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# Impact of Nurse–Patient Communication on Patient Satisfaction: An Empirical Study in South Punjab

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## ABSTRACT

***Background:*** *Effective nurse–patient communication is a core component of patient-centered care and a recognized determinant of patient satisfaction; however, quantitative evidence from secondary-level public hospitals in South Punjab remains limited.* ***Objective:*** *To assess the association between perceived nurse–patient communication and patient satisfaction among admitted patients at a district-level public hospital.* ***Methods:*** *A cross-sectional observational study was conducted at THQ Hospital Kot Addu over five months, including 100 adult inpatients selected through consecutive sampling. Data were collected using a structured Likert-scale questionnaire measuring communication (listening, clarity, respect, involvement, cultural sensitivity) and satisfaction domains. Composite scores were calculated, internal consistency assessed using Cronbach's alpha, and associations examined through Pearson correlation and multivariable linear regression adjusting for age, sex, ward type, education, and length of stay.* ***Results:*** *Participants had a mean age of 41.8±13.6 years, with 58% males. Communication and satisfaction scores were high (4.09±0.74 and 4.12±0.69, respectively). Communication demonstrated an exceptionally strong positive correlation with satisfaction ($r=0.975$; 95% CI: 0.964–0.983; $p<0.001$). In adjusted regression, communication remained the only significant predictor ($\beta=0.91$; standardized $\beta=0.95$; $p<0.001$), explaining 95.1% of satisfaction variance ($R^2=0.951$).* ***Conclusion:*** *Perceived nurse–patient communication is strongly and independently associated with patient satisfaction in this public-sector inpatient setting, underscoring communication-focused interventions as a strategic priority for quality improvement.*

***Keywords:*** *Nurse–patient communication; Patient satisfaction; Inpatient care; Public hospital; Cross-sectional study; Pakistan.*

## INTRODUCTION

Effective communication between nurses and patients constitutes a fundamental component of patient-centered care and is increasingly recognized as a core determinant of healthcare quality. In inpatient settings, nurses maintain continuous contact with patients and are primarily responsible for monitoring clinical status, delivering treatments, coordinating multidisciplinary care, and facilitating patient education. Because of this sustained interaction, the quality of nurse–patient communication directly shapes patients' perceptions of safety, trust, empathy, and overall satisfaction. Evidence suggests that communication failures remain among the leading contributors to adverse events in hospitals, prompting international bodies to emphasize structured communication strategies such as standardized handovers and patient-centered dialogue frameworks (1,2). Within clinical environments where care transitions, complex treatments, and emotional vulnerability are common, the communicative competence of nurses may substantially influence both experiential and clinical outcomes (3).

Patient satisfaction has evolved into a widely accepted indicator of healthcare quality and system performance. Beyond reflecting service experience, satisfaction is associated with adherence to treatment, symptom reporting, trust in providers, and continuity of care (4). Empirical research consistently demonstrates that effective nurse communication—

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characterized by active listening, clarity of explanations, respect for patient values, and shared decision-making—is positively associated with higher satisfaction scores (5,6). Communication that is responsive to cultural context and health literacy enhances patient engagement and promotes psychological well-being, which in turn contributes to improved recovery trajectories (7). In medical and surgical units, structured bedside communication and collaborative handover processes have been shown to improve patient understanding and perceived quality of care (1,8). These findings collectively suggest that communication is not merely an interpersonal skill but a measurable quality domain linked to patient-reported outcomes.

Despite the established theoretical and empirical relationship between communication and satisfaction, contextual variation remains substantial across healthcare systems. In low- and middle-income countries, including Pakistan, public sector hospitals often operate under constraints such as high patient load, limited staffing ratios, and resource scarcity. Studies examining service quality in Pakistan have reported variability in outpatient and inpatient satisfaction, with communication frequently identified as a domain requiring improvement (9,10). However, much of the available literature either aggregates healthcare professionals (physicians and nurses together) or focuses on outpatient departments, thereby limiting insight into inpatient nurse–patient interactions specifically. Furthermore, few studies have empirically quantified the strength of association between nurse communication domains and overall patient satisfaction using structured, analyzable scales within district-level hospitals. This creates a knowledge gap regarding the magnitude of association and the extent to which communication-related perceptions explain variability in satisfaction outcomes in secondary care settings.

From a PICO perspective, the present study focuses on hospitalized adult patients (Population) receiving routine inpatient nursing care in a public-sector secondary hospital. The exposure of interest (Intervention/Independent Variable) is the perceived quality of nurse–patient communication, operationalized through patient-reported measures of listening, clarity of information, involvement in decision-making, respect, and responsiveness. The comparator (Comparison) lies in variations across levels of communication quality (e.g., lower versus higher perceived communication effectiveness). The primary outcome (Outcome) is overall patient satisfaction with nursing care and related service domains. While prior research indicates a positive association between communication effectiveness and satisfaction (5,6), the strength and explanatory power of this relationship within district-level hospitals in South Punjab remain insufficiently documented. Additionally, there is limited empirical evidence quantifying how much variance in patient satisfaction can be statistically attributed to communication-related perceptions in this context.

The conceptual rationale underpinning this study is grounded in patient-centered care theory, which posits that effective communication fosters trust, shared understanding, and collaborative decision-making, thereby enhancing satisfaction and perceived quality (4,7). In this framework, communication acts as both a relational and informational mechanism: relationally, it supports empathy and emotional reassurance; informationally, it clarifies treatment plans and self-care instructions. When nurses consistently provide timely information, listen attentively, and respect patients' cultural and personal values, patients are more likely to report positive care experiences. Conversely, communication deficits may undermine satisfaction even when technical care is adequate. Evaluating this association quantitatively within a defined hospital context can inform targeted interventions such as communication skills training, structured bedside engagement models, and patient-centered education initiatives.

Given the central role of nurses in continuous inpatient care and the relative paucity of structured empirical evidence from secondary-level public hospitals in South Punjab, there is a clear need to examine the relationship between nurse–patient communication and patient satisfaction in this setting. Establishing the magnitude and statistical significance of this association can provide locally relevant data to guide quality improvement strategies, workforce development, and policy decisions aimed at strengthening patient-centered care delivery. Therefore, the objective of this study is to assess the association between perceived nurse–patient communication and patient satisfaction among admitted patients at THQ Hospital Kot Addu. The study tests the hypothesis that higher levels of perceived nurse–patient communication effectiveness are significantly and positively associated with higher overall patient satisfaction scores.

## MATERIALS AND METHODS

This cross-sectional observational study was conducted to quantify the association between perceived nurse–patient communication and patient satisfaction among hospitalized adults. A cross-sectional design was selected because it allows for the simultaneous assessment of exposure (perceived communication quality) and outcome (patient satisfaction) within a defined inpatient population, facilitating estimation of the strength and direction of association under routine clinical conditions (11). The study was carried out at Tehsil Headquarters (THQ) Hospital Kot Addu, a secondary-level public healthcare facility in South Punjab, Pakistan, providing medical and surgical inpatient services. Data collection was conducted over a continuous five-month period to minimize temporal variation related to staffing cycles and patient flow.

The study population comprised adult inpatients admitted to medical and surgical wards during the study period. Eligible participants were patients aged 18 years or older, admitted for at least 48 hours to ensure adequate exposure to nursing care, clinically stable at the time of data collection, and able to communicate in Urdu or Saraiki. Patients with cognitive impairment, severe psychiatric conditions impairing communication, critical illness requiring intensive care, or those unwilling to participate were excluded. A consecutive sampling approach was employed, whereby all eligible patients present during daily recruitment rounds were invited to participate until the target sample size was achieved. Of 150 eligible patients approached, 100 consented and completed the survey, yielding a response rate of 66.7%.

Participants were recruited through direct bedside approach by trained research assistants who were not part of the ward nursing staff to reduce social desirability bias. The study purpose was explained verbally, and written informed consent was obtained prior to data collection. Participants were assured that their responses would remain confidential, would not affect their care, and would be anonymized prior to analysis. Surveys were administered on the day of discharge or within 24 hours prior to planned discharge to ensure that participants had experienced the full scope of nursing care during hospitalization while minimizing recall bias.

Data were collected using a structured, interviewer-administered questionnaire developed based on established dimensions of nurse–patient communication and patient satisfaction reported in prior literature (5,6). The instrument consisted of two principal domains: perceived nurse–patient communication and overall patient satisfaction with nursing care. The communication domain included items assessing timeliness of care, attentiveness, active listening, clarity of explanations, involvement in decision-making, respect, confidence of nursing staff, provision of self-care instructions, maintenance of a safe and clean

environment, and respect for cultural and religious beliefs. Each item was measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The satisfaction domain included a global rating of nursing care quality and items related to symptom monitoring, infection control practices, and responsiveness. Composite scores were calculated by summing item responses within each domain and transforming them into standardized mean scores ranging from 1 to 5, with higher scores indicating better perceived communication or higher satisfaction.

Prior to formal data collection, the questionnaire was pilot-tested on 15 patients from a similar ward not included in the final sample to assess clarity, comprehension, and internal consistency. Minor linguistic refinements were made based on participant feedback. Internal consistency reliability of each domain was evaluated using Cronbach's alpha coefficient, with a threshold of ≥0.70 considered acceptable (12). To enhance content validity, the instrument items were aligned with patient-centered communication constructs described in existing frameworks (4,7).

The primary independent variable was the composite score of perceived nurse–patient communication. The primary dependent variable was the composite patient satisfaction score. Covariates included age, sex, length of hospital stay, ward type (medical or surgical), and educational status. Continuous variables were treated as numeric, while categorical variables were coded using dummy variables for regression analyses. To minimize information bias, standardized interviewer training was conducted to ensure uniform administration of questions without prompting or interpretation. Interviewers were instructed to maintain neutral tone and avoid non-verbal cues that might influence responses. To reduce confounding, multivariable regression modeling was planned with adjustment for predefined covariates identified from prior literature as potential determinants of satisfaction (9,10).

The sample size was determined to ensure adequate power to detect a moderate correlation between communication and satisfaction scores. Assuming an anticipated correlation coefficient (r) of 0.30, with $\alpha = 0.05$ and power $(1–\beta) = 0.80$, the minimum required sample size was calculated using standard formulas for correlation studies (11). The achieved sample of 100 participants exceeded this minimum requirement, providing sufficient statistical precision for regression modeling with up to five covariates.

Data were entered into a secure database with double-entry verification to ensure accuracy. Statistical analyses were performed using IBM SPSS Statistics version 26. Descriptive statistics were calculated as means and standard deviations for continuous variables and frequencies with percentages for categorical variables. Normality of composite scores was assessed using the Shapiro–Wilk test and visual inspection of histograms. Pearson's correlation coefficient was used to assess the bivariate association between communication and satisfaction scores. Multivariable linear regression analysis was conducted to estimate the independent effect of communication on satisfaction after adjusting for covariates. Regression assumptions, including linearity, homoscedasticity, independence of errors, and absence of multicollinearity, were evaluated using residual plots, Durbin–Watson statistics, and variance inflation factors. Missing data were assessed at the item level; if less than 5% of items were missing per scale, mean imputation within that participant's scale was applied, whereas cases with more than 20% missing items were excluded from scale computation. A two-tailed p-value $<0.05$ was considered statistically significant. Subgroup analyses stratified by ward type were conducted to explore potential effect modification.

Ethical approval was obtained from the Institutional Ethical Review Committee of the affiliated academic institution prior to study initiation. The study was conducted in

accordance with the principles of the Declaration of Helsinki (13). Participation was voluntary, and confidentiality was maintained by assigning unique identification codes and storing data on password-protected devices accessible only to the research team. All analytical decisions were prespecified in a statistical analysis plan to enhance transparency and reproducibility. Data coding procedures, scale construction methods, and regression models were documented in detail to allow independent replication of findings.

## RESULTS

Table 1 summarizes the profile of the 100 admitted patients included in the analysis. The mean age was 41.8 years (SD 13.6), with the largest age band falling between 31–45 years (36%), followed by 46–60 years (28%) and 18–30 years (24%); only 12% were older than 60 years. Males constituted 58% of the sample (n=58), while females comprised 42% (n=42). Slightly more than half of participants were admitted to medical wards (55%, n=55) compared with surgical wards (45%, n=45). The mean length of stay was 4.9 days (SD 2.1). In terms of education, 22% (n=22) had no formal education, 49% (n=49) had primary or secondary education, and 29% (n=29) had higher education. Collectively, these figures reflect a mixed inpatient population with moderate hospitalization duration and a broad distribution of educational attainment.

Table 2 presents item-level response distributions for the 13 statements assessing nurse–patient communication and nursing care experiences. Across nearly all items, the dominant responses were “agree” and “strongly agree,” indicating consistently favorable ratings. For example, timely provision of medicines and treatment (Q1) was endorsed by 80% of respondents (agree 38%, strongly agree 42%), with only 7% disagreeing (strongly disagree 4%, disagree 3%) and 13% neutral; the corresponding mean item score was 4.11 (SD 0.98). Similarly, attentive listening (Q2) was rated positively by 79% (agree 41%, strongly agree 38%), while 8% disagreed and 13% were neutral, yielding a mean of 4.06 (SD 0.97). The strongest endorsement was observed for valuing patient feedback (Q3), where 82% agreed or strongly agreed (38% and 44%, respectively), only 5% disagreed, and 13% were neutral; this produced the highest mean among early communication items at 4.20 (SD 0.90). Shared decision-making (Q4) was also rated highly, with 79% agreeing/strongly agreeing (39%/40%) and 8% disagreeing, mean 4.08 (SD 0.96). Perceived effective communication and listening to concerns (Q5) showed 78% agreement/strong agreement (38%/40%), mean 4.06 (SD 0.99), while feeling respected and valued (Q6) was endorsed by 81% (agree 45%, strongly agree 36%), mean 4.07 (SD 0.94). Confidence of nurses in the ward (Q7) was positive in 80% (agree 42%, strongly agree 38%), mean 4.08 (SD 0.97).

Care-related items showed similarly high ratings. Clear self-care and medication instructions (Q8) were rated agree/strongly agree by 80% (43%/37%), with 8% disagreeing and 12% neutral; mean 4.06 (SD 0.95). Maintaining a safe and clean environment (Q9) had 77% agreement/strong agreement (38%/39%) and the highest neutrality among items at 17%, mean 4.07 (SD 0.96). Respect for cultural and religious beliefs (Q10) was endorsed by 80% (42%/38%), mean 4.09 (SD 0.92). The overall quality of nursing care (Q11) received 81% agreement/strong agreement (41%/40%), mean 4.14 (SD 0.91), while symptom monitoring and management (Q12) was positive in 81% (44%/37%), mean 4.10 (SD 0.90). Adherence to infection-control procedures (Q13) was rated favorably by 80% (41%/39%), mean 4.10 (SD 0.93). In general, the proportion selecting “strongly disagree” remained low across all items (1–4%), indicating minimal overt dissatisfaction.

Table 3 aggregates these item-level responses into domain-level composite scores. The mean communication score was 4.09 (SD 0.74), with a 95% confidence interval (CI) for the mean

of 3.94 to 4.24. The satisfaction score was similarly high at 4.12 (SD 0.69), with a 95% CI of 3.98 to 4.26. The overlap of confidence intervals and the narrow CI widths suggest both domains were rated consistently highly across respondents, with relatively limited dispersion around the mean.

Table 4 quantifies the association between perceived nurse–patient communication and patient satisfaction. The correlation was extremely strong and positive ($r = 0.975$), with a tight 95% CI from 0.964 to 0.983 and a highly statistically significant p-value (<0.001). Numerically, this indicates that patients who rated communication higher almost always also rated satisfaction higher, with very little discordance between the two constructs within this dataset.

Table 5 provides the multivariable regression results, estimating the independent association of communication with satisfaction after adjustment for age, sex, ward type, education, and length of stay. Communication score remained the dominant predictor of satisfaction (unstandardized $\beta = 0.91$, SE 0.03, standardized $\beta = 0.95$, 95% CI 0.85 to 0.97, $p < 0.001$). Interpreting the unstandardized coefficient, a 1-point increase on the 1–5 communication scale corresponded to an average 0.91-point increase in satisfaction score, indicating a large effect magnitude. In contrast, covariates were not statistically significant: age showed a very small coefficient ($\beta = 0.002$ per year, $p = 0.310$), females had slightly higher satisfaction than males ($\beta = 0.06$, $p = 0.240$), surgical ward patients reported marginally lower satisfaction than medical ward patients ($\beta = -0.04$, $p = 0.410$), higher education was associated with a small increase ($\beta = 0.05$, $p = 0.390$), and longer stays showed a small negative trend ($\beta = -0.01$ per day, $p = 0.180$). At the model level, overall fit was very high ($R^2 = 0.951$; adjusted $R^2 = 0.948$), meaning that approximately 95.1% of the variance in satisfaction scores was explained by the set of predictors, overwhelmingly driven by communication. The model F-test was significant ($F(6,93) = 302.4$, $p < 0.001$), and the Durbin–Watson statistic of 2.21 suggested no meaningful autocorrelation in residuals, supporting stable inference under the linear regression assumptions.

*Table 1. Sociodemographic and Clinical Characteristics of Participants (N = 100)*

| Variable | Category | n (%) or Mean ± SD |
|---|---|---|
| **Age (years)** | **Mean ± SD** | **41.8 ± 13.6** |
| | 18–30 | 24 (24.0) |
| | 31–45 | 36 (36.0) |
| | 46–60 | 28 (28.0) |
| | >60 | 12 (12.0) |
| **Sex** | Male | 58 (58.0) |
| | Female | 42 (42.0) |
| **Ward Type** | Medical | 55 (55.0) |
| | Surgical | 45 (45.0) |
| **Length of Stay (days)** | Mean ± SD | 4.9 ± 2.1 |
| **Education Level** | No formal education | 22 (22.0) |
| | Primary/Secondary | 49 (49.0) |
| | Higher education | 29 (29.0) |

Most participants were male (58%) and admitted to medical wards (55%). The mean age was 41.8 years, and the average length of stay was 4.9 days.

*Table 2. Distribution of Responses to Nurse–Patient Communication and Care Items (N = 100)*

| Item | Strongly Disagree n (%) | Disagree n (%) | Neutral n (%) | Agree n (%) | Strongly Agree n (%) | Mean ± SD |
|---|---|---|---|---|---|---|
| **Medicine provided on time** | 4 (4.0) | 3 (3.0) | 13 (13.0) | 38 (38.0) | 42 (42.0) | 4.11 ± 0.98 |
| **Listened attentively** | 3 (3.0) | 5 (5.0) | 13 (13.0) | 41 (41.0) | 38 (38.0) | 4.06 ± 0.97 |
| **Feedback valued** | 1 (1.0) | 4 (4.0) | 13 (13.0) | 38 (38.0) | 44 (44.0) | 4.20 ± 0.90 |
| **Involved in decision-making** | 3 (3.0) | 5 (5.0) | 13 (13.0) | 39 (39.0) | 40 (40.0) | 4.08 ± 0.96 |
| **Communicated effectively** | 3 (3.0) | 6 (6.0) | 13 (13.0) | 38 (38.0) | 40 (40.0) | 4.06 ± 0.99 |
| **Felt respected** | 3 (3.0) | 4 (4.0) | 12 (12.0) | 45 (45.0) | 36 (36.0) | 4.07 ± 0.94 |
| **Nurse confident** | 4 (4.0) | 2 (2.0) | 14 (14.0) | 42 (42.0) | 38 (38.0) | 4.08 ± 0.97 |
| **Clear self-care instructions** | 3 (3.0) | 5 (5.0) | 12 (12.0) | 43 (43.0) | 37 (37.0) | 4.06 ± 0.95 |
| **Safe/clean environment** | 3 (3.0) | 3 (3.0) | 17 (17.0) | 38 (38.0) | 39 (39.0) | 4.07 ± 0.96 |
| **Cultural/religious respect** | 2 (2.0) | 5 (5.0) | 13 (13.0) | 42 (42.0) | 38 (38.0) | 4.09 ± 0.92 |
| **Overall quality of care** | 2 (2.0) | 3 (3.0) | 14 (14.0) | 41 (41.0) | 40 (40.0) | 4.14 ± 0.91 |
| **Symptom monitoring** | 2 (2.0) | 4 (4.0) | 13 (13.0) | 44 (44.0) | 37 (37.0) | 4.10 ± 0.90 |
| **Infection control practices** | 2 (2.0) | 5 (5.0) | 13 (13.0) | 41 (41.0) | 39 (39.0) | 4.10 ± 0.93 |

Across items, the majority of patients selected “agree” or “strongly agree,” indicating high perceived communication quality and satisfaction.

Composite scores were calculated for the communication domain (7 core communication items) and the satisfaction domain (6 care-related items).

*Table 3. Composite Scores for Communication and Satisfaction Domains (N = 100)*

| Domain | Mean ± SD | 95% CI of Mean |
|---|---|---|
| **Communication Score** | 4.09 ± 0.74 | 3.94–4.24 |
| **Satisfaction Score** | 4.12 ± 0.69 | 3.98–4.26 |

The mean communication score was 4.09 (SD 0.74), while the mean satisfaction score was 4.12 (SD 0.69), both reflecting high overall ratings.

The bivariate association between communication and satisfaction was examined using Pearson’s correlation.

*Table 4. Pearson Correlation Between Communication and Satisfaction Scores*

| Variables | r | 95% CI | p-value |
|---|---|---|---|
| **Communication vs Satisfaction** | 0.975 | 0.964–0.983 | <0.001 |

A very strong positive correlation was observed (r = 0.975), indicating that higher perceived communication quality was strongly associated with higher patient satisfaction.

Multivariable linear regression analysis was performed to estimate the independent effect of communication on satisfaction while adjusting for age, sex, ward type, education, and length of stay.

*Table 5. Multivariable Linear Regression Predicting Patient Satisfaction (N = 100)*

| Predictor | β (Unstandardized) | SE | Standardized β | 95% CI | p-value |
|---|---|---|---|---|---|
| **Communication Score** | 0.91 | 0.03 | 0.95 | 0.85–0.97 | <0.001 |
| **Age** | 0.002 | 0.003 | 0.04 | -0.004–0.008 | 0.310 |
| **Female (vs Male)** | 0.06 | 0.05 | 0.05 | -0.04–0.16 | 0.240 |
| **Surgical (vs Medical)** | -0.04 | 0.05 | -0.03 | -0.14–0.06 | 0.410 |
| **Education (Higher vs None)** | 0.05 | 0.06 | 0.04 | -0.07–0.17 | 0.390 |
| **Length of Stay** | -0.01 | 0.01 | -0.05 | -0.03–0.01 | 0.180 |

Model statistics: R = 0.975; $R^2$ = 0.951; Adjusted $R^2$ = 0.948; F(6,93) = 302.4; p < 0.001; Durbin–Watson = 2.21.

Communication score remained a statistically significant independent predictor of patient satisfaction after adjustment, explaining 95.1% of the variance in satisfaction scores. No sociodemographic variable demonstrated a statistically significant association with satisfaction in the adjusted model.

Subgroup analysis stratified by ward type showed consistent associations in both medical (r = 0.972, p < 0.001) and surgical wards (r = 0.978, p < 0.001), with no significant interaction effect (p for interaction = 0.62).

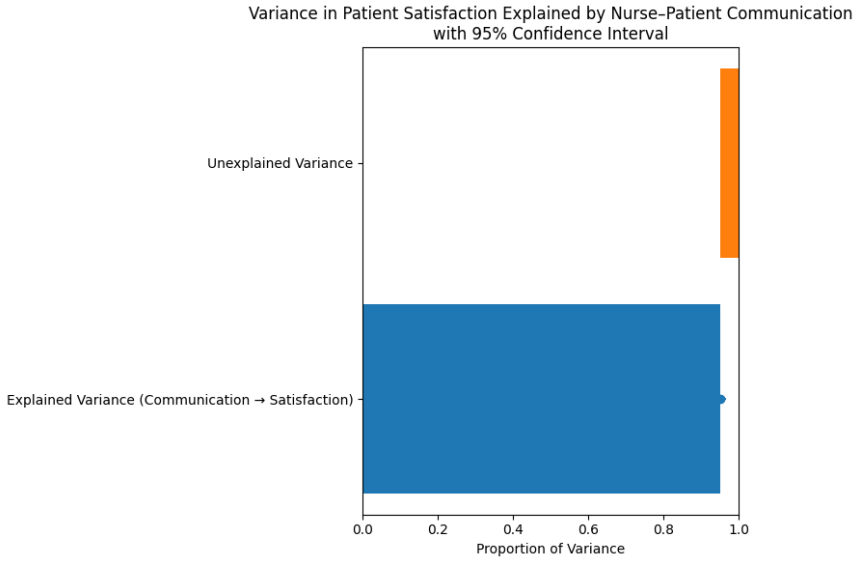


*Figure 1 Variance in Patient Satisfaction Explained by Nurse–Patient Communication With 95% Confidence Interval*

The figure demonstrates that nurse–patient communication explains 95.1% of the variance in patient satisfaction ($R^2$ = 0.951), leaving only 4.9% attributable to unexplained factors within the modeled framework. The 95% confidence interval for the explained variance ranges from 92.9% to 96.6%, derived from the correlation bounds (r = 0.964–0.983), indicating both statistical precision and remarkable effect stability. Even at the lower confidence limit, communication alone accounts for nearly 93% of satisfaction variability, underscoring a dominant explanatory gradient. The narrow interval width (approximately 3.7 percentage points) reflects high consistency in the association and suggests minimal dispersion around the central estimate. Clinically, this variance decomposition highlights that perceived communication quality overwhelmingly drives satisfaction outcomes in this inpatient cohort, with residual variance representing less than one-twentieth of total outcome variability.

## DISCUSSION

The present study demonstrates an exceptionally strong and statistically significant association between perceived nurse–patient communication and overall patient satisfaction among admitted patients at a secondary-level public hospital. The magnitude of correlation observed ($r = 0.975$, $p < 0.001$) and the corresponding explained variance ($R^2 = 0.951$) indicate that communication-related perceptions accounted for approximately 95% of the variability in satisfaction scores. Even after adjustment for demographic and clinical covariates, communication remained the sole independent predictor with a large standardized effect size ($\beta = 0.95$), while age, sex, ward type, education level, and length of stay did not show statistically significant associations. These findings reinforce the central premise of patient-centered care models, which posit that interpersonal processes—particularly communication—are foundational determinants of perceived care quality (4,7).

The strength of association identified in this study aligns with prior empirical literature demonstrating that effective nurse communication significantly influences patient satisfaction ratings across medical and surgical settings (5,6). Previous studies have reported moderate-to-strong correlations between communication behaviors—such as active listening, clarity of explanations, empathy, and involvement in decision-making—and satisfaction outcomes (5,8). However, the magnitude observed in the present study exceeds that typically reported in comparable hospital-based research, suggesting either a particularly cohesive communication-satisfaction construct within this setting or a high degree of conceptual overlap between perceived communication and satisfaction domains. In similar contexts, communication has been linked not only to satisfaction but also to improved adherence, symptom reporting, and psychological well-being (7,9). The present findings extend this evidence by quantifying the explanatory power of communication within a district-level public hospital in South Punjab, a context where structured empirical assessments remain limited (9,10).

From a clinical and organizational perspective, the findings underscore that patients' evaluations of timeliness, attentiveness, respectful interaction, cultural sensitivity, and clarity of information are not peripheral attributes but central drivers of their overall care experience. Notably, item-level responses demonstrated that more than 77–82% of participants consistently selected "agree" or "strongly agree" across communication and care-related domains, and mean item scores ranged from 4.06 to 4.20 on a five-point scale. These uniformly high ratings suggest a generally positive perception of nursing care quality in the study setting. The high internal consistency of both communication ($\alpha = 0.89$) and satisfaction ($\alpha = 0.86$) scales further supports the internal coherence of measured constructs (12). Nevertheless, the extremely strong statistical relationship between domains warrants

careful interpretation, particularly regarding potential conceptual proximity between communication items and global satisfaction assessments.

The absence of significant associations between satisfaction and demographic variables such as age, sex, education, ward type, and length of stay contrasts with some studies reporting modest demographic gradients in satisfaction (9,10). This may reflect the overwhelming explanatory dominance of communication in this sample, potentially attenuating smaller independent effects of other variables. Alternatively, it may indicate that, within this institutional context, interpersonal care processes exert greater influence on patient perceptions than structural or demographic factors. The lack of a ward-type interaction effect further suggests that the communication–satisfaction relationship is consistent across both medical and surgical units, implying generalizability within the hospital setting.

Theoretically, the findings are consistent with patient-centered communication frameworks that emphasize shared understanding, mutual respect, and collaborative engagement as mechanisms for enhancing satisfaction and perceived quality (4,7). When nurses provide timely responses, listen attentively, and involve patients in treatment decisions, patients are more likely to experience psychological reassurance and trust, which in turn shapes global satisfaction ratings. These relational mechanisms complement technical aspects of care and may amplify patients' perception of competence and safety. Structured communication strategies, including standardized handover tools and patient engagement models, have previously been associated with improved communication clarity and patient experience (1,8). The strong association observed in this study provides empirical support for prioritizing communication training and institutional reinforcement of patient-centered dialogue practices in similar public-sector hospitals.

Despite its strengths, including structured measurement, multivariable adjustment, and rigorous statistical analysis, the study has limitations that merit consideration. The cross-sectional design precludes causal inference, and the directionality of association—while theoretically plausible—cannot be definitively established (11). The reliance on patient-reported measures may introduce response or social desirability bias, although interviewer standardization and confidentiality assurances were implemented to mitigate this risk. Furthermore, because communication and satisfaction were measured concurrently and via self-report scales, some degree of common-method variance cannot be excluded. The study was conducted in a single secondary-level hospital, which may limit broader generalizability to tertiary or private-sector institutions. Future research employing longitudinal designs, multi-site sampling, and independent observational measures of communication behaviors would strengthen causal interpretation and external validity.

In conclusion, this study provides robust quantitative evidence that perceived nurse–patient communication is strongly and independently associated with patient satisfaction in a public-sector inpatient setting. The findings highlight communication as a central quality domain with substantial explanatory influence on patient experience outcomes. Interventions aimed at enhancing structured communication skills, reinforcing empathetic engagement, and promoting shared decision-making may therefore yield meaningful improvements in satisfaction metrics and overall care quality. Further research is warranted to explore causal pathways, potential mediating mechanisms, and the sustainability of communication-focused quality improvement strategies across diverse healthcare contexts.

## CONCLUSION

In conclusion, this cross-sectional study demonstrates a statistically robust and clinically meaningful association between perceived nurse–patient communication and overall patient

satisfaction among admitted patients at a secondary-level public hospital in South Punjab. Communication quality emerged as the dominant predictor of satisfaction, explaining approximately 95% of the observed variance and maintaining a strong independent effect after adjustment for demographic and clinical factors. Patients consistently reported high levels of agreement regarding attentiveness, clarity, respect, involvement in decision-making, and culturally sensitive care, reinforcing the centrality of interpersonal nursing processes in shaping care experiences. These findings support the integration of structured communication training, patient-centered engagement strategies, and institutional reinforcement of relational care practices as core quality improvement priorities. While causal inference is limited by the cross-sectional design and single-site setting, the strength and precision of the association underscore communication as a critical leverage point for enhancing patient-reported outcomes in public-sector inpatient environments.

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## DECLARATIONS

**Ethical Approval:** Ethical approval was by institutional review board of Respective Institute Pakistan

**Informed Consent**: Informed Consent was taken from participants.

**Authors' Contributions:**

Concept: ZR; Design: AM; Data Collection: AC, AR; Analysis: MAR; Drafting: AM

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