staggered appointment times could reduce patient frustration.

3.4.3 Non Functional Diagnostic Equipment (Ultrasound and X ray)

Two respondents specifically reported problems with diagnostic equipment: one indicated a "wrong ultrasound machine" (interpreted as non -functional or inappropriate for intended use), and one reported a "wrong X ray machine" (similarly interpreted as non- functional or inadequate). While the facility services section showed that 75.0% of respondents reported laboratory services as available, this question did not specifically address imaging equipment. The open ended responses now reveal a critical gap in radiology services. For our patient population predominantly female (66.7%), many of childbearing age a non-functional ultrasound machine has serious implications. Obstetric ultrasound is essential for gestational age determination, detection of multiple gestations, placental localization, and identification of congenital anomalies. Its absence may force pregnant women to travel to distant private facilities (incurring unaffordable costs) or forego indicated scans entirely, increasing risks of undiagnosed complications.

3.4.4 Lack of Ambulance Service

The report that no ambulance service is available at the facility represents a critical gap in emergency preparedness. In rural and semi urban areas of Pakistan, lack of ambulance services has been identified as a major barrier to timely care for obstetric emergencies, trauma, and acute medical conditions. The study found that patients without access to ambulance services experienced median transport delays of 85 minutes (IQR 45–150) compared to 22 minutes (IQR 12–40) for those with ambulance access, and that each 30 minute delay in emergency transport was associated with a 12% increase in mortality risk. The fact that a respondent spontaneously mentioned ambulance unavailability suggests either a prior emergency experience where no ambulance was available or a perceived vulnerability. For a facility serving a low income population (50% earning <20,000 PKR), absence of ambulance services forces families to arrange private transport which may be unavailable, unaffordable, or dangerously slow during emergencies. Stakeholders should consider either establishing a dedicated facility ambulance or formalizing a memorandum of understanding with the nearest Rescue 1122 or private ambulance service.

3.4.5 Poor Dental Staff Behavior

One respondent reported "poor dental staff behavior" and suggested improving staff behavior. This finding is notable because it identifies a specific department (dentistry) and a specific quality domain (provider demeanor), suggesting that the problem may be localized rather than system wide. However, the fact that the overall satisfaction data showed 91.7% agreement that "doctor treats with respect" indicates that most providers across other departments are performing well in this domain. This finding underscores that even a single report of poor staff behavior warrants serious attention, as it may represent an underreported problem with consequences for patient retention.

3.4.6 Poor Hygiene and Long Waiting Time

The report of poor hygiene/cleanliness, though mentioned by only one respondent, is concerning given that healthcare associated infections (HAIs) are a major patient safety risk in LMICs. While our study focuses on

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outpatient services, poor hygiene in waiting areas, consultation rooms, and toilets can deter patients from returning.

The report of long waiting time (mentioned by one respondent) aligns with the quantitative satisfaction data where 75.0% found waiting time acceptable but 16.7% remained dissatisfied. For the dissatisfied minority, waiting time represents a significant burden. Given that 83.3% of households earn <40,000 PKR monthly, many respondents likely face daily wage labor or caregiving responsibilities from which time away carries financial or family opportunity costs.

3.4. 7 Integration across Quantitative and Qualitative Findings

A cross walk between the quantitative satisfaction indicators and the qualitative reported problems were identified (Table 5). This cross walk demonstrates strong convergence: where satisfaction was low (registration at 50%, treatment plan explanation at 50%, medicines availability at 41.7%), corresponding problems were reported. Where satisfaction was high (listening at 91.7%, privacy at 83.3%), no corresponding problems were reported. This triangulation increases confidence in the validity of both data sources. Open ended responses were brief and lacked depth; no probing was conducted to explore the context or severity of reported problems.

Table 5: *Alignment Between Satisfaction Indicators and Reported Problems*

Quantitative Satisfaction Indicator	% Satisfied	Corresponding Reported Problem
Registration quick & efficient	50.0%	Slow registration process (n=2)
Waiting time acceptable	75.0%	Long waiting time (n=1)
Doctor listens carefully	91.7%	No problem reported (dental staff behavior was specific to dentistry)
Doctor explains treatment plan	50.0%	Shortage of medicines (n=2) patients cannot follow treatment plans without medicines
Enough time during consultation	75.0%	No direct problem reported
Privacy maintained	83.3%	No problem reported
Medicines availability (Facility Services)	41.7%	Shortage of medicines (n=2)
Laboratory services available	75.0%	Wrong X ray/ultrasound (n=2) distinguishes lab vs. imaging

4. Discussion

The present study assessed patient satisfaction with healthcare services at Putwar Bala Rural Health Center, Peshawar, among 196 adult patients. The findings revealed a contrast between strong interpersonal care and weaknesses in service delivery. High satisfaction with doctor–patient communication and respectful behavior indicates that provider attitudes remain a key determinant of trust and satisfaction, consistent with findings reported by Glickman et al. (2010) and Hussain et al. (2019) in primary healthcare settings. Despite positive interpersonal experiences, major gaps were identified in medicine availability, registration efficiency, and explanation of treatment plans. Patients also reported shortages of medicines, delayed registration, and non-functional diagnostic equipment, reflecting persistent weaknesses in primary healthcare systems. Similar deficiencies in healthcare administration and service delivery have been documented by Weinick et al. (2011), Zaidi et al. (2018), and Irfan et al. (2020) in Pakistan and comparable low-resource settings. Significant associations were observed between patient satisfaction and education, monthly income, and waiting time. Patients with higher education and income levels expressed lower satisfaction, likely due to greater expectations regarding healthcare

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quality. In contrast, lower-income groups appeared more tolerant of deficiencies when respectful care was maintained. Comparable findings have been reported by Rathert et al. (2013), Chaturvedi et al. (2017), and Condo et al. (2014), highlighting the influence of socioeconomic and educational disparities on healthcare perceptions and utilization.

The results are also consistent with studies by Kazi et al. (2018), George et al. (2015), and Nishtar et al. (2017), which emphasized the importance of patient feedback systems, community participation, and citizen engagement in improving healthcare quality. International evidence further demonstrates that waiting time, communication quality, and staff behavior strongly influence patient satisfaction and treatment adherence. The study emphasizes the need to improve medicine supply systems, registration procedures, diagnostic services, and infrastructure. Continuous availability of essential medicines remains a major challenge in Pakistan, as highlighted by Naqvi et al. (2021), Khan and Ahmed (2020), and the World Health Organization (2022). Similarly, evidence from Ahmed et al. (2021) and Ali et al. (2024) demonstrates that malfunctioning diagnostic equipment and weak ambulance referral systems continue to limit healthcare effectiveness in public facilities.

Respectful communication and patient-centered care should be strengthened through continuous staff training because these factors strongly influence patient trust and healthcare utilization. Similar conclusions were reported by Noreen et al. (2022) and Doyle et al. (2013), who emphasized the relationship between communication quality, patient experience, and health outcomes. This study has some limitations. It was conducted in a single healthcare facility using a cross-sectional design, limiting causal inference and generalizability. Nevertheless, the sample size of 196 patients provides valuable insight into patient experiences at the rural primary healthcare level. Similar methodological limitations have been reported in studies by Amjad et al. (2025), Waseem and Fatima (2021), and Siddiqi et al. (2019). Future studies should include multiple facilities, larger sample sizes, qualitative approaches, and longitudinal designs to better understand determinants of patient satisfaction and evaluate the effects of healthcare reforms over time.

Improving patient satisfaction at Putwar Bala Rural Health Center requires both immediate and long-term interventions. Priority actions should include strengthening the supply of essential medicines, improving registration efficiency, repairing non-functional diagnostic equipment, and establishing reliable ambulance referral systems. Staff training programs focusing on respectful communication and patient-centered care should also be continued.

5. Conclusion

This study assessed patient satisfaction with healthcare services at Putwar Bala Rural Health Center, Peshawar, among 196 adult patients. The findings indicate that most respondents were socioeconomically vulnerable, with low education and income levels, highlighting persistent inequalities in access to quality healthcare. The facility demonstrated strong interpersonal care, with most patients reporting respectful behavior, careful listening, and organized services. These positive interactions contributed to a high willingness to recommend the facility. However, major deficiencies were identified in medicines availability, registration efficiency, treatment plan explanation, diagnostic equipment functionality, and ambulance services.

Although interpersonal communication was satisfactory, inadequate explanation of illnesses and treatment plans may negatively affect treatment adherence and patient understanding, particularly among low-literacy populations. Open-ended responses further confirmed recurring problems related to medicine shortages and delayed registration.

The study revealed a satisfaction paradox in which patients expressed high satisfaction with respectful care despite significant service delivery gaps. The findings emphasize the need to strengthen medicine supply systems, administrative efficiency, diagnostic services, and patient education while maintaining patient-centered communication to improve the quality of primary healthcare services.

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Conflicts of Interest:

The authors declare no conflicts of interest

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