



## Role of dental professionals in tobacco cessation: Global evidence and Indian scenario – A structured review

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### Abstract

Tobacco use remains one of the leading causes of preventable morbidity and mortality worldwide, significantly affecting both systemic and oral health. Dental professionals are uniquely positioned to contribute to tobacco cessation due to their regular patient interactions and ability to detect early oral manifestations of tobacco use. This structured review aims to evaluate the global evidence regarding the role of dental professionals in tobacco cessation and to analyze the current scenario in India. Literature suggests that dentists can effectively deliver brief interventions, achieve measurable quit rates, and significantly influence patient behavior. However, barriers such as lack of training, time constraints, and inadequate integration into dental curricula limit their full potential. In India, despite high tobacco burden, implementation of cessation practices in dental settings remains suboptimal. Strengthening training, policy integration, and awareness can enhance the role of dental professionals in combating tobacco use.

**Keywords:** Smoking cessation, tobacco use disorder, tobacco use cessation

### Introduction

Tobacco use continues to be one of the most significant global public health challenges, contributing substantially to preventable morbidity and mortality. According to the World Health Organization, tobacco is responsible for more than eight million deaths annually, with a considerable proportion occurring in low- and middle-income countries. Beyond its systemic effects, tobacco has profound implications for oral health, being a major etiological factor in conditions such as periodontal disease, dental caries, oral mucosal lesions, and oral cancer.

The oral cavity often exhibits early signs of tobacco exposure, placing dental professionals in a unique position to detect, intervene, and educate patients regarding the harmful effects of tobacco use [1]. Dental professionals frequently interact with patients for both preventive and curative care, thereby offering repeated opportunities to initiate tobacco cessation interventions. Unlike many other healthcare settings where visits may be symptom-driven, dental consultations often involve routine check-ups, allowing for consistent reinforcement of health-promoting behaviors [2]. This repeated contact enhances the potential for delivering effective tobacco cessation counseling. Furthermore, visible oral manifestations such as staining, halitosis, leukoplakia, and oral submucous fibrosis serve as powerful visual tools that can motivate patients to consider quitting tobacco [3, 4]. The integration of cessation advice into routine dental care aligns with the broader concept of comprehensive patient management and preventive dentistry. Globally, there has been increasing recognition of the role of dental professionals in tobacco cessation. International guidelines advocate the incorporation of structured cessation strategies within dental practice, with the widely accepted “5 A’s” model—Ask, Advise, Assess, Assist, and Arrange—serving as a practical framework for intervention. Evidence suggests that even brief advice delivered by dental professionals can significantly enhance quit attempts and improve cessation outcomes. Studies have

demonstrated that patients are generally receptive to tobacco cessation counseling from dentists, often perceiving them as credible and trustworthy sources of health information [5]. This positive patient attitude further strengthens the potential impact of dental-based interventions. Despite the growing body of evidence supporting the effectiveness of tobacco cessation interventions in dental settings, their implementation remains inconsistent. Several barriers hinder the active involvement of dental professionals, including lack of adequate training, limited time during clinical practice, insufficient knowledge of pharmacological aids, and absence of structured protocols.

In many cases, dental curricula do not adequately emphasize tobacco cessation counseling, resulting in a lack of confidence among practitioners. Additionally, misconceptions regarding patient resistance and concerns about disrupting the dentist–patient relationship may further limit engagement in cessation activities [6]. The need for effective tobacco cessation strategies is particularly critical in countries like India, which bears a substantial burden of both smoking and smokeless tobacco use. India accounts for a significant proportion of global tobacco users, with diverse forms such as cigarettes, bidis, gutka, and khaini being widely consumed. The high prevalence of tobacco use is directly linked to the increased incidence of oral potentially malignant disorders and oral cancer in the Indian population. Given this context, dental professionals in India have a crucial role to play in early detection, patient education, and initiation of cessation interventions [7]. However, the current scenario in India reveals a gap between knowledge and practice. While many dental professionals acknowledge their responsibility in tobacco cessation, only a limited number actively implement structured counseling strategies in clinical practice. Factors such as lack of formal training, inadequate institutional support, and limited awareness of national guidelines contribute to this gap. Government initiatives like the National Tobacco Control Programme have laid the

foundation for tobacco cessation services, but the integration of dental professionals into these programs remains suboptimal. In light of these considerations, there is a pressing need to strengthen the role of dental professionals in tobacco cessation through enhanced education, training, and policy support [8]. This review aims to synthesize global evidence on the effectiveness of dental professionals in tobacco cessation and to critically analyze the challenges and opportunities within the Indian context. By highlighting existing gaps and potential strategies, this study seeks to contribute to the development of more effective and integrated tobacco cessation efforts within dental practice.

### **Global Evidence on Role of Dental Professionals**

Dental professionals occupy a strategic position in tobacco cessation due to frequent patient contact and the visibility of oral signs of tobacco use. Evidence suggests that dentists can play a crucial role in identifying tobacco users, educating patients, and initiating cessation interventions. Studies indicate that brief interventions delivered by dentists can significantly influence quitting behavior. The “5 A’s” model (Ask, Advise, Assess, Assist, Arrange) is widely recommended for tobacco cessation in dental settings. These structured interventions enable dental professionals to systematically address tobacco use during routine visits. Clinical trials and systematic reviews have demonstrated that tobacco cessation programs implemented in dental settings can achieve quit rates of approximately 10–15% annually [9]. Additionally, meta-analyses have shown that interventions by dental professionals increase short-term abstinence rates among tobacco users. Patients generally exhibit a positive attitude towards receiving cessation advice from dentists. Research shows that most patients welcome counseling and consider dentists as credible sources of health information. Furthermore, brief chairside counseling has been shown to improve patient attitudes and motivation to quit tobacco.

### **Mechanisms and Approaches in Tobacco Cessation**

Tobacco cessation interventions in dental practice include behavioral counseling and pharmacological support. Behavioral interventions such as motivational interviewing and brief advice are effective and feasible in dental settings. Pharmacological aids such as nicotine replacement therapy (NRT), bupropion, and varenicline can be prescribed or recommended by dental professionals as part of comprehensive cessation programs. Integration of behavioral and pharmacological approaches yields better outcomes compared to single interventions [10]. The oral health perspective provides a strong motivational tool. Patients are more likely to respond to visible oral changes such as staining, halitosis, and mucosal lesions, which dentists can use to reinforce cessation messages.

### **Barriers to Tobacco Cessation in Dental Practice**

Despite strong evidence, several barriers hinder the implementation of tobacco cessation practices by dental professionals. The most commonly reported barriers include lack of training, insufficient time, and inadequate knowledge of cessation protocols. Studies reveal that many dentists feel inadequately prepared to provide cessation counseling, highlighting the need for enhanced education and training programs [11]. Additionally, misconceptions about patient resistance and lack of reimbursement further

limit engagement. Another significant challenge is the inconsistency in applying standardized protocols such as the 5 A’s, which reduces the effectiveness of interventions. India has one of the highest burdens of tobacco use globally, with widespread use of both smoking and smokeless forms. Oral health consequences such as oral submucous fibrosis and oral cancer are highly prevalent in the Indian population. Dental professionals in India have immense potential to contribute to tobacco cessation. Studies indicate that a majority of dental students and practitioners recognize their responsibility in tobacco cessation counseling; however, practical implementation remains limited. Research from India shows that while many dentists record tobacco history, only a small proportion actively provide cessation counseling or follow standardized protocols. Lack of formal training in tobacco cessation is a major barrier. Furthermore, incorporation of tobacco cessation training in dental curricula is still inadequate. Experts emphasize the need for curriculum reforms to include structured training in counseling techniques and cessation strategies. Policy initiatives such as the National Tobacco Control Programme (NTCP) provide opportunities for integrating dental professionals into tobacco cessation efforts [12–15]. However, effective utilization of dental settings for cessation services requires better coordination and awareness.

### **Opportunities and Future Directions**

Strengthening the role of dental professionals in tobacco cessation requires a multifaceted approach. Integration of cessation training into undergraduate and postgraduate dental curricula is essential. Continuing dental education programs can enhance knowledge and skills of practicing dentists. Development of standardized guidelines and protocols tailored to dental settings can improve consistency and effectiveness.

Collaboration with medical professionals and referral systems can provide comprehensive care to patients attempting to quit tobacco [16]. Technological advancements such as digital counseling tools and telehealth can further expand the reach of tobacco cessation services in dental practice. In India, public health strategies should focus on leveraging dental clinics as key points for tobacco cessation interventions. Awareness campaigns and policy support can facilitate this integration.

### **Conclusion**

Dental professionals play a vital and underutilized role in tobacco cessation. Global evidence strongly supports the effectiveness of dental interventions in promoting tobacco abstinence. However, barriers such as lack of training and inadequate implementation limit their impact. In India, despite high tobacco burden, the role of dental professionals in cessation remains underdeveloped. Strengthening education, policy integration, and clinical practices can enhance their contribution to reducing tobacco-related morbidity and mortality.

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