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Original Article

Perceptions of Dental Students and Fresh Graduates Regarding the Role of Soft Skills in Successful Patient Management

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ABSTRACT

Background: Soft skills are essential for effective dental care because communication, empathy, active listening, teamwork, and time management influence patient cooperation, satisfaction, and treatment experience. **Objective:** This study assessed perceptions of dental students, house officers, interns, and early-career dentists regarding the role of soft skills in successful patient management. **Methods:** A cross-sectional observational study was conducted over five to six months among participants from dental colleges, institutes, and teaching hospitals in different cities of Pakistan. Eligible participants included third- and fourth-year BDS students, house officers, dental interns, and early-career dentists. Data were collected using a structured questionnaire and analyzed in SPSS version 27 using descriptive statistics. **Results:** A total of 230 completed responses were analyzed. Most participants reported partial knowledge of soft skills (60.9%), while 27.0% reported complete understanding and 11.7% were unaware. Communication was the most frequently recognized soft skill (90.0%), followed by time management (50.9%), teamwork (45.2%), and leadership (22.2%). Nearly all participants considered soft skills as important as clinical skills (98.7%), and 95.2% identified empathy as important for patient cooperation and satisfaction. Only 22.2% reported formal soft-skill education. **Conclusion:** Dental students and early-career dentists strongly recognized the clinical importance of soft skills, but formal training exposure was limited. Structured integration of soft-skill training into dental curricula may strengthen patient-centred care. **Keywords:** Soft Skills, Dental Students, Communication, Empathy, Patient Management, Dental Education, Pakistan

INTRODUCTION

Soft skills are increasingly recognized as essential competencies in dental practice because successful patient management depends not only on technical proficiency but also on the clinician's ability to communicate clearly, listen actively, demonstrate empathy, manage time effectively, and work collaboratively within the dental team. In dentistry, where patients frequently experience fear, discomfort, uncertainty, and anxiety, interpersonal competence can influence trust, cooperation, treatment acceptance, adherence, and overall satisfaction. Effective dentist–patient communication enables patients to understand their diagnosis and treatment options, participate in informed decision-making, and feel respected during clinical care, while empathy and active listening help reduce apprehension and strengthen the therapeutic relationship (1,2).

Although dental education traditionally emphasizes biomedical knowledge, procedural competence, and clinical decision-making, the non-technical dimensions of care are equally important for patient-centred practice. Soft skills include personal attributes, communication behaviours, emotional awareness, teamwork, leadership, adaptability, and professional conduct, all of which support safe and effective clinical interactions. In modern healthcare systems, these skills are not optional professional qualities but core elements of competent practice, particularly in service-oriented disciplines such as dentistry where patient experience directly affects care-seeking behaviour and treatment continuity (3,4).

Previous literature has shown that communication, empathy, and patient-centred care are associated with improved satisfaction, better clinical relationships, and stronger treatment engagement. In dental settings, these competencies are particularly relevant because dental anxiety remains a common barrier to timely care, and patients may delay or avoid treatment when they perceive dental encounters as stressful or poorly explained. Empathetic communication, reassurance, non-judgmental listening, and clear explanation of procedures can help reduce fear and improve patient cooperation, especially among children, anxious patients, and individuals undergoing invasive or prolonged dental procedures (5,6).

Despite this importance, soft skills are often underemphasized in dental curricula, particularly in settings where teaching remains primarily focused on theoretical knowledge and technical clinical training. Graduates may therefore enter practice with adequate procedural competence but limited formal preparation in communication, empathy, teamwork, feedback-seeking, and time management. In Pakistan, available evidence on soft-skill awareness among dental students, house officers, and fresh graduates remains limited, and there is a need to understand whether early-career dental professionals recognize these skills as essential components of patient management and whether they perceive formal training as necessary within routine dental education (7,8).

The present study was therefore conducted to assess the perceptions of dental students, house officers, interns, and early-career dentists regarding the role of soft skills in successful patient management. The study focused on awareness, perceived importance, commonly recognized soft skills, sources of training, and views regarding the integration of soft-skill development into dental education and clinical practice. The objective was to determine how dental students and fresh graduates perceive the contribution of communication, empathy, active listening, teamwork, leadership, and time management to patient cooperation, satisfaction, and treatment success in dental settings.

MATERIALS AND METHODS

This cross-sectional observational study was conducted among dental students, house officers, interns, and early-career dentists from dental colleges, institutes, and teaching hospitals in different cities of Pakistan. The study was carried out over approximately five to six months after approval from the Ethical Review Board of PRIDE Course of Research and Learning Institute under reference number PRIDE/ERB/2025/028. The design was selected to capture participants' existing awareness, perceptions, training exposure, and self-reported use of soft skills in patient management at a single point in time.

Eligible participants included third-year and fourth-year BDS students, house officers, dental interns, and early-career dentists who were involved in dental education or clinical dental practice. First-year and second-year BDS students, postgraduate trainees, non-dental students, individuals not involved in clinical settings, and respondents outside the target dental population were excluded. Participants were approached through personal contacts, institutional networks, college groups, and social media platforms to allow recruitment from multiple public and private dental institutions across Pakistan. Participation was voluntary, and informed consent was obtained before questionnaire completion.

Data were collected using a structured questionnaire developed after reviewing literature related to communication, empathy, patient-centred care, and soft skills in dental education. The questionnaire was organized into sections covering consent and study information, demographic characteristics

including age, gender, city, academic level or professional role, awareness and perceptions of soft skills, perceived importance of specific soft skills in patient care, previous exposure to soft-skill training, and suggestions regarding incorporation of soft skills into the dental curriculum. The questionnaire was pilot tested among a small group from the target population to assess clarity, readability, and ease of response, after which necessary refinements were made before wider distribution.

The main study variables included participant demographic characteristics, academic or professional status, level of awareness regarding soft skills, perceived importance of soft skills compared with clinical skills, identification of key soft skills such as communication, empathy, active listening, teamwork, leadership, and time management, reported source of soft-skill learning, satisfaction with personal soft-skill ability, and willingness to seek patient feedback. Awareness was assessed using response categories reflecting lack of awareness, partial knowledge, and complete understanding. Training exposure was categorized according to whether participants had received formal academic training, learned through clinical rotations, or developed these skills through personal experience.

The required sample size was estimated using OpenEpi at a 95% confidence level and 5% margin of error, yielding an intended sample size of approximately 380 participants. Because recruitment was conducted across geographically dispersed institutions and depended on voluntary participation, a non-probability convenience sampling technique was used. A total of 230 completed responses were received and included in the final analysis. The difference between the calculated and achieved sample size was considered during interpretation, as the smaller final sample may reduce statistical precision and limit generalizability.

Data were entered and analyzed using SPSS version 27. Descriptive statistics were used to summarize categorical variables as frequencies and percentages, while continuous variables such as age were summarized using appropriate measures of central tendency and dispersion. Group comparisons were planned using chi-square tests for categorical variables and one-way analysis of variance for continuous variables when assumptions were met. A p-value of less than 0.05 was considered statistically significant. Missing or incomplete responses were reviewed before analysis, and only completed questionnaire responses relevant to the study variables were included in the final dataset.

To reduce reporting bias and improve data integrity, participants were informed about the academic purpose of the study, confidentiality of responses, and voluntary nature of participation. The questionnaire was structured to use clear and direct response options, and pilot testing was performed to improve comprehension before final data collection. Data were handled in aggregated form, and no personally identifiable information was reported in the analysis or results. Ethical approval, informed consent, anonymized data handling, and standardized data entry procedures were used to support reproducibility and transparency.

RESULTS

A total of 230 completed responses were analyzed. Participants were 19–32 years old, and 161 (70.0%) were female. The sample included third-year BDS students, fourth-year BDS students, house officers, and dental interns from Karachi, Hyderabad, Islamabad, and Peshawar.

Table 1. Demographic and Academic Characteristics of Participants (n = 230)

Variable	Category	n	%
Gender	Female	161	70.0
	Male/other/not specified	69	30.0
Academic/professional status	Third-year BDS	84	36.5
	Fourth-year BDS	27	11.7
	House officer	96	41.7
	Dental intern	23	10.0

The study population was predominantly female, with 161 of 230 participants representing 70.0% of the sample. House officers formed the largest academic/professional group, accounting for 96 participants (41.7%), followed by third-year BDS students (n = 84, 36.5%), fourth-year BDS students (n = 27, 11.7%), and dental interns (n = 23, 10.0%).

Table 2. Awareness and Recognition of Soft Skills Among Participants (n = 230)

Variable	Category	n	%
Awareness of soft skills	Some/partial knowledge	140	60.9
	Complete understanding	62	27.0
	Unaware	27	11.7
Recognized soft skill	Communication	207	90.0
	Time management	117	50.9
	Teamwork	104	45.2
	Leadership	51	22.2

Most participants reported at least some awareness of soft skills, with 140 participants (60.9%) reporting partial knowledge and 62 (27.0%) reporting complete understanding, while 27 (11.7%) were unaware. Communication was the most frequently recognized soft skill, reported by 207 participants (90.0%), followed by time management (n = 117, 50.9%), teamwork (n = 104, 45.2%), and leadership (n = 51, 22.2%).

Table 3. Perceived Role, Training Exposure, and Self-Reported Application of Soft Skills (n = 230)

Variable	n	%
Considered soft skills as important as clinical skills	227	98.7
Considered empathy important for patient cooperation/satisfaction	219	95.2
Considered active listening important	105	45.7
Received formal soft-skill education	51	22.2
Learned soft skills through personal experience	135	58.7
Learned soft skills during clinical rotations	116	50.4
Satisfied with own soft skills	105	45.7
Actively invited patient feedback/criticism	114	49.6

Nearly all participants considered soft skills as important as clinical competence, with 227 of 230 respondents (98.7%) endorsing this view. Empathy was also strongly valued, with 219 participants (95.2%) identifying it as important for patient cooperation and satisfaction. However, only 51 participants (22.2%) reported formal soft-skill education, whereas 135 (58.7%) learned these skills through personal experience and 116 (50.4%) through clinical rotations. Less than half of participants were satisfied with their own soft skills (n = 105, 45.7%), and 114 (49.6%) reported actively seeking patient feedback. No inferential p-values or effect estimates are reported because the manuscript provides only aggregated descriptive data and does not provide cross-tabulated group-level comparisons. Therefore, statistical testing should not be added unless the raw dataset is reanalyzed.

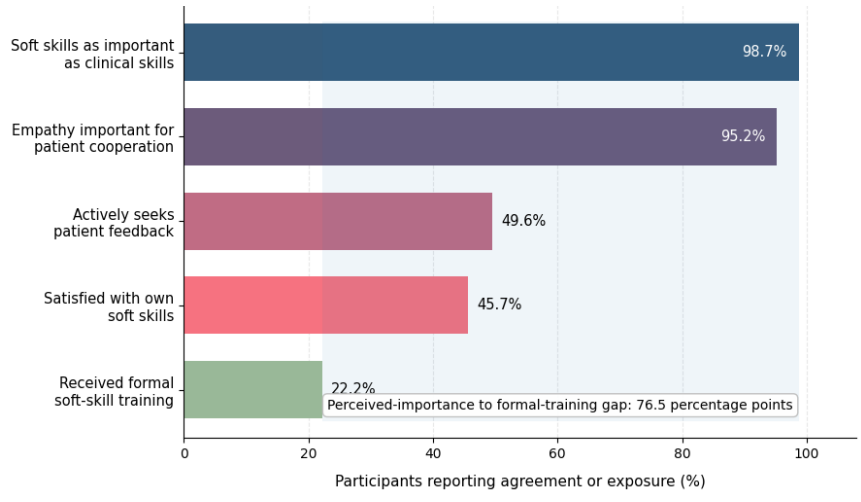

Figure 1 Perception–Training Gradient in Dental Soft-Skill Preparedness Among Dental Students and Early-Career Dentists

The figure illustrates a pronounced disparity between the high perceived importance of soft skills—particularly equivalence to clinical skills (98.7%) and the role of empathy (95.2%)—and the relatively low exposure to formal training (22.2%). Moderate levels of self-reported competence (45.7%) and feedback-seeking behavior (49.6%) further highlight a substantial 76.5 percentage-point gap, indicating unmet educational needs in structured soft-skill development.

DISCUSSION

The present study showed that dental students, house officers, interns, and early-career dentists strongly recognized the clinical relevance of soft skills in patient management, with 98.7% considering soft skills as important as clinical skills and 95.2% identifying empathy as important for patient cooperation and satisfaction. Communication emerged as the most frequently recognized soft skill, reported by 90.0% of participants, followed by time management, teamwork, and leadership. These findings support previous evidence that effective dentist–patient communication, empathy, and patient-centred interaction are essential components of quality dental care because they improve patient understanding, trust, satisfaction, and cooperation during treatment (9,10).

A major finding of this study was the marked gap between perceived importance and formal training exposure. Although almost all participants acknowledged the importance of soft skills, only 22.2% reported receiving formal soft-skill education, while most developed these abilities through personal experience or clinical rotations. This gap suggests that soft skills may be valued in practice but insufficiently structured within dental training. Similar concerns have been raised in dental education literature, where communication and interpersonal skills are often recognized as essential but are not always assessed with the same rigor as technical and procedural competencies (11,12).

The high perceived importance of empathy is clinically meaningful because dental patients commonly experience anxiety, fear, and discomfort, which may affect attendance, cooperation, and treatment completion. Empathetic communication, active listening, reassurance, and non-judgmental explanation can help reduce dental anxiety and improve the patient's experience of care. In the present study, 95.2% of participants recognized the importance of empathy, but only 45.7% identified active listening as important, suggesting that students and early-career dentists may understand empathy as a desirable professional attribute but may need more structured training in the behavioural skills through which empathy is expressed during clinical encounters (13,14).

The finding that less than half of the participants were satisfied with their own soft skills further supports the need for formal educational intervention. Only 45.7% reported satisfaction with their soft-skill ability, and 49.6% reported actively inviting patient feedback. This indicates that many participants may recognize their own developmental needs but lack a standardized pathway for improvement. Incorporating structured communication-skills teaching, simulated patient encounters, reflective feedback, role-play, observed clinical encounters, and objective structured clinical examination stations may help translate awareness into measurable competence (15,16).

The study also highlights the importance of teamwork and time management in dental practice. While communication was widely recognized, teamwork and leadership were reported less frequently, indicating that participants may primarily associate soft skills with direct dentist–patient interaction rather than broader clinical workflow, interprofessional collaboration, and practice management. This is important because dental care often depends on coordination among dentists, assistants, hygienists, administrative staff, and patients. Poor teamwork or inefficient time management can affect patient waiting time, procedural flow, clinical safety, and overall satisfaction (17,18).

These findings have practical implications for dental education in Pakistan. Soft-skill training should not be treated as an informal or incidental component of clinical exposure; instead, it should be integrated longitudinally across the curriculum. Early academic years may focus on communication

principles, empathy, professionalism, and patient-centred care, while clinical years may include supervised patient interaction, feedback from faculty, peer evaluation, and standardized patient-based assessments. Such integration would allow students to develop interpersonal competence progressively, rather than relying mainly on personal experience after entering clinical settings (19,20).

This study has several limitations. First, the intended sample size was 380, but 230 completed responses were analyzed, which may reduce statistical precision and limit the generalizability of the findings. Second, the use of non-probability convenience sampling may introduce selection bias because participants who were more interested in soft skills may have been more likely to respond. Third, the cross-sectional design measured perceptions at one point in time and cannot determine whether awareness translates into actual clinical behaviour. Fourth, the study relied on self-reported responses rather than objective assessment through observed patient encounters, standardized patients, faculty ratings, or OSCE-based evaluation. Future studies should use multicentre probability-based sampling, larger sample sizes, validated instruments, and objective performance-based assessment to evaluate whether soft-skill training improves patient satisfaction, treatment adherence, and clinical outcomes (21–23).

CONCLUSION

This cross-sectional study found that dental students, house officers, interns, and early-career dentists strongly perceived soft skills as essential for successful patient management, particularly communication and empathy; however, formal training exposure was limited despite high perceived clinical relevance. The large gap between recognition of soft skills and structured educational preparation indicates the need for formal integration of communication, empathy, active listening, teamwork, time management, and feedback-based learning into dental curricula. Strengthening these competencies through structured teaching and objective assessment may improve patient-centred dental care, enhance patient cooperation and satisfaction, and better prepare future dentists for clinical practice.

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