

Review Article

The importance of continuing education in dentistry

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ABSTRACT

Continuing education is vital for maintaining excellence in dentistry, enabling practitioners to refine clinical skills, integrate emerging technologies, and enhance patient outcomes. In an ever-evolving field, staying updated with advancements such as digital workflows, artificial intelligence (AI) -powered diagnostics, and minimally invasive procedures ensures that dentists can provide efficient, patient-centered care. The relationship between oral and systemic health further emphasizes the need for an interdisciplinary approach, with education playing a pivotal role in equipping practitioners to manage complex cases effectively. Technological innovations, including 3D imaging, laser dentistry, and advanced materials, have transformed dental practice. Dentists must continually adapt to these changes to ensure precision, improve diagnostics, and enhance treatment efficacy. Participation in hands-on training and workshops allows professionals to master these innovations while maintaining a high standard of care. Additionally, the growing focus on aesthetic and minimally invasive dentistry requires an understanding of new techniques that prioritize patient comfort and satisfaction. Beyond clinical applications, continuing education fosters professional growth by providing opportunities for specialization, leadership development, and networking. Through conferences, seminars, and collaborative learning, dental professionals can expand their expertise, gain insights from peers, and explore academic and research opportunities. Furthermore, staying compliant with regulatory requirements underscores a commitment to ethical and evidence-based practice. As dentistry continues to advance, lifelong learning ensures that practitioners are prepared to meet evolving patient needs and expectations. By embracing continuing education, dental professionals not only enhance their skills and knowledge but also contribute to the advancement of the profession, ultimately improving care delivery and outcomes.

Keywords: Continuing education, Dentistry, Professional growth, Patient care, Technological advancements

INTRODUCTION

The dynamic nature of dentistry necessitates that practitioners engage in ongoing education to maintain their clinical proficiency and provide evidence-based care. Dentistry, as a healthcare field, is continuously influenced by advancements in technology, research, and evolving patient needs. To remain effective in practice and competitive in the profession, dental practitioners must actively participate in continuing education (CE). Beyond skill enhancement, CE contributes to a broader understanding of emerging trends, regulatory changes, and

interdisciplinary approaches, which are integral in contemporary dental practice.

Technology has emerged as a significant catalyst for change in the dental profession. The incorporation of digital tools, such as CAD/CAM systems, cone-beam computed tomography (CBCT), and laser technologies, has revolutionized diagnostics and treatment modalities. For dental professionals, staying updated with these technologies is not optional but essential. CE programs designed around these innovations ensure that dentists are equipped to integrate them into their practice effectively,

which ultimately improves patient outcomes and practice efficiency.¹ Additionally, advancements in artificial intelligence and automation further highlight the need for a continuous learning approach in dentistry. Another critical aspect of CE is its role in addressing the growing complexity of dental cases. As populations age and systemic diseases such as diabetes and cardiovascular conditions become more prevalent, the interrelationship between oral health and systemic health has gained significant attention. Managing patients with complex medical histories or comorbidities requires a comprehensive understanding of how these conditions impact oral health and vice versa. CE provides the platform for dentists to learn about emerging research in these areas, improving their ability to manage multifaceted cases.²

The expectations of dental patients have also evolved, necessitating a shift in how care is delivered. Patients now demand treatments that are not only functional but also aesthetically superior. Furthermore, the global focus on minimally invasive procedures and patient-centered care has driven innovations in dental materials and techniques. Continuing education programs focused on cosmetic and restorative dentistry provide the knowledge and skills required to meet these demands, ensuring patient satisfaction and treatment success.³ The professional and regulatory environment of dentistry also underscores the importance of CE. Most jurisdictions mandate participation in continuing education as part of licensure requirements, ensuring that practitioners adhere to current standards of care and ethical guidelines. Beyond regulatory compliance, engaging in CE fosters career advancement, leadership opportunities, and a deeper connection with peers in the field. It creates opportunities for collaboration, mentorship, and contribution to the profession's collective knowledge base.⁴

The emphasis on continuing education reflects a commitment to the ethos of lifelong learning, a principle central to healthcare professions. Dental practitioners who embrace CE not only enhance their personal growth but also elevate the profession's standards. The subsequent discussion will delve deeper into the various facets of continuing education, exploring its impact on clinical excellence, technological adaptation, patient care, and professional development.

REVIEW

Continuing education in dentistry is a cornerstone of professional development, ensuring that practitioners remain competent in a field characterized by constant advancements. CE programs equip dentists with the latest knowledge and skills, enabling them to adapt to innovations in materials, techniques, and technologies. For example, the introduction of CAD/CAM technology and digital workflows in restorative dentistry has transformed treatment efficiency and precision, requiring practitioners to stay current through dedicated training.⁵ Moreover, CE fosters a culture of evidence-based practice, where dentists

can critically appraise and integrate new research findings into patient care. The benefits of continuing education extend beyond technical proficiency. Participation in CE programs enhances dentists' ability to address increasingly complex patient needs, particularly as the relationship between oral and systemic health becomes more pronounced. Dentists who engage in CE are better prepared to collaborate with other healthcare professionals, ensuring comprehensive care for patients with systemic conditions such as diabetes or cardiovascular disease.⁶ Furthermore, CE promotes ethical practice and adherence to regulatory requirements, which are fundamental to maintaining public trust in the profession. Overall, continuing education is not merely an obligation but an opportunity for dentists to deliver superior care, achieve professional growth, and contribute to the advancement of the field.

Advancing clinical skills and knowledge

Continuing education in dentistry plays a pivotal role in refining clinical skills and expanding knowledge, which are essential for maintaining high standards of care. With the rapid pace of advancements in dental techniques and materials, it is imperative for practitioners to keep their expertise aligned with current best practices. CE programs often focus on hands-on training, enabling dentists to master new procedures such as guided implant surgery, advanced endodontic techniques, and minimally invasive restorations. This form of targeted education bridges the gap between theoretical understanding and practical application, ensuring that dentists can confidently implement these advancements in their clinical settings.⁷

Moreover, evolving treatment modalities necessitate a broader knowledge base to cater to diverse patient needs. The integration of digital technology in diagnostics and treatment planning is one area where CE has had a transformative impact. For instance, the utilization of CBCT for accurate imaging has become increasingly common. Mastery of such technology requires more than access to equipment; it demands thorough training to interpret complex images effectively and use the data to enhance treatment precision.⁸ Such programs not only enhance diagnostic capabilities but also reduce the risk of errors, thereby improving patient outcomes. Techniques such as atraumatic extractions and regenerative therapies have become standard components of modern dentistry, requiring in-depth training. Through workshops and seminars, dental practitioners are exposed to new approaches that prioritize patient comfort and recovery while achieving optimal clinical outcomes. For example, regenerative endodontics, which relies on stimulating the body's natural healing mechanisms, represents a paradigm shift in treatment strategies. By engaging in CE, practitioners are better positioned to adopt these techniques and provide their patients with cutting-edge care options.⁹

CE provides a platform for refining existing skills. Dentistry is a field where precision and manual dexterity

are crucial, and consistent practice is essential for maintaining these abilities. By participating in skill-focused CE courses, dentists can revisit fundamental practices and ensure they are delivering care with the highest level of accuracy. This continual refinement is particularly important in specialties like prosthodontics and oral surgery, where even minor improvements can significantly impact treatment success and patient satisfaction. Additionally, CE courses often include peer reviews and case studies, offering valuable opportunities to learn from the experiences of others and benchmark one's practices against industry standards. Ultimately, continuing education fosters a culture of lifelong learning, encouraging dental professionals to stay curious and proactive in their approach to patient care. This dynamic process ensures that skills and knowledge are not only preserved but also evolved to meet the ever-changing demands of modern dentistry.

Adapting to technological innovations in dentistry

The rapid advancement of technology has revolutionized the dental field, presenting both challenges and opportunities for practitioners. One of the most significant impacts of these innovations is the way they have enhanced diagnostic precision and treatment efficacy. Digital imaging technologies, such as intraoral scanners and 3D printing, are now widely integrated into clinical workflows. These tools enable dentists to create detailed digital impressions, enhancing the accuracy of prosthetic fittings and improving the overall patient experience. Such technology also reduces the need for repeat procedures caused by errors in traditional impression techniques, underscoring the importance of training programs that focus on their effective application.¹⁰

Artificial intelligence (AI) has emerged as a game-changer in dental diagnostics and treatment planning. AI-powered systems can analyze radiographs and clinical data to identify early signs of dental pathologies, including caries, periodontal disease, and even oral cancers. These systems provide predictive analytics that assist in treatment decision-making, minimizing human error and optimizing care outcomes. Continuing education programs focused on AI applications equip dental professionals with the knowledge to interpret and integrate AI findings into their clinical practice effectively, ensuring they remain at the forefront of this technological shift.¹¹

Moreover, laser dentistry has expanded the possibilities for minimally invasive procedures. Lasers are now employed in soft tissue surgeries, periodontal treatments, and cavity preparations, offering benefits such as reduced bleeding, faster healing times, and greater patient comfort. However, the use of laser technology requires a deep understanding of its principles and applications. Without proper training, there is a risk of tissue damage or suboptimal outcomes. Continuing education courses dedicated to laser dentistry not only provide theoretical knowledge but also emphasize

hands-on practice, enabling dentists to incorporate this versatile tool safely and effectively into their practice.¹²

Digital workflows have also transformed orthodontics, with innovations like clear aligners gaining widespread popularity. These aligners are developed using advanced 3D modeling and manufacturing processes, requiring practitioners to stay updated on the latest software and techniques. In addition to their clinical application, digital tools facilitate patient communication by allowing practitioners to visually demonstrate treatment outcomes during consultations. CE programs that focus on digital orthodontics help dentists understand the intricacies of these workflows, empowering them to offer personalized and effective treatment solutions.

The adoption of these technologies has also shifted the dynamics of dental education itself. Virtual reality and augmented reality are being increasingly used in training programs, enabling practitioners to simulate complex procedures in a risk-free environment. Such immersive learning experiences enhance understanding and improve procedural accuracy. The emphasis on technology-driven education highlights the evolving nature of dental practice and the necessity for continuous adaptation to stay relevant in a competitive and technologically advanced field.

Enhancing patient care and outcomes

Continuing education in dentistry directly influences the quality of care provided to patients, fostering improved outcomes through the integration of the latest techniques, materials, and evidence-based practices. One significant area of impact is the ability of dental professionals to tailor treatments to the specific needs of individual patients. With advances in material science, such as biocompatible and aesthetic restorative materials, practitioners must be adept at selecting and applying these options to achieve optimal functionality and appearance. CE programs offer in-depth training on the properties and applications of such materials, enabling clinicians to make informed decisions and improve patient satisfaction.¹³

The growing awareness of the relationship between oral health and systemic conditions has placed greater responsibility on dentists to adopt a multidisciplinary approach to care. Patients with diabetes, cardiovascular diseases, or other chronic conditions often present with unique oral health challenges that require careful management. For example, periodontal therapy has been shown to positively impact glycemic control in diabetic patients, underscoring the importance of comprehensive care. Through continuing education, dental professionals can stay updated on the latest research linking systemic and oral health, allowing them to provide holistic care that goes beyond traditional dental treatments.¹⁴

Moreover, patient-centered care has become a cornerstone of modern dental practice, emphasizing not only clinical outcomes but also patient comfort and satisfaction.

Advances in minimally invasive techniques, such as atraumatic extractions and single-visit root canal treatments, have been developed to enhance the patient's experience. These approaches reduce pain, recovery time, and the overall invasiveness of procedures, but their successful implementation requires specialized training. CE programs focusing on minimally invasive dentistry enable practitioners to refine their skills, ensuring they can deliver care that aligns with patient expectations while maintaining high standards of clinical excellence.¹⁵

Continuing education also facilitates improved communication between dentists and their patients, which is integral to achieving better outcomes. Effective communication helps patients understand their diagnosis, treatment options, and the importance of adherence to recommended care plans. CE courses often include components on patient communication strategies, providing dentists with tools to enhance their ability to explain complex procedures, manage patient anxiety, and foster trust. This not only improves the likelihood of treatment compliance but also contributes to building long-term dentist-patient relationships.

Another area where CE enhances patient outcomes is in the management of dental emergencies and complications. As emergencies often require swift and accurate decision-making, ongoing training equips practitioners with the skills and confidence needed to handle such situations effectively. For instance, advanced courses on managing traumatic dental injuries or recognizing early signs of serious oral conditions ensure that patients receive prompt and appropriate care, reducing the risk of adverse outcomes.

Professional growth and career development opportunities

Continuing education in dentistry serves as a foundation for professional growth, offering practitioners opportunities to enhance their expertise, broaden their career prospects, and stay competitive in an ever-evolving field. Participation in CE programs allows dentists to specialize further, expanding their scope of practice and providing avenues to pursue advanced certifications in areas such as implantology, orthodontics, or cosmetic dentistry. These specializations not only enhance a clinician's skills but also increase their marketability, making them more attractive to patients and employers alike. CE courses tailored to specific specializations provide the structured learning needed to gain competence in these complex fields, ensuring that practitioners deliver the highest standard of care.¹⁶

Leadership development is another significant aspect of professional growth facilitated by continuing education. Many CE programs emphasize the cultivation of leadership and management skills, which are essential for those aiming to transition into administrative roles or run their own practices. These courses often focus on effective

team management, financial planning, and ethical decision-making, equipping dentists with the tools necessary to build and sustain successful practices. For instance, a dentist transitioning into practice ownership benefits from understanding the nuances of operational efficiency, which is often highlighted in CE programs focused on practice management.¹⁷ Moreover, CE programs create invaluable networking opportunities for dental professionals. Conferences, workshops, and seminars allow dentists to connect with peers, mentors, and industry leaders, fostering a sense of community and collaboration. Through these interactions, practitioners can share experiences, gain insights into emerging trends, and establish professional relationships that may lead to collaborative research or referrals. Networking also opens doors to academic opportunities, such as teaching positions or contributing to scholarly publications, further broadening career pathways. Many practitioners credit these connections as catalysts for their professional growth and a deeper engagement with the field.¹⁸

Engagement in CE also provides a platform for dentists to contribute to the advancement of their profession. By staying updated on cutting-edge research and technologies, practitioners can actively participate in discussions shaping the future of dentistry. Those involved in research or academic dentistry can translate their clinical experiences into impactful studies, furthering the collective knowledge base of the field. Additionally, by presenting at conferences or publishing case studies and reviews, dentists can position themselves as thought leaders, enhancing their professional reputation and inspiring the next generation of practitioners. Another key component of career development through CE is staying compliant with regulatory and licensure requirements. Most jurisdictions mandate a certain number of CE hours for license renewal, ensuring that practitioners maintain their competency and adhere to evolving standards of care. By meeting these requirements, dentists not only protect their professional standing but also demonstrate a commitment to lifelong learning and excellence in practice.

CONCLUSION

Continuing education in dentistry is essential for ensuring clinical excellence, adapting to technological advancements, and meeting the growing demands of modern patient care. It fosters professional growth, enhances treatment outcomes, and equips practitioners with the knowledge to address complex cases effectively. By engaging in lifelong learning, dental professionals not only improve their skills but also contribute to the evolution of the field. Ultimately, continuing education reinforces the commitment to delivering high-quality, evidence-based care.

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