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| RESEARCH ARTICLE

Nurse–Patient Communication and Its Impact on Patient Satisfaction: A Descriptive Cross-Sectional Study at a Secondary-Care Public Hospital in Kohat, Pakistan

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| ABSTRACT

Communication between nurses and patients is one of the most consistently cited determinants of patient satisfaction with nursing care. While international and Pakistani evidence broadly links effective nurse-patient communication to higher satisfaction, site-specific data from secondary-care public-sector hospitals in Khyber Pakhtunkhwa remain limited. The study aimed to evaluate nurse-patient communication and patient satisfaction among admitted patients at District Headquarter (DHQ) Hospital Kohat. A descriptive cross-sectional study was conducted among 150 adult inpatients recruited by convenience sampling from the Medical, Surgical, Gynecological/Obstetric, Orthopedic, Pediatric, and ICU/CCU departments of DHQ Hospital Kohat. Data were collected using a structured, interviewer-assisted questionnaire comprising demographic items, a 10-item nurse-patient communication scale, and a 10-item patient satisfaction scale, both scored on a 5-point Likert format (composite range 10–50). Data were analyzed in SPSS using descriptive statistics, Pearson correlation, independent-samples t-tests, and one-way ANOVA, with statistical significance set at $p < 0.05$. The mean composite communication score was 37.8 (SD 6.2) out of 50, with 55% of patients rating communication as good. The mean composite satisfaction score was 38.9 (SD 6.5) out of 50, with 60% of patients classified as satisfied. Communication was rated weakest for keeping patients informed about their condition and care plan (58% positive) and strongest for maintaining privacy during communication (82% positive); satisfaction followed a parallel pattern, lowest for information given about the medical condition (55% positive) and highest for overall courtesy and respect (80% positive). Communication and satisfaction scores were strongly and positively correlated ($r = 0.65$, $p < 0.001$). Patient education level was significantly associated with satisfaction ($p = 0.021$), and length of hospital stay was significantly associated with communication scores ($p = 0.045$); age, gender, and ward were not significantly associated with either variable ($p > 0.05$). In summary, nurse-patient communication and patient satisfaction at DHQ Hospital Kohat were both moderately positive but shared a specific, recurring gap around informing patients about their condition and care plan. Given a strong correlation between communication and satisfaction, targeted communication-skills training focused on patient information-sharing is recommended to improve overall satisfaction with nursing care.

| KEYWORDS

Nurse-patient communication; patient satisfaction; nursing care; communication skills; patient experience.

| ARTICLE INFORMATION

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1. Introduction

Communication is the basis of the nurse-patient relationship and one of the most frequently studied determinants of patient-centered care. It is generally described as a two-way, purposeful exchange of information, feelings, and meaning between a nurse and a patient, encompassing both verbal elements, such as explanations and questions,

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and non-verbal elements, such as eye contact, tone of voice, and touch. Because nurses spend more continuous time at the bedside than any other member of the healthcare team, the quality of nurse-patient communication has a disproportionate influence on how patients experience, understand, and evaluate the care they receive.

Patient satisfaction is a multidimensional construct reflecting the extent to which patients perceive that their expectations of care – technical, interpersonal, and informational – have been met, and is widely used as an indicator of healthcare quality because of its association with treatment adherence, willingness to return to a facility, and reduced complaints. A substantial body of research links the two constructs directly, although the strength of the relationship varies across settings, patient populations, and the instruments used to measure each construct.

International evidence is mixed but generally favorable to the hypothesis that better communication improves satisfaction. Communication has been described as the most influential predictor of how patients rate their overall nursing care experience [Lotfi, 2019], and a literature-based review concluded that active listening, respect, and information-sharing were consistently associated with more favorable patient-reported outcomes, while workload, time pressure, and language barriers were the most frequently cited obstacles to achieving this standard [Kwame, 2021]. Evidence from Iraq linked verbal and non-verbal communication behaviors of birth-care providers directly to overall satisfaction with the birth experience [Ahmed, 2020], and an Australian survey of patients' perceptions of nurses' communication quality during acute hospitalization found that respectful treatment and demonstrated care and concern were among the highest-scoring aspects of the inpatient stay [Harrison, 2026].

Within Pakistan, findings have been broadly consistent with this international pattern, although the strength of the reported association differs considerably by setting. A district-level public hospital study in South Punjab reported an unusually strong positive correlation between perceived nurse-patient communication and patient satisfaction, with communication emerging as the dominant predictor of satisfaction after adjusting for demographic and clinical factors [Munir, 2026], and a descriptive study in a burn unit in Multan similarly emphasized that poor communication practices were closely tied to lower patient satisfaction [Naz, 2024].

Findings have not been universally consistent, however: a cross-sectional study in the emergency department of a tertiary hospital in Jeddah, Saudi Arabia, found no significant relationship between nurse-patient communication and patient satisfaction once the fast-paced, high-acuity nature of emergency care was accounted for, although patient sex and educational level did significantly predict satisfaction in that setting [Alshalawi, 2025]. This divergence suggests that the communication-satisfaction relationship may be shaped as much by clinical context as by the underlying quality of communication itself.

Public-sector hospitals in Khyber Pakhtunkhwa, including District Headquarter (DHQ) Hospital Kohat, serve large numbers of patients under considerable staffing and resource constraints – conditions that plausibly affect both the time available for nurse-patient interaction and patients' resulting satisfaction with the communication they receive. Despite the hospital's central role in secondary-level care for the district, locally generated evidence on nurse-patient communication and its relationship to patient satisfaction in this specific setting has been limited. No published study to date has specifically examined this relationship among general-ward inpatients at a secondary-care public hospital in Kohat.

This study was therefore undertaken (1) to evaluate the degree of nurse-patient communication and patient satisfaction among admitted patients at DHQ Hospital Kohat; (2) to determine the relationship between communication and satisfaction; and (3) to examine the association of both variables with patient demographic characteristics (age, gender, education, ward, and length of stay).

2. Methods

2.1 Study Design and Setting

A descriptive cross-sectional design was used to assess nurse-patient communication and patient satisfaction among admitted patients, and to examine the relationship between the two variables and their association with

demographic characteristics. The study was conducted over a six-month period in the Medical, Surgical, Gynecological/Obstetric, Orthopedic, Pediatric, ICU, and CCU departments of DHQ Hospital Kohat, Khyber Pakhtunkhwa, Pakistan, following approval of the research proposal.

2.2 Population, Sample, and Sampling Technique

The study population comprised adult patients admitted to DHQ Hospital Kohat for at least two days. A total of 150 patients were recruited using convenience sampling; the sample size was estimated using the Raosoft sample-size calculator at a 95% confidence level and a 5% margin of error, consistent with the sample-size methodology used in comparable Pakistani nurse-patient communication studies [Munir, 2026, Alshalawi, 2025]. Within each ward, patients who were available, met the inclusion criteria, and consented to participate were approached consecutively until the number equivalent to the ward's bed capacity was reached.

Inclusion criteria: Adult patients (≥18 years) admitted for at least two days; conscious, oriented, and able to communicate in Urdu, Pashto, or English; and willing to provide informed consent.

Exclusion criteria: Critically ill or unconscious patients unable to respond to the questionnaire; patients admitted for less than two days; patients under 18 years; and patients unwilling to participate or who withdrew consent.

2.3 Data Collection Instrument

Data were collected using a structured questionnaire, administered by the researchers to minimize literacy-related response bias, comprising three sections: (A) demographic information – age, gender, education level, ward/unit, and length of hospital stay; (B) a 10-item Nurse-Patient Communication Scale addressing verbal and non-verbal communication behaviors (introductions, active listening, explanation of procedures, use of simple language, eye contact, patience in answering questions, emotional support, respect for privacy, keeping the patient informed, and discharge communication); and (C) a 10-item Patient Satisfaction Scale addressing satisfaction with greeting, willingness to answer questions, information given about the medical condition, courtesy and respect, promptness of response, pain-management communication, involvement in care decisions, privacy, discharge instructions, and overall satisfaction with nursing care. Both scales used a 5-point Likert format (1 = strongly disagree to 5 = strongly agree), with all items positively worded so that agreement reflected a more favorable response.

2.4 Scoring Procedure

Item scores on each scale were summed to produce two composite scores, each ranging from 10 to 50, with higher scores indicating more favorable communication or satisfaction. Respondents scoring at or above the sample mean on a given composite were classified as reporting "good" communication or being "satisfied"; those scoring below the mean were classified as reporting "poor" communication or being "dissatisfied," consistent with the mean-split classification approach used in comparable nursing satisfaction surveys [Munir, 2026, Naz, 2024].

2.5 Data Collection Procedure

Data were collected from patients in the designated wards following approval from the institutional ethical review committee and authorization from hospital administration. Before data collection, informed consent was obtained and each patient was informed of the study's purpose in their language of choice (Urdu, Pashto, or English). To accommodate patients with low literacy, questionnaires were administered through structured interviews, with responses recorded directly onto the data-collection form.

2.6 Statistical Analysis

Data were entered and analyzed using IBM SPSS Statistics. Demographic characteristics and communication/satisfaction scores were summarized using descriptive statistics (frequency, percentage, mean, and standard deviation). The association between composite communication and satisfaction scores was examined using the Pearson correlation coefficient. Associations between demographic variables and

communication/satisfaction level were examined using independent-samples t-tests and one-way ANOVA. Statistical significance was set at $p < 0.05$.

2.7 Ethical Considerations

Ethical approval was granted by the ethical review committee of Kohat University of Science and Technology (KUST), and permission was obtained from the administration of DHQ Hospital Kohat. Informed consent was obtained from all participants before data collection. Participants confidentiality was maintained throughout data collection, analysis, and reporting; participation was voluntary, and participants were free to withdraw at any point without any effect on their care.

3. Results

A total of 150 adult patients admitted to DHQ Hospital Kohat were included in the final analysis.

3.1 Sample Characteristics

Table 1 summarizes the demographic characteristics of the sample. The largest age group was 31–45 years (35.3%), followed by 18–30 years (32.0%). The majority of respondents were female (58.0%). Regarding education, 24.0% had no formal education, 38.0% had primary/secondary education, and 38.0% had higher-secondary education or above. Patients were recruited across all clinical wards, with the largest proportions from the Medical (26.0%) and Surgical (22.0%) wards. Length of stay was 4–7 days for 42.0% of patients, 1–3 days for 40.0%, and more than 7 days for 18.0%.

Table-1: Demographic characteristics of respondents (N = 150)

Variable	Category	n	%
Age	18–30 years	48	32.0%
Age	31–45 years	53	35.3%
Age	46–60 years	34	22.7%
Age	61 & above	15	10.0%
Gender	Male	63	42.0%
Gender	Female	87	58.0%
Education	No formal education	36	24.0%
Education	Primary / Secondary	57	38.0%
Education	Higher secondary & above	57	38.0%
Length of stay	1–3 days	60	40.0%
Length of stay	4–7 days	63	42.0%
Length of stay	More than 7 days	27	18.0%
Ward/unit	Medical	39	26.0%
Ward/unit	Surgical	33	22.0%
Ward/unit	Gynae/Obstetric	27	18.0%
Ward/unit	Orthopedic	21	14.0%
Ward/unit	Pediatric	18	12.0%
Ward/unit	ICU/CCU	12	8.0%

3.2 Nurse-Patient Communication

The composite communication score ranged from 12 to 50 out of a possible 50 (mean 37.8, SD 6.2). Using the mean-split method, 83 patients (55.0%) were classified as reporting good communication and 67 patients (45.0%) as reporting poor communication with their nurses.

At the item level (Table 2), communication was rated most positively for nurses' respect of patient privacy during communication (82% positive) and for nurses introducing themselves to patients (78% positive). Communication was rated least positively for keeping patients informed about their condition and care plan (58% positive), followed by maintaining eye contact (65% positive), indicating that a substantial minority of patients did not feel adequately informed about their own care despite generally favorable ratings on interpersonal courtesy.

Table-2: Nurse-patient communication scale – item-wise percentage positive response (N = 150)

Communication statement	% positive response
Nurses introduce themselves to the patient.	78%
Nurses listen attentively to what the patient says.	71%
Nurses explain procedures before performing them.	68%
Nurses use simple, understandable language.	74%
Nurses maintain eye contact while communicating.	65%
Nurses answer the patient's questions patiently.	69%
Nurses provide emotional support when needed.	60%
Nurses respect the patient's privacy during communication.	82%
Nurses keep the patient informed of their condition/care plan.	58%
Nurses explain home-care instructions clearly at discharge.	63%

3.3 Patient Satisfaction

The composite satisfaction score ranged from 12 to 50 out of a possible 50 (mean 38.9, SD 6.5). Ninety patients (60.0%) were classified as satisfied and 60 patients (40.0%) as dissatisfied with nursing care.

Satisfaction was highest for nurses' overall courtesy and respect (80% positive) and for privacy maintained during care (79% positive). Satisfaction was lowest for the amount of information given about the patient's medical condition (55% positive), mirroring the corresponding gap identified on the communication scale, followed by involvement in care-related decisions (59% positive) (Table 3).

Table-3: Patient satisfaction scale – item-wise percentage positive response (N = 150)

Satisfaction statement	% positive response
Greeted courteously on admission.	76%
Nurses' willingness to answer questions.	70%
Information given about medical condition.	55%
Overall courtesy and respect shown by nurses.	80%
Promptness of nurses in responding to the call bell.	64%
Communication about pain management.	66%

Satisfaction statement	% positive response
Involvement in care-related decisions.	59%
Privacy maintained during care.	79%
Clarity of discharge instructions.	61%
Overall satisfaction with nursing care.	72%

3.4 Relationship between Communication and Satisfaction

A Pearson correlation analysis showed a strong, statistically significant positive correlation between composite communication and satisfaction scores ($r = 0.65$, $p < 0.001$), indicating that patients who rated nurse-patient communication more favorably also tended to report higher satisfaction with nursing care. The overall classification of both variables showed a broadly favorable balance, with satisfaction slightly more favorable than communication.

3.5 Associations with Demographic Variables

There was no statistically significant association between communication level (good/poor) and age group, gender, education, or ward/clinical unit ($p > 0.05$ for all comparisons; Table 4). Length of hospital stay was significantly associated with communication level ($p = 0.045$), with longer-staying patients reporting somewhat higher communication scores.

Table-4: Association between demographic variables and communication level (*p < 0.05)

Demographic variable	Test statistic	df	p-value
Age group	F = 1.42	3	0.239
Gender	t = 0.91	148	0.365
Education level	F = 2.31	2	0.102
Ward / clinical unit	F = 1.58	5	0.169
Length of hospital stay	F = 3.16	2	0.045*

A statistically significant association was found between satisfaction level and patient education ($p = 0.021$; Table 5): patients with higher-secondary education or above reported the highest mean satisfaction scores, followed by those with primary/secondary education, with patients with no formal education reporting the lowest mean satisfaction. No significant association was found between satisfaction level and age group, gender, ward, or length of stay ($p > 0.05$).

Table-5: Association between demographic variables and satisfaction level (*p < 0.05)

Demographic variable	Test statistic	df	p-value
Age group	F = 1.05	3	0.372
Gender	t = 1.20	148	0.232
Education level	F = 3.98	2	0.021*
Ward / clinical unit	F = 1.79	5	0.119
Length of hospital stay	F = 1.63	2	0.199

4. Discussion

In this study, 55% of patients at DHQ Hospital Kohat rated nurse-patient communication as good, and 60% reported being satisfied with nursing care overall. Both figures indicate a moderately, but not overwhelmingly, favorable picture of the nurse-patient relationship in this general-ward population, broadly comparable to findings from other Pakistani public-sector hospitals where communication and satisfaction are typically rated positively but with clear room for improvement [Munir, 2026, Naz, 2024, Rashad, 2023, Nursearcher, 2025].

The strong positive correlation observed between communication and satisfaction scores ($r = 0.65$, $p < 0.001$) is consistent with the broader Pakistani literature on this relationship. It is directionally aligned with the South Punjab study, which found an even stronger positive correlation after adjusting for demographic and clinical covariates, with communication emerging as the dominant predictor of satisfaction [Munir, 2026], and with the general pattern described in a widely cited review in which communication-related items were consistently among the strongest predictors of overall satisfaction ratings [Lotfi, 2019]. This finding is not universal, however: the Jeddah emergency department study found no significant relationship between the two constructs, a divergence the original authors attributed to the fast-paced, high-acuity nature of ED care, where caring behaviors may not translate into a felt sense of being informed even when nurses are objectively attentive [Alshalawi, 2025]. The general-ward setting of the present study, in which patients typically have longer, more sustained contact with the same nursing staff over several days, may make communication a more salient and consistently perceptible driver of satisfaction than in an emergency department, helping to explain why the present findings align more closely with general-ward Pakistani studies than with ED-based international evidence.

The most notable gap identified at the item level was the comparatively low proportion of patients who felt adequately kept informed about their condition and care plan (58% positive on the communication scale) and, correspondingly, the low proportion satisfied with the amount of information given about their medical condition (55% positive on the satisfaction scale). This mirrored pairing across the two scales strengthens confidence that information-sharing, specifically, rather than general courtesy or approachability, is the aspect of nurse-patient communication most in need of improvement in this setting. This finding parallels earlier work in which nurses were rated favorably on friendliness but less favorably on providing explanations about interventions, and is consistent with the broader barrier literature describing workload and time pressure as key obstacles to thorough information-sharing during busy shifts [Kwame, 2021].

By contrast, both communication and satisfaction were rated highly on items reflecting interpersonal courtesy and respect for privacy – the highest-rated items on their respective scales. This pattern, in which relational warmth is consistently rated more favorably than technical information-sharing, has also been observed in the Jeddah ED study, where the respect-related item received the highest mean score on the satisfaction scale even though the overall communication-satisfaction correlation was not significant in that setting, suggesting that respectful treatment and adequate information provision may be somewhat independent dimensions of the nurse-patient relationship rather than a single underlying construct.

Among demographic variables, patient education level was significantly associated with satisfaction ($p = 0.021$), with more educated patients reporting higher satisfaction – a direction of association consistent with the Jeddah ED study's finding that higher educational level significantly predicted greater satisfaction [Alshalawi, 2025]. A plausible explanation is that more educated patients are better able to ask clarifying questions and thus receive more complete information from nurses during routine interactions, or alternatively interpret and articulate ambiguous or partial information more favorably than patients with less formal education. Length of hospital stay was significantly associated with communication level ($p = 0.045$), with longer-staying patients reporting somewhat higher communication scores, plausibly reflecting the cumulative effect of repeated contact with, and growing familiarity with, ward nursing staff over time. Age, gender, and ward/clinical unit were not significantly associated with either communication or satisfaction in this sample, a pattern that diverges from the Jeddah study's finding of a significant sex effect on satisfaction [Alshalawi, 2025], but is broadly consistent with a Karachi-based study of nursing-care

satisfaction that likewise found no significant association between patient gender and satisfaction level [Karaca, 2019].

Taken together, these results indicate that the interpersonal, relational aspect of nurse-patient communication at DHQ Hospital Kohat is operating fairly well but has a specific, addressable weakness in the informational dimension – keeping patients meaningfully informed about their condition, treatment plan, and expected course of care. Because communication and satisfaction were strongly correlated in this sample, improvements targeted specifically at this information-sharing gap would be expected to yield a disproportionately large improvement in overall patient satisfaction relative to the resources required, making it a logical priority for any subsequent quality-improvement intervention at this hospital.

4.1 Limitations

Several limitations should be considered when interpreting these findings. First, causal inference and generalizability beyond DHQ Hospital Kohat are limited by the single-site, cross-sectional design. Second, convenience sampling may introduce selection bias and may not fully represent all patients treated at the hospital. Third, self-reported Likert responses are susceptible to social desirability bias, particularly as data were gathered during the actual hospital stay with interviewer assistance, which may have reduced some patients' willingness to express dissatisfaction. Fourth, communication and satisfaction were assessed using study-specific scales rather than a previously validated, standardized instrument such as the Nurse Quality of Communication with Patient Questionnaire or the La Monica-Oberst Patient Satisfaction Scale [Alshalawi, 2025]. Finally, the cross-sectional design cannot establish the direction of the association between communication and satisfaction; while communication is a plausible driver of satisfaction, the reverse pathway – satisfied patients perceiving communication more favorably – cannot be ruled out.

5. Conclusion and Recommendations

Patients at DHQ Hospital Kohat reported moderately favorable levels of both nurse-patient communication and satisfaction with nursing care: just over half rated communication as good, and three out of five expressed satisfaction with the care received. Communication and satisfaction were strongly and significantly positively correlated, confirming that communication quality is closely linked to how patients evaluate their overall nursing care experience in this setting. Both scales pointed to the same specific weakness – patients did not consistently feel adequately informed about their condition and care plan, even though nurses were generally rated favorably on courtesy, respect, and approachability. Patient education level was significantly associated with satisfaction, and length of hospital stay was significantly associated with communication, while age, gender, and ward showed no significant association with either variable.

On the basis of these findings, the following are recommended:

- Targeted in-service training for nursing staff focused specifically on keeping patients informed about their condition, treatment plan, and expected course of care, given that this was the weakest-rated dimension on both scales.
- Structured bedside communication tools (e.g., a brief daily update checklist) to standardize information-sharing with patients, particularly on wards with higher patient loads.
- Extension of this assessment to other secondary and tertiary care hospitals in Khyber Pakhtunkhwa using probability sampling and a validated, standardized communication/satisfaction instrument, to improve generalizability.
- Mixed-methods follow-up to explore why less-educated patients report lower satisfaction, to determine whether this reflects communication style, health literacy, or unmeasured clinical factors.
- A longitudinal or pre-post intervention design in future research to test whether targeted communication training measurably improves patient satisfaction scores over time.

Declarations

Ethics approval and consent to participate: This study was approved by the ethical review committee of Kohat University of Science and Technology (KUST). Written/verbal informed consent was obtained from all participants. Consent for publication: Not applicable.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Author contributions: All authors contributed to study conception and design, data collection, analysis and interpretation of results, and manuscript preparation. All authors read and approved the final manuscript.

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