Smoking, tobacco, and oral health

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"Helping patients stop smoking may be the single most important service dentists can provide for their patients' oral and general health."—World Dental Federation (FDI) [1]

History

Tobacco is thought to have been first cultivated around 6000 B.C., with earliest reports of use among indigenous Americans around the first century B.C. By the 16th century it was being used worldwide. It was introduced into China via Japan and/or the Philippines between 1530 and 1600.

There has been no shortage of early warnings on the harmful effects tobacco has on dental health. For example, Dr. Joel Shew wrote in 1849 in a book entitled *Tobacco: Its History, Nature, and Effects on the Body and Mind* [2]: "The pernicious effects of tobacco on the teeth are easily proved…the teeth of tobacco chewers, who have continued the practice for a considerable length of time, are generally bad, as any one may observe. It was once said in the presence of a clergyman of our acquaintance, that tobacco was good for preserving the teeth, upon which he answered, 'That is not true, for on one side my teeth are perfectly good, while on the other side, the one in which I have always kept my cud, there is not a stump left.' "

A PubMed online search in August 2006 for "tobacco" and "oral" yielded nearly 3000 published articles in medical journals, but 150 years ago Dr. Shew [2] had already identified most of the oral health effects of tobacco as we know them today—on the teeth, gums, throat, taste, voice, including cancer, albeit much of his evidence was anecdotal.

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Table 1 Effects of tobacco on oral health [4]

Effects
Oral cancers and pre-cancers
Increased severity and extent of periodontal diseases
Poor wound healing
Bad breath
Stained teeth
Bone loss
Shrinking gums
Mouth sores
Decreased senses of taste and smell
Caries from smokeless tobacco products containing sugar

The health evidence

Tobacco is one of the greatest public health challenges the world faces today. There are 1.4 billion smokers in the world, and it is predicted this figure will rise to over 1.6 billion by 2030, due principally to population expansion. Every year about 5 million deaths are caused by tobacco, and this number is also predicted to rise to 10 million by 2020 [3].

There is overwhelming evidence showing that tobacco use causes many diseases, including stroke; heart attack; chronic bronchitis; chronic cough; asthma; and many cancers, including cancer of the lungs, throat, mouth, stomach, kidney, and bladder. Half of all regular smokers die from smoking, and half of these die in middle age (Table 1) [4].

The FDI combines a summary of the health effects with suggested action in the following statement on its website [5]: "The effects of tobacco use on the population's oral health are alarming. The most significant effects of smoking on the oral cavity are: oral cancers and pre-cancers, increased severity and extent of periodontal diseases, as well as poor wound healing. The clear link between oral diseases and tobacco use provides an ideal opportunity for oral health professionals to partake in tobacco control initiatives and cessation programmes." The FDI statement on tobacco is shown in Table 2 [6].

Prevention is clearly the most cost-effective measure.

Table 2 FDI statement on tobacco [6]

The FDI issued an authoritative statement on tobacco in 1996 to emphasize the importance of tobacco control for oral health. The key points are the recognition of tobacco as a serious risk to health and oral health, the necessity to integrate tobacco issues in all education and the protection of children by preventing early initiation and exposure to tobacco smoke.

Tobacco in daily practice
The use of tobacco is harmful to general health as it is a common cause of addiction, preventable illness, disability, and death. The use of tobacco causes an increased risk for oral cancer, periodontal disease, and other deleterious oral conditions and it adversely affects the outcome of oral health care. The FDI urges its Member Associations and all oral health professionals to take decisive actions to reduce tobacco use and nicotine addiction among the general public. The FDI also urges all oral health professionals to integrate tobacco use prevention and cessation services into their routine and daily practice.

Tobacco in education
Brief interactions, for example, by identifying tobacco users, giving direct advice, supportive material and follow-up, all have a significant impact on the patients' use of tobacco products. The FDI urges all oral health institutions and all continuing education providers to integrate tobacco-related subjects into their programs.

Protect children
The adverse consequences of environmental tobacco smoke are particularly severe for children—and lifelong. The FDI strongly endorses and promotes public and professional education and policies, that prevent and/or reduce the exposure to tobacco smoke for infants, children, and young people.

Prevent initiation
More than 80% of adults who use tobacco started their use of tobacco before the age of 18. Use of tobacco among children and youths easily produces a nicotine dependency, the risk of which is vastly underestimated by young people. The FDI vigorously supports all measures that endeavor to prevent the initiation of tobacco use by young people and dissuade initiation by adults.

Tobacco control also protects the rights of non-smokers to a clean environment.

The role of the FDI

The FDI has undertaken many activities in tobacco control ranging from the traditional focus on health to outspoken advocacy. A few recent examples are:

1. The World Health Professions Alliance urged Federation International de Football Association (FIFA) to make the World Cup 2006 smoke-free: In 2006 the FDI, along with other partners, joined more than 170 organizations and alliances worldwide to support the campaign for a smoke-free World Cup 2006 in Germany.
2. 'Tobacco or Oral Health' Guide: In 2005, the FDI and the World Health Organization (WHO) jointly released the 'Tobacco or Oral Health' advocacy guide. The publication is a practical advocacy guide for oral health professionals. It provides tobacco facts, discusses the role of dentists and tobacco control, examines the role of advocacy, and provides a number of wide-ranging recommendations to move the tobacco control agenda forward.
3. Conferences: The FDI has participated actively in numerous world, regional, and national conferences on tobacco.
4. The WHO Framework Convention on Tobacco Control (FCTC): The FDI has been a constant supporter of the FCTC since the start of negotiations in 1998. The FCTC is the WHO's first-ever international convention, utilizing international law to improve public health. Of 192 WHO Member States and the European Community, 167 have signed the WHO FCTC, and 140 have already ratified. China, and thus Hong Kong and Macau, has both signed and ratified the FCTC. It came into effect on February 27, 2005, making it one of the most rapidly adopted international treaties of all time. Its components read like a model national tobacco control law (Table 3).

Table 3 Main provisions of the World Health Organization Framework Convention on Tobacco Control

1. Regulation of:
   - contents, packaging, and labeling of tobacco products
   - prohibition of sales to and by minors
   - illicit trade in tobacco products
   - smoking in work and public places
2. Reduction in consumer demand by:
   - price and tax measures
   - comprehensive bans on tobacco advertising, promotion, and sponsorship
   - education, training, raising public awareness, and assistance with quitting
3. Protection of the environment and health of tobacco workers
4. Support for economically viable alternative activities
5. Research, surveillance, and exchange of information
6. Support for legislative action to deal with liability

The role of dental organizations

In 2004, the WHO drew up a Code of Practice on

Tobacco Control for all health professional organizations around the world: "In order to contribute actively to the reduction of tobacco consumption and include tobacco control in the public health agenda at national, regional and global levels, it is hereby agreed that health professional organizations will:

1. Encourage and support their members to be role models by not using tobacco and by promoting a tobacco-free culture.
2. Assess and address the tobacco consumption patterns and tobacco-control attitudes of their members through surveys and introduction of appropriate policies.
3. Make their own organizations' premises and events tobacco-free and encourage their members to do the same.
4. Include tobacco control in the agenda of all relevant health-related congresses and conferences.
5. Advise their members to routinely ask patients and clients about tobacco consumption and exposure to tobacco smoke—using existing evidence-based approaches and best practices, give advice on how to quit smoking, and ensure appropriate follow-up of their cessation goals.
6. Influence health institutions and educational centers to include tobacco control in their health professionals' curricula, through continued education and other training programs.
7. Actively participate in World No Tobacco Day every May 31.
8. Refrain from accepting any kind of tobacco industry support—financial or otherwise, and from investing in the tobacco industry, and encourage their members to do the same.
9. Ensure that their organization has a stated policy on any commercial or other kind of relationship with partners who interact or with interests in the tobacco industry through a declaration of interest.
10. Prohibit the sale or promotion of tobacco products on their premises, and encourage their members to do the same.
11. Actively support governments in the process leading to the signature, ratification, and implementation of the WHO Framework Convention on Tobacco Control.
12. Dedicate financial and/or other resources to tobacco control—including dedicating resources to the implementation of this code of practice.
13. Participate in the tobacco-control activities of health professional networks.
14. Support campaigns for tobacco-free public places."

This Code of Practice was adopted and signed by the participants of the WHO Informal Meeting on Health Professionals and Tobacco Control, held from January 28-30, 2004 in Geneva, Switzerland. This Code of Practice has also been endorsed by the FDI, and by many medical organizations in Hong Kong, including the Hong Kong Dental Association.

The role of dentists in Hong Kong

There are several moral, ethical, and practical reasons why oral health professionals should strengthen their contribution to tobacco cessation programs, for example [7]:

- They are concerned about the adverse effects of tobacco on the oropharyngeal region;
- They often work with children, youths, and their caregivers and thus have opportunities to educate these individuals on the dangers of tobacco;
- They often spend more time with their patients than many other clinicians, providing opportunities to integrate education and intervention methods into practice;
- They often treat women of childbearing age, and are thus able to inform them about the potential harm to their babies (and themselves) from tobacco use;
- They are as effective as other clinicians at helping tobacco users quit and it is known that a multidisciplinary approach increases cessation rates; and
- They can stimulate their smoking patients into quitting by showing the actual effects of tobacco on the mouth.

The dentist and the whole dental team are in a unique position to provide advice, support or referral to specialist services for smoking patients. In most countries the role of the dental team is hugely underexploited and needs to be reinforced by appropriate measures at all levels, like the following suggestions from the FDI:

- A dental education that includes tobacco aspects and contributes to a changed role model;
- Training and capacity building of the oral health professional team;
- Appropriate remuneration for tobacco cessation counseling;
- Strengthening of public health responsibility at individual and associations level; and
- Increased advocacy for the important role of oral health professionals in tobacco control on all levels.

Even brief counseling by health professionals on the dangers of smoking and importance of quitting is a

cost-effective method for reducing smoking [8]. Smoking cessation improves the health and well-being of patients and also improves the outcomes of certain dental treatments.

Dental health professionals should also lead by example. They should be role models for their patients, by ceasing to smoke, and by ensuring that their workplaces and public facilities are smoke- and tobacco-free.

Many dental professionals focus on care of the individual; on saving people from ill health and death by offering advice to patients. It may seem a giant leap to go from individual clinical practice to public health advocacy: challenging the tobacco industry, examining alternative crops, engaging in economic surveys to show that tobacco is a debit to the economy, supporting tobacco tax increases, protecting the environment by supporting smoke-free areas, or lobbying governments to ratify and implement WHO's FCTC.

Yet, both approaches are vital and complementary. The tobacco epidemic has clearly shown that the medical model alone is insufficient to reduce the epidemic.

References

1. World Dental Federation website: http://www.fdiworldental.org/public_health/5_4facts.html. Accessed 24 Oct 2006.
2. Shew J. Tobacco: its history, nature, and effects on the body and mind. Stoke, England: G. Turner Pub. Co.; 1849.
3. World Health Organization website: http://www.who.int/tobacco/en/. Accessed 13 Aug 2006.
4. Tobacco smoking and dental health. Website: http://www.healthyteeth.org/tobacco/index.html. Accessed 13 Aug 2006.
5. The role of the dentist and the dental team. FDI website: http://www.fdiworldental.org/public_health/5_0tobacco.html. Accessed 13 Aug 2006.
6. FDI statement on tobacco. FDI website: http://www.fdiworldental.org/public_health/5_1statement.html. Accessed 24 Oct 2006.
7. World Oral Health Report 2003. Geneva: World Health Organization; 2003.
8. Russell MA, Wilson C, Taylor C, Baker CD. Effect of general practitioners' advice against smoking. Br Med J 1979;2:2315.