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Review Article

Optimizing Dental Care Outcomes Through Effective Dentist–Patient Communication

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ABSTRACT

Communication between dentists and patients is fundamental to delivering high-quality dental care. This review examines the significance, challenges, strategies, and educational approaches related to dentist–patient communication. The World Dental Federation (FDI) highlights effective communication as a key element of excellence in oral healthcare. Strong dentist–patient interactions enable the accurate transmission of critical medical information, enhance dentists' efficiency and confidence, reduce occupational stress, and lower the likelihood of complaints or legal action. Additionally, it mitigates dental anxiety, fosters trust, addresses patient needs and preferences, improves adherence to treatment, and ultimately increases patient satisfaction. Despite these benefits, inadequate communication remains a common challenge in dentistry worldwide. Factors such as limited consultation time, difficulty building rapport, patients' oral-health literacy, dentists' communication skills, personal perceptions, and language differences often impede effective interaction. Adopting a patient-centered approach is essential, requiring both verbal and non-verbal communication skills to overcome these barriers. This approach emphasizes understanding patients' conditions, engaging in shared decision-making, and respecting the patient's pace. Clear, concise, and jargon-free language should be used, alongside appropriate body language and gestures to convey a positive attitude. Communication training for dental students should follow a structured curriculum incorporating lectures, role-playing, patient interviews, and continuous evaluation. Core components of such training include motivational interviewing, open-ended questioning, affirmations, reflective listening, and summarizing to enhance patient engagement and compliance with treatment.

Keywords: Medical communication, Dentist–patient communication, Dentist–patient interaction, Dental care

Introduction

The World Dental Federation (FDI) highlights dentist–patient communication as a cornerstone of its Vision 2030 initiative, *Delivering optimal oral health for all* [1]. Central to this vision is patient-centered care, which prioritizes understanding and respecting individual patient preferences and requirements. Effective communication lies at the heart of this care model. Within healthcare, the key aspects of clinician–patient interaction are widely recognized as: (1) developing a trusting relationship, (2) collecting relevant patient information, (3) clearly conveying information, (4) engaging patients in shared decision-making, (5) responding to emotional concerns, and (6) supporting adherence to treatment and disease management [2]. FDI defines quality dental care as a coordinated effort among dental professionals, patients, and other stakeholders to establish and uphold standards aimed at achieving the best possible oral health outcomes. Communication is essential in this process, ensuring that patients comprehend their conditions and treatment options, receive proper care, and experience reassurance and support throughout treatment [3]. This review explores the significance, obstacles, practical approaches, and educational methods related to dentist–patient communication. Effective communication requires careful attention to both verbal and non-verbal cues, which improves diagnostic precision, encourages ethical clinical decisions,

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and enhances patient outcomes. Additionally, it promotes the use of dental services and increases overall patient satisfaction [4]. The effectiveness of dental care depends on the dentist's capacity to recognize patients as unique individuals, understand their expectations, and facilitate informed decision-making that prioritizes their welfare. Conversely, previous studies have demonstrated a strong correlation between poor communication and increased malpractice claims [5]. Strengthening dentist–patient communication can therefore play a pivotal role in reducing such negative outcomes.

Literature search

To gather relevant studies, a preliminary review was carried out using terms such as 'dentist–patient communication,' 'medical communication,' and 'dentist–patient interaction AND patient care' across databases including PubMed, Web of Science, Scopus, and Google Scholar. The search strategy was adjusted and refined in accordance with the main research objectives and key focus areas. In total, 72 articles published in English that addressed aspects of dentist–patient communication were selected for inclusion in this overview.

Benefits of dentist–patient communication

Strong communication between dentists and patients offers multiple advantages for both sides. It ensures that critical oral health information is delivered clearly and accurately, contributing to higher standards of dental care. Beyond improving care quality, it enhances dentists' workflow efficiency, strengthens their confidence, alleviates work-related stress, and reduces the likelihood of complaints or legal disputes **(Figure 1)**.

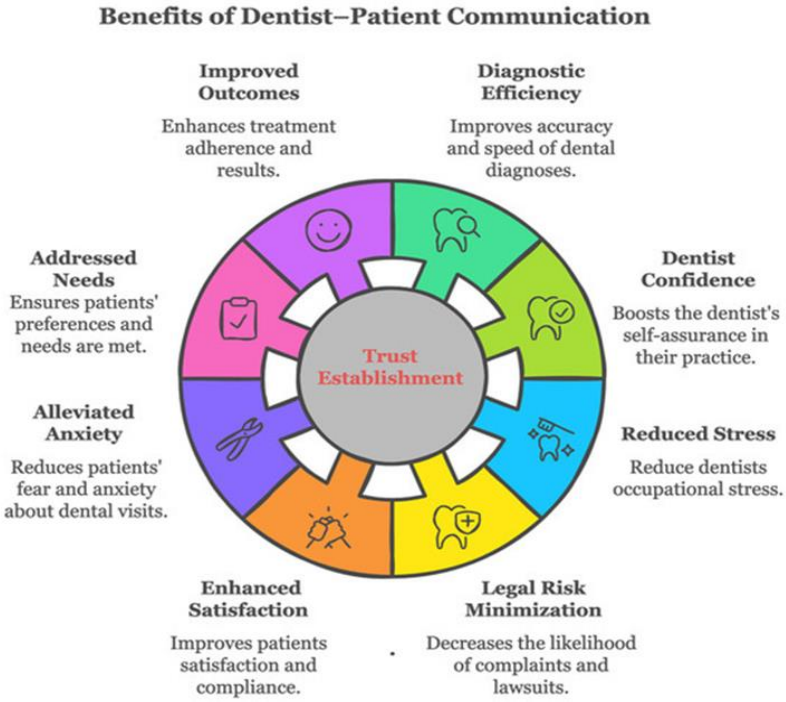

Figure 1. Key Advantages of Dentist–Patient Communication in Dental Practice

Effective interaction between dentists and patients contributes to multiple positive outcomes. It reduces dental-related anxiety, strengthens trust, addresses patient preferences, and encourages adherence to recommended treatments. By providing patients with clear, understandable information, communication empowers them to make informed choices about their care, which enhances satisfaction. Notably, these advantages are interdependent rather than isolated, collectively improving the quality of dental care.

Improving diagnostic efficiency and accuracy

Strong communication enhances a dentist's ability to diagnose accurately and efficiently. Digital tools, such as tele-dentistry platforms, allow professionals to assess patients' comprehension and acceptance of treatment advice remotely. This approach provides timely insights into patients' concerns, health status, and personal preferences. Research on the use of intraoral scans in tele-dentistry has shown that remote evaluations are effective for detecting dental conditions and facilitating quick triage [6]. Additionally, Aboalshamat *et al*. found that tele-

dentistry accurately records patients' chief complaints, medical history, and the status of missing or restored teeth [7]. Such approaches foster mutual understanding of treatment expectations and goals, minimizing misunderstandings and aligning dental care with patients' needs.

Enhancing dentists' confidence

Proficient communication skills also boost dentists' confidence in managing patients' emotions and expectations. For instance, studies on delivering unfavorable news in oral cancer care indicate that clinicians with specialized communication training handle such situations with greater empathy and assurance [8]. Moreover, clear communication supports precise and personalized treatment planning. By understanding patients' concerns and objectives, dentists can recommend interventions that better suit individual needs, improving outcomes and patient satisfaction [9]. Consistently positive treatment results reinforce clinicians' professional confidence, motivating proactive patient engagement and encouraging the recommendation of optimal treatment strategies. Overall, dentists who achieve successful outcomes through effective communication demonstrate higher self-assurance and are better equipped to provide high-quality, patient-centered care.

Reducing occupational stress in dentists

Proficient communication helps dentists manage occupational stress by alleviating workplace tension and anxiety [9]. Given the demanding schedules typical in dental practice, professionals often face stress while performing technically complex procedures and interacting with patients under strict time constraints [10]. Research has shown that targeted communication training can be instrumental in lowering burnout rates among healthcare providers [11, 12]. Effective interactions are particularly important when addressing patients' emotions or delivering sensitive information, such as stigmatized conditions, where careful communication is required [13]. Additionally, studies have identified communication challenges as a significant source of stress for clinicians and recommend ongoing educational programs to enhance patient and family engagement skills, which can help mitigate work-related stress [14].

Reducing the risk of complaints and litigation

Establishing positive relationships and maintaining clear communication with patients can protect dentists from complaints and legal action [15]. Strong communication is also essential for obtaining informed consent and addressing ethical concerns during treatment. Evidence indicates that malpractice claims are rarely linked to clinical skill alone [16]; rather, they are often associated with poor communication or misunderstandings between dentist and patient [5, 17]. Research further emphasizes that dentists' interpersonal behaviors, including their attitude and style of interaction, significantly influence the likelihood of legal disputes [18].

Building trust between dentists and patients

Effective communication fosters trust and strengthens the dentist–patient relationship [19]. Patients who receive clear explanations and relevant guidance are more likely to trust their dentist [20]. Trust is a cornerstone of dental care, as it encourages patients to share personal information, concerns, and feelings openly. Studies on patient trust in healthcare providers have shown that trust is fundamental to establishing strong, personal relationships with dentists [21]. Patients with higher levels of trust are more likely to maintain regular dental visits and prioritize oral health [22]. Concurrently, dentists rely on accurate patient information to make correct diagnoses and develop suitable treatment plans. Skilled communication enables dentists to ask precise questions, listen attentively, and fully understand the patient's condition, concerns, and needs.

Reducing dental anxiety and fear

Clear and empathetic communication can significantly reduce dental anxiety. The "vicious cycle" of dental fear often begins with avoidance of dental visits, leading to worsening oral health, feelings of shame or embarrassment, and further delays in treatment [23]. Studies indicate that effective communication by dental professionals can help patients overcome these fears [20, 24, 25]. By facilitating understanding and conveying treatment information clearly, dentists can help patients feel more confident and informed. Research has shown that patients who receive detailed explanations about procedures and maintain regular, informative interactions with their dentist experience lower levels of anxiety [5, 20].

Recognizing and responding to patients' needs

When dentists communicate effectively, they can better acknowledge and respect the cultural, social, and personal backgrounds of their patients. This enables the delivery of care that is truly patient-centered and tailored to individual expectations. Strong communication also allows dentists to identify patient concerns and provide reassurance regarding any changes or interventions in treatment [26].

Enhancing adherence and treatment success

Patients' willingness to follow treatment recommendations depends on several factors, with the quality of dentist–patient communication playing a major role. Clear, empathetic discussions improve adherence to prescribed dental interventions [27, 28], which ultimately leads to better clinical outcomes. Dentists who present complex dental information in accessible language help patients understand their condition, ask questions, and participate actively in their care [27]. When patients grasp the rationale behind a diagnosis and treatment plan, they are more likely to comply with recommendations [29]. Effective communication also ensures patients know what to expect, how to manage their oral health, and fosters a sense of partnership in care. Many positive outcomes, such as greater patient satisfaction [30], stronger dentist–patient relationships, and reduced dental anxiety [31], are closely linked to higher adherence.

Promoting patient satisfaction

Research consistently links effective communication with higher patient satisfaction [5, 32]. Patients who feel understood, involved in decision-making, and respected report better experiences in dental care. The amount of time dentists spend explaining procedures and giving guidance is an important measure of effective communication. Studies have shown that longer, more thorough discussions are associated with increased patient satisfaction [33]. Additionally, patients' perceptions of dentists' empathy, attitude, and interpersonal skills strongly influence satisfaction and compliance [34]. Dentists who communicate clearly and compassionately are more likely to achieve positive patient evaluations.

Barriers to effective dentist–patient communication

All dental practitioners encounter challenges in communication to varying degrees. Obstacles include limited appointment times, difficulties establishing rapport, patients' low health literacy, gaps in dentists' communication abilities, personal biases, language differences, and the physical design of clinical settings. These factors can interfere with patient understanding, trust, and engagement. **Figure 2** illustrates the main barriers affecting dentist–patient communication in clinical practice.

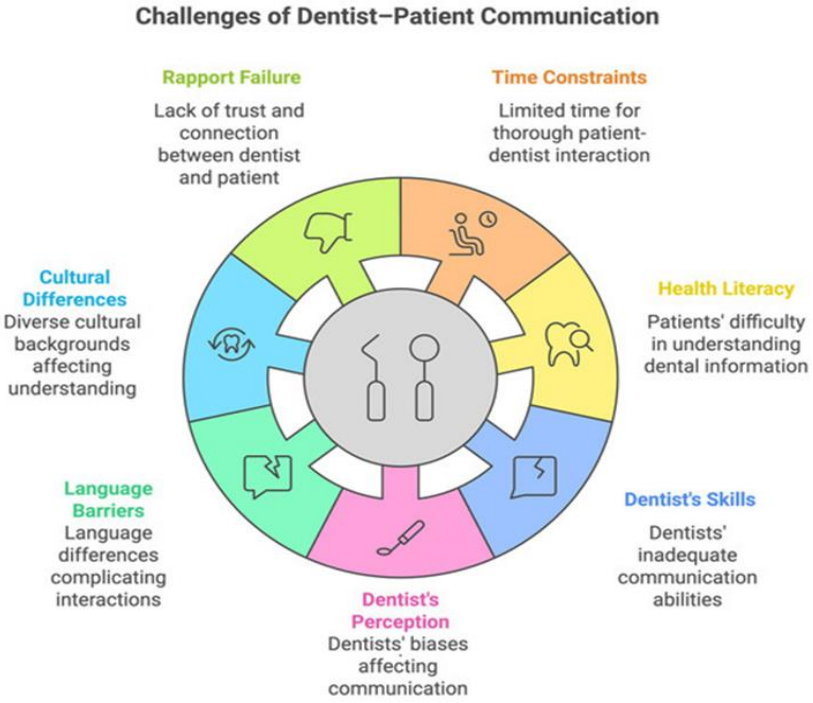

Figure 2. Key Barriers to Dentist–Patient Communication in Dental Care

Time limitations

The duration of dental appointments varies, but in general, there is often insufficient time for meaningful interactions between dentists and patients [35, 36]. Dentists are required to perform technically demanding procedures within restricted timeframes, which can make it difficult to prioritize communication. Patients may feel hesitant to raise important concerns if they perceive that the consultation is rushed or that there is inadequate time for discussion. A study conducted in China found that heavy workloads often lead clinicians to shorten patient interactions [37], which can compromise otherwise friendly and comprehensive communication.

Patients' limited health literacy

Research has consistently highlighted a positive relationship between oral health literacy and overall oral health status [38, 39]. Patients with low levels of oral health literacy often struggle to process and apply health information [40, 41] and may be unfamiliar with common dental concepts, making communication with dental professionals more challenging [42]. Some studies [43] suggest that patients with limited literacy may hide their lack of understanding due to embarrassment, asking fewer questions and engaging less actively in discussions. This can reduce the effectiveness of dentist–patient interactions and hinder the delivery of patient-centered care.

Dentists' communication skills

Communication gaps between dentists and patients have been documented in prior research [44], often stemming from clinicians' limited ability to convey information effectively. For example, studies show that patients often remember less than half of the oral health guidance provided by their dentists [45], highlighting a significant communication deficit. One contributing factor is the frequent use of technical dental terminology, which can be difficult for patients to comprehend [46, 47]. Overloading patients with information can further impair understanding, retention, and adherence to treatment recommendations. Kessels [48] notes that presenting excessive health information may negatively impact patients' memory and their ability to follow care instructions.

Dentists' perceptions

Research indicates that dentists sometimes withhold information if they believe patients will not understand complex content, appear indifferent, or assume that the dentist should make care decisions on their behalf [49-51]. Additionally, dentists may make assumptions about patients' preferences instead of actively exploring their individual needs [49]. Such perceptions can create mismatched expectations at the start of consultations and may interfere with achieving fully patient-centered care.

Language barriers

As societies become increasingly multicultural, communication challenges due to language differences have emerged as a major barrier to accessing dental care [52]. Such barriers can extend the time needed for patient interactions and reduce the perceived warmth and empathy from dentists [53]. Patients from linguistic minority groups may feel anxious or intimidated, sometimes avoiding dental visits altogether. Misinterpretations caused by language differences can also lead to conflicts or confusion during treatment. Patients with hearing or speech impairments face additional obstacles, often relying on lip reading, sign language, or alternative communication methods. However, many dental professionals lack training in these approaches, which can hinder effective communication [54, 55].

Cultural differences

Differences in cultural background between dentists and patients can complicate communication. Diverse cultural norms, religious beliefs, and social practices influence verbal and non-verbal interactions [52]. Gestures, expressions, and body language that are acceptable in one culture may be misinterpreted or considered offensive in another. Developing cultural awareness and competence is therefore essential for dental professionals to interact effectively with patients from varied backgrounds.

Challenges in establishing rapport

Creating a trusting relationship is crucial for effective dental care, yet several factors can interfere. Language and cultural differences [56–58], as well as limited consultation time [58], often hinder rapport building. Additionally, dentists' implicit biases related to race, gender, or other personal characteristics may affect interactions. Patients may approach visits with distrust due to past negative experiences, and emotional distress can further complicate

engagement. Dentists must demonstrate empathy, patience, and active listening to establish trust and foster meaningful connections with patients [59].

Strategies for effective dentist–patient communication

Optimizing communication is fundamental for quality dental care. Adopting a patient-centered approach forms the cornerstone of effective interaction [60]. This involves understanding the patient's perspective, involving them in treatment decisions, and respecting their preferences and pace [61]. Beyond diagnosing oral conditions, patient-centered care encourages education on preventive practices and oral health promotion. Patients are invited to actively participate, share experiences, and co-develop treatment plans. Dentists provide clear guidance, information, and decision support to build a strong therapeutic relationship [62]. Key techniques include using straightforward language, maintaining open body posture, employing gestures and facial cues, and establishing eye contact [60]. Demonstrating empathy, encouraging questions, using visual aids, and allowing sufficient time for patient input are critical. In addition, modern digital tools such as messaging apps can enhance communication, providing convenient, cost-effective alternatives to in-person consultations.

Training dental students in communication skills

Developing strong clinical communication and behavioral competencies in dental students is widely regarded as critical due to its direct influence on patient care outcomes. Embedding communication training into dental education is considered essential and is valued by educators, students, and patients alike [5, 63]. While many universities offer general communication workshops, these are often tailored to medical students, and when dental students participate, the assessment of learning outcomes is frequently absent [64, 65]. Historically, dental programs included only brief lectures on communication, with limited opportunities for practical application. Significant curriculum reforms introduced about ten years ago have begun to address this gap [66]. Carey *et al*. [66] noted that early training was typically a one-time event, preventing students from gradually enhancing their communication abilities. Because the knowledge acquired in the early academic years forms the foundation for subsequent clinical experiences, it is recommended to integrate ongoing communication training throughout the curriculum to enable systematic evaluation of students' skill development [64, 67].

A comprehensive communication training program should combine structured theoretical instruction, interactive role-playing, simulated patient interviews, and continuous feedback from peers, instructors, and self-assessment. Training should cover multiple dimensions of communication, including:

- *Core skills:* empathy, active listening, and patient-centered care.
- *Contextual skills:* information sharing, motivational interviewing, and tailored approaches for specific clinical scenarios.
- *Temporal skills:* effective management of consultation initiation, progression, and closure.
- *Advanced skills:* cultural awareness, delivering difficult news, and adapting to emerging patient needs [67].

Role-playing exercises are particularly valuable, allowing students to practice and distinguish effective from ineffective communication. Evidence indicates that students engage positively with these exercises, showing a preference for interactive, hands-on learning approaches [68, 69].

Another key strategy is motivational interviewing, which helps patients actively engage with their treatment plans and fosters adherence [70]. Unlike traditional advice-giving, motivational interviewing encourages collaborative dialogue, supporting patients in exploring behavior change and promoting shared decision-making [69]. Its core components include [71, 72]:

- *Open-ended questions:* Encourage patients to provide detailed responses and reflect on their experiences by using prompts such as "how," "what," or "describe."
- *Affirmations:* Positive feedback, both verbal and non-verbal, reinforces patients' strengths and acknowledges progress, encouraging beneficial behavior changes.
- *Reflective listening:* Demonstrates understanding and validation of the patient's statements, fostering empathy and deeper discussion of concerns and potential treatment strategies.

Summarizing patient interactions

Summaries are a key tool in reinforcing information exchanged during consultations. They involve the dentist actively interpreting the patient's concerns, behaviors, and perspectives, then checking with the patient to confirm

that their situation has been accurately understood. This step helps consolidate the dialogue and ensures mutual clarity, strengthening the patient-provider relationship.

Embedding communication training into the dental curriculum, especially through a longitudinal and integrated approach, has proven highly effective in enhancing students' communication capabilities. This method not only provides the technical skills necessary for effective interaction but also cultivates a mindset centered on patient needs and preferences. **Table 1** illustrates the primary elements of communication training in dental education.

Table 1. Major obstacles in dentist–patient communication in clinical settings.

Component	Sub-Component	Explanation
Formal Instruction		Organized presentations and academic modules crafted to impart foundational knowledge of communication techniques.
Engaging Learning	**Simulated Role-Play**	Hands-on exercises where learners rehearse communication abilities in controlled, mock situations.
	Real-World Patient Dialogues	Practical experience gained by conducting interviews with actual patients in a healthcare environment.
Evaluation Approaches	**Ongoing Evaluations**	Continuous assessments performed by learners, their peers, and faculty members.
Skill Types	**Universal Communication Abilities**	Fundamental communication techniques suitable for diverse situations.
	Scenario-Specific Communication Abilities	Tailored techniques for particular contexts, such as motivational dialogue and knowledge exchange.
	Phase-Specific Communication Abilities	Techniques relevant to various points of patient interaction, including starting and concluding sessions.
	Advanced Communication Abilities	Sophisticated skills, such as cultural awareness and delivering difficult news.
Educational Approach	**Continuous Integrated Learning Framework**	Ongoing, holistic training in communication skills woven throughout the dental education program to foster progressive skill enhancement.

Conclusion

The foundation of high-quality dental care lies in effective communication between dentists and patients. Dental practitioners often face obstacles such as constrained appointment times, challenges in building trust, and language or cultural differences, which can hinder effective interactions. Overcoming these challenges requires adopting a patient-focused approach, alongside deliberate development of verbal and non-verbal communication skills. Clear, accessible language, supportive body language, and structured communication training are essential tools. Implementing these strategies enhances patient engagement, strengthens trust, and improves adherence to treatment, ultimately contributing to superior dental care outcomes.

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References

1. Glick M, Williams DM. FDI Vision 2030: Delivering optimal oral health for all. Int Dent J. 2021;71(1):3.
2. King A, Hoppe RB. "Best practice" for patient-centered communication: a narrative review. J Grad Med Educ. 2013;5:385–93.
3. Waylen A. The importance of communication in dentistry. Dent Update. 2017;44(8):774–80.
4. Woelber JP, Deimling D, Langenbach D, Ratka-Krüger P. The importance of teaching communication in dental education: a survey amongst dentists, students and patients. Eur J Dent Educ. 2012;16(1):e200-4.

5. Hamasaki T, Hagihara A. Dentists' legal liability and duty of explanation in dental malpractice litigation in Japan. Int Dent J. 2021;71(4):300–8.
6. Steinmeier S, Wiedemeier D, Hämmerle CH, Mühlemann S. Accuracy of remote diagnoses using intraoral scans captured in approximate true color: a pilot and validation study in teledentistry. BMC Oral Health. 2020;20(1):266.
7. Aboalshamat KT, Althagafi TK, Alsaeedi SA, Alhumaidi SN, Alemam AA. Accuracy and perceptions of teledentistry in KSA during the COVID-19 pandemic: a single-centre randomised controlled trial. J Taibah Univ Med Sci. 2022;17(3):506–15.
8. Desa SM, Doss JG, Kadir K, Ch'ng LL, Kok TC, Jelon MA, et al. An insight into clinicians' practices in breaking bad news of oral cancer diagnosis. Int J Oral Maxillofac Surg. 2024;53(9):717–23.
9. Jones LM, Huggins TJ. Empathy in the dentist-patient relationship: review and application. N Z Dent J. 2014;110(3):98–104.
10. Freeman R, Humphris G. Communicating in dental practice: stress-free dentistry and improved patient care. Vol. 30. London: Quintessence Publishing; 2019.
11. Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. Mayo Clin Proc. 2017;92(1):129–46.
12. Lipkin M Jr. Patient education and counseling in the context of modern patient-physician-family communication. Patient Educ Couns. 1996;27(1):5–11.
13. Wert K, Donaldson AM, Dinh TA, Montero DP, Parry R, Renew JR, et al. Communication training helps to reduce burnout during COVID-19 pandemic. Health Serv Res Manag Epidemiol. 2023;10:23333928221148079.
14. Alruwaili AN, Alruwaili M, Ramadan OME, Elsharkawy NB, Abdelaziz EM, Ali SI, et al. Compassion fatigue in palliative care: exploring its comprehensive impact on geriatric nursing well-being and care quality in end-of-life. Geriatr Nurs. 2024;58:274–81.
15. Hassan AA. Defensive dentistry and the young dentist–this isn't what we signed up for. Br Dent J. 2017;223(10):757–8.
16. Lopez-Nicolas M, Falcón M, Perez-Carceles MD, Osuna E, Luna A. Informed consent in dental malpractice claims: a retrospective study. Int Dent J. 2007;57(3):168–72.
17. Pour H, Subramani K, Stevens R, Sinha P. An overview of orthodontic malpractice liability based on a survey and case assessment review. J Clin Exp Dent. 2022;14(9):e694.
18. Thomas LA, Tibble H, Too LS, Hopcraft MS, Bismark MM. Complaints about dental practitioners: an analysis of six years of complaints in Australia. Aust Dent J. 2018;63(3):285–93.
19. Yuan S, Freeman R, Hill K, Newton T, Humphris G. Communication, trust and dental anxiety: a person-centred approach for dental attendance behaviours. Dent J. 2020;8(4):118.
20. Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. Clin Cosmet Investig Dent. 2016;8:35–50.
21. Thom DH, Hall MA, Pawlson LG. Measuring patients' trust in physicians when assessing quality of care. Health Aff. 2004;23(4):124–32.
22. Tiwari T, Maliq NN, Rai N, Holtzmann J, Yates L, Diep V, et al. Evaluating trust in the patient–dentist relationship: a mixed-method study. JDR Clin Trans Res. 2023;8(3):287–98.
23. Carlsson V, Hakeberg M, Wide Boman U. Associations between dental anxiety, sense of coherence, oral health-related quality of life and health behaviour: a national Swedish cross-sectional survey. BMC Oral Health. 2015;15(1):100.
24. Shahid M, Freeman R. What is the function of psychosocial factors in predicting length of time since last dental visit? A secondary data analysis. Int Dent J. 2019;69(5):369–75.
25. Zhao Y, Shi X, Liu J, Huo R, Xia K, Wang Y, et al. Patients' perceptions matter: risk communication and psychosocial factors in orthodontics. Am J Orthod Dentofacial Orthop. 2024;166(4):393–403.
26. Australian Commission on Safety and Quality in Health Care. Available from: http://www.safetyandquality.gov.au. Accessed 2023 Jul 5.
27. Hussein D, Jima AK, Geleta LA, Gashaw K, Girma D, Ibrahim SM, et al. Medication adherence and associated factors among chronic heart failure patients on follow-up in North Shewa public hospitals, Oromia region, Ethiopia. BMC Cardiovasc Disord. 2024;24(1):444.

28. Chauhan H. An investigation into the orthoptist experience of instilling eye drops in children attending the eye clinic. Br Ir Orthopt J. 2024;20(1):171.
29. Osterberg L, Blaschke T. Adherence to medication. N Engl J Med. 2005;353(5):487–97.
30. Barbosa CD, Balp MM, Kulich K, Germain N, Rofail D. A literature review to explore the link between treatment satisfaction and adherence, compliance, and persistence. Patient Prefer Adherence. 2012;6:39–48.
31. Yi-Yueh L, Xin G, Shi-Hao W, Hui-Ling W, Gao-Hua W. Comparative study of auxiliary effect on dental anxiety, pain and compliance during adult dental root canal treatment under therapeutic Chinese or Western classical music. Phys Med Rehab Kuror. 2014;24(03):149–54.
32. Yamalik N. Dentist–patient relationship and quality care. Communication. Int Dent J. 2005;55(4):254–6.
33. Bergenmar M, Nylén U, Lidbrink E, Bergh J, Brandberg Y. Improvements in patient satisfaction at an outpatient clinic for patients with breast cancer. Acta Oncol. 2006;45(5):550–8.
34. Kim SS, Park BK. Patient-perceived communication styles of physicians in rehabilitation: effect on patient satisfaction and compliance in Korea. Am J Phys Med Rehabil. 2008;87(12):998–1005.
35. Claramita M, Utarini A, Soebono H, Van Dalen J, Van der Vleuten C. Doctor–patient communication in a Southeast Asian setting: the conflict between ideal and reality. Adv Health Sci Educ. 2011;16(1):69–80.
36. Torres AR, Soto ECJ, Patiño DC. Medical consultation, time and duration. Medwave. 2018;18(5):e7266.
37. Sun N, Rau PLP. Barriers to improve physician–patient communication in a primary care setting: perspectives of Chinese physicians. Health Psychol Behav Med. 2017;5(1):166–76.
38. Horowitz AM, Kleinman DV. Oral health literacy: a pathway to reducing oral health disparities in Maryland. J Public Health Dent. 2012;72:S26–S30.
39. Baskaradoss JK. Relationship between oral health literacy and oral health status. BMC Oral Health. 2018;18(1):172.
40. Sabbahi DA, Lawrence HP, Limeback H, Rootman I. Development and evaluation of an oral health literacy instrument for adults. Community Dent Oral Epidemiol. 2009;37(5):451–62.
41. Jones M, Lee JY, Rozier RG. Oral health literacy among adult patients seeking dental care. J Am Dent Assoc. 2007;138(9):1199–208.
42. Badran A, Keraa K, Farghaly MM. The impact of oral health literacy on dental anxiety and utilization of oral health services among dental patients: a cross-sectional study. BMC Oral Health. 2023;23(1):146.
43. Kripalani S, Weiss BD. Teaching about health literacy and clear communication. J Gen Intern Med. 2006;21(8):888.
44. Platt FW, Keating KN. Differences in physician and patient perceptions of uncomplicated UTI symptom severity: understanding the communication gap. Int J Clin Pract. 2007;61(2):303–8.
45. Misra S, Daly B, Dunne S, Millar B, Packer M, Asimakopoulou K. Dentist–patient communication: What do patients and dentists remember following a consultation? Patient Prefer Adherence. 2013;7:543–9.
46. Davis TC, Dolan NC, Ferreira MR, Tomori C, Green KW, Sipler AM, et al. The role of inadequate health literacy skills in colorectal cancer screening. Cancer Investig. 2001;19(2):193–200.
47. Parker MA. A perspective on doctor–patient communication in the dental office. N C Med J. 2007;68(5):365–7.
48. Kessels RP. Patients' memory for medical information. J R Soc Med. 2003;96(5):219–22.
49. Choi Y, Dodd V, Watson J, Tomar SL, Logan HL, Edwards H. Perspectives of African Americans and dentists concerning dentist–patient communication on oral cancer screening. Patient Educ Couns. 2008;71(1):41–51.
50. Threlfall AG, Hunt CM, Milsom KM, Tickle M, Blinkhorn AS. Exploring factors that influence general dental practitioners when providing advice to help prevent caries in children. Br Dent J. 2007;202(4):E10.
51. Kiesler DJ, Auerbach SM. Optimal matches of patient preferences for information, decision-making and interpersonal behavior: evidence, models and interventions. Patient Educ Couns. 2006;61(3):319–41.
52. Naidoo S. Transcultural and language barriers to patient care. S Afr Dent J. 2014;69(9):425.
53. Hussey N. The language barrier: the overlooked challenge to equitable health care. S Afr Health Rev. 2012;2012(1):189–95.
54. Mikkola TM, Polku H, Sainio P, Koponen P, Koskinen S, Viljanen A. Hearing loss and use of health services: a population-based cross-sectional study among Finnish older adults. BMC Geriatr. 2016;16(1):182.
55. Nayak A, Tamgadge S, Tamgadge A. Role of sign language in oral health education: a review. Int J Community Dent. 2021;9:113.

56. Ferguson WJ, Candib LM. Culture, language, and the doctor–patient relationship. Fam Med. 2002;34:353–61.
57. Meeuwesen L, Harmsen JAM, Bernsen RMD, Bruijnzeels MA. Do Dutch doctors communicate differently with immigrant patients than with Dutch patients? Soc Sci Med. 2006;63(9):2407–17.
58. Chipidza FE, Wallwork RS, Stern TA. Impact of the doctor–patient relationship. Prim Care Companion CNS Disord. 2015;17(5):27354.
59. Ridd M, Shaw A, Lewis G, Salisbury C. The patient–doctor relationship: a synthesis of the qualitative literature on patients' perspectives. Br J Gen Pract. 2009;59(561):e116–23.
60. Ho JCY, Chai HH, Lo ECM, Huang MZ, Chu CH. Strategies for effective dentist–patient communication: a literature review. Patient Prefer Adherence. 2024;18:1385–94.
61. Vergnes JN, Apelian N, Bedos C. What about narrative dentistry? J Am Dent Assoc. 2015;146(6):398–401.
62. Mead N, Bower P. Patient-centredness: a conceptual framework and review of the empirical literature. Soc Sci Med. 2000;51(7):1087-110.
63. Pradhan P, Kumar A, Batajoo KH, Shrestha P, Shrestha T, Pradhananga S. Attitude of medical and dental undergraduate students towards learning of communication skills at a private medical institute: a cross-sectional study. JNMA J Nepal Med Assoc. 2024;62(275):446.
64. Rüttermann S, Sobotta A, Hahn P, Kiessling C, Härtl A. Teaching and assessment of communication skills in undergraduate dental education: a survey in German-speaking countries. Eur J Dent Educ. 2017;21(3):151–8.
65. Khalifah AM, Celenza A. Teaching and assessment of dentist–patient communication skills: a systematic review to identify best-evidence methods. J Dent Educ. 2019;83(1):16–31.
66. Carey JA, Madill A, Manogue M. Communication skills in dental education: a systematic research review. Eur J Dent Educ. 2010;14(2):69–78.
67. Ayn C, Robinson L, Nason A, Lovas J. Determining recommendations for improvement of communication skills training in dental education: a scoping review. J Dent Educ. 2017;81(4):479–88.
68. Laurence B, Bertera E, Feimster T, Hollander R, Stroman C. Adaptation of the Communication Skills Attitude Scale (CSAS) to dental students. J Dent Educ. 2012;76(12):1629–33.
69. Nor NA, Yusof ZY, Shahidan MN. University of Malaya dental students' attitudes towards communication skills learning: implications for dental education. J Dent Educ. 2011;75(12):1611–9.
70. Szczekala K, Wiktor K, Kanadys K, Wiktor H. Benefits of motivational interviewing application for patients and healthcare professionals. Pol J Public Health. 2018;128(4):170–3.
71. Gillam DG, Yusuf H. Brief motivational interviewing in dental practice. Dent J. 2019;7(2):51.
72. Miller WR, Rollnick S. Motivational interviewing: helping people change. New York: Guilford Press; 2012.