

Tobacco initiation to dependence in youth: Dentists perspective

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ABSTRACT

Tobacco use is the leading preventable causes of morbidity and mortality. The most powerful predictor of adult tobacco use is its initiation during adolescence, the most susceptible time for onset of this habit. Initiation of tobacco use is associated with peer pressure, parental use, school factors, cultural norms, lower self-esteem, accessibility, moderate pricing, desire for experimentation and aggressive marketing by tobacco companies.

While dentists have a positive attitude regarding their role in tobacco cessation, the same is not extrapolated into practice. Several barriers to counseling in the dental clinic have been identified. Dental professionals can render tobacco cessation services to the youth. Brief interventions, self-help materials, and pharmacotherapy for established nicotine dependence form the mainstay of therapy. The purpose of this paper is to identify the several factors leading to tobacco initiation in adolescence and discuss the role of dentists in future dependence.

Key words: Tobacco; Youth; Dentist; Initiating factors; Initiation; Prevention.

INTRODUCTION

Tobacco is considered to be the leading cause of preventable deaths in the world. Preventing and treating diseases caused by tobacco is one of the major challenges of public health today. Despite the current knowledge of the harm caused by tobacco, its consumption continues to increase.

The 'tobacco epidemic' is shifting from industrialized to developing countries, due to steady population growth coupled with tobacco industry ensuring that millions of people become fatally addicted each year.

Close to > 80% of the world's tobacco users live in low and middle income countries.¹

The tobacco epidemic presents a global challenge, affecting all continents. Tobacco is predicted to be responsible for a staggering one billion deaths in the 21st century unless urgent action is taken. These statistics highlight the enormity of the challenge that affects all the countries. Treatment of tobacco-related diseases has implications for the global economy as they form a significant part of the total costs for medical care worldwide.² Nearly, five million tobacco users die every year and this figure will increase to 10 million by 2020. Of these, seven million deaths will occur in the developing countries, mainly in China and India.³

Tobacci and youth

There is a need to identify high-risk segments of the population such as youth as an entry point to tobacco use as targeted by industry promotion. Most tobacco users start

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using it before the age of 18 years, while some start as young as 10 years of age⁴; the time for discovery, challenge and experimentation, when they are far too young to understand or resist social expectations.^{5,6} The risks of tobacco use are highest among those who start early and continue its use for a long period. In order to reduce the long term burden of tobacco related diseases, adoption of successful prevention and cessation strategies is the only feasible solution in less resourceful countries.

Of particular concern for dental professionals, tobacco is a risk factor for oral cancer, periodontal disease, and poor wound healing. Hence, it is important for dentists to understand the factors which lead to tobacco abuse in youth, to counter this public health threat by their intervention.

Determinants of tobacco use in youth

The determinants of tobacco use among youth can be classified into four broad categories.

1. Socio-demographic factors

Large numbers of children initiate smoking between 10-15 years of age⁷ and some even at less than 10 years⁸. Various studies show adolescents starting younger are more likely to become regular users and less likely to quit smoking. A younger initiation age correlates with an increased chance of severe addiction emphasizing the importance of delaying onset⁹. Early initiation (<10 yrs) is high in the states where tobacco use prevalence is high¹⁰.

Gender differences

The difference in current cigarette smoking rates between boys and girls is smaller than the difference between men and women, suggesting that adult female smoking prevalence rates are likely to increase.

Rural v/s urban residence

Overall tobacco use shows little difference in rural and urban areas⁴, though the reasons for their use may be different. For urban poor, the common reason is their film hero, who smokes, as well as the peer influence⁷. In rural

Table 1. Reasons for young girls to start cigarette (smoking)

Global trend in woman emancipation
Concern with weight, body image and fashion
Positive image of smoking in movies and magazine
Cigarette marketing campaigns targeting women
Perceived improvement in economic status

areas many people believe in so called multi-magical properties of tobacco use and are unaware of the hazards of it¹⁰.

The role of family

Family plays a very important role in initiation of tobacco use by an adolescent. Tobacco use by parents or an elder sibling increases the likelihood that a child begins smoking by more than twice. Children may have a substantially higher onset rate if both of their parents' smoke (25%) compared to two nonsmoking parents (5%)¹¹.

Social-environmental factors

Role models

Exposure to movies in which stars that are admired by adolescents are smokers and are portrayed as sexy, smart, attractive, rich, and courageous also considerably increases the chances of smoking initiation among teens¹².

Promotion by tobacco companies

Advertisements of various tobacco products are very common in all forms of media including the print media, television, and the roadside hoardings. Tobacco industry effectively targets the young people with images of smokers as trendy, sporty and successful besides sponsoring the events like bravery awards and lotteries¹³. Advertisements and promotion of cigarettes have been reaching its peak in developing countries like India due to a sharp decline in sales in Western countries¹⁴.

Easy availability and moderate pricing of tobacco products

Tobacco products are socially sanctioned but are freely available in every nook and corner throughout the country. Even the small kids are allowed to buy them despite the ban by the government. Beedis are a bit cheaper than the cigarettes and hence are preferred by the poor who cannot afford cigarettes ¹¹.

The role of peer influence

Although children may start smoking for psychosocial reasons like peer influences; curiosity, desire for experimentation or as a remedy for stress, takes place very early in their smoking career ¹¹. Peer pressure is an important determining factor for initiation of tobacco use among children and adolescents.

Personal factors

Some factors consistently associated with smoking initiation are self-esteem, adult and scholastic competence, locus of control, socialization, susceptibility to peer influence, and risk-taking. The first four factors appear to be protective against smoking whereas the last two are risk factors ¹⁵.

It has been repeatedly demonstrated that stress, measured in a variety of ways, is associated with initiation to smoking and with maintenance of the behavior. The use of smoking for dealing with stress is not unexpected as nicotine may have direct pharmacological effects that moderate stress. Smoking has been cited as a means of dealing with stress, anxiety and anger among young smokers.

The importance of health items is related to smoking status; belief that personal health is damaged by smoking was protective for initiation to smoking and for daily smoking ¹⁵.

Behavioral factors

There are three major categories of behavioral variables.

First group of factors are related to school, primarily academic performance and

aspirations. Those students who do well in school, have high academic aspirations and are committed to school are less likely to smoke than those who do not possess these characteristics ¹⁵.

A second category contains risk-taking or deviant factors such as violence and gang membership. India has probably the largest population of street children in the world. The majorities of them has no families and have an extremely stressful life. Nicotine abuse gives these kids excitement and relief from the all pervasive gloom of street life and serve to suppress hunger and helplessness ¹¹.

Third, related group includes lifestyle factors such as diet, exercise, sleep, and dental care. Alcohol and other drug use increased the risk of smoking among adolescents whereas participation in sports or other physical exercise consistently protected against smoking ¹⁵.

Development of dependence

Once adolescents have experimented with smoking, approximately 50% continue to smoke and become addicted. This experimentation with tobacco use during adolescence commonly leads to dependence and chronic diseases. Adolescent tobacco smoking has been found to be a major predictor of adult smoking, preventing this use requires intervention in the early adolescence prior to the time when these behaviors have already become ingrained ¹⁶.

For the past two decades, the onset of dependence has been conceptualized by the Stage theory as a slow and sequential process, with the daily use of tobacco over an extended period of time as a prerequisite for nicotine dependence ¹⁷. Contradicting the Stage theory, preliminary results from the DANDY (Development and Assessment of Nicotine Dependence in Youth) study suggested that the first symptoms of nicotine dependence can appear within a matter of days or weeks of the onset of intermittent tobacco use ^{17, 18}.

Loss of autonomy in adolescents frequently occurs rapidly and at very low levels of

nicotine exposure. The median consumption at the time of the first symptom was two cigarettes per week¹⁸.

Adolescents under 19 years of age are twice as likely to report difficulty quitting than individuals of 19–22 years¹⁹. Proven smoking cessation approaches have had disappointing results with adolescent smokers²⁰.

Role of dental professionals in tobacco control

Dentists can play a major role to control tobacco menace by Public Health Education at community level and brief interventions in the clinics.⁵

Health education and information

Prevention against the diseases that come with tobacco use is based primarily on public and individual education to drop the habit or preferably not to begin in the first place. Dentist can take initiative to conduct school-based tobacco prevention programs to educate the adolescents about the health risk of tobacco consumption, risk of addiction, and benefits of tobacco cessation. Such programs identify the social influences that promote its initiation among the youth and teach skills to resist such influences, which can produce a long term relative improvement in quit rates,⁴ or delayed adolescent tobacco use, especially if strengthened by booster session and community programs involving parents. A public health dentist can write articles about benefits of tobacco control, participate in talk shows, demonstrations, discussions, and link with government and non-government organizations to involve youth in anti-tobacco advocacy. The focus should not be only on primary prevention, that is not only on discouraging young people from taking up the habit but also on providing help and support for those who wish to quit tobacco usage.

Tobacco cessation for youth in dental clinics

The scope of preventive dentistry is constantly expanding and can be as far reaching as a professional's imagination, sense of responsibility and efforts. Dentists have been recognized as 'ideally positioned to counsel against the use of tobacco products.' They can relay specific information concerning the oral ill effects of tobacco use. Dentist should integrate tobacco use, prevention and cessation services into their routine and daily practice²¹ for the following reasons:

1. Dentists are especially concerned about the adverse effects of tobacco in the oropharyngeal region of the body.

2. They have easy access to children, youth and their caregivers, thus providing opportunities to influence individuals to avoid all together, postpone initiation or quit using tobacco before they become dependent.

3. They often have more time with patients than many other clinicians, providing opportunities to integrate education and intervention methods into practice.

4. They often treat women of childbearing age, thus are able to inform such patients about the potential harm to their babies from tobacco use.

5. They can build their patient's interest in discontinuing tobacco use by showing actual tobacco effects in the mouth.

Dentists in many parts of the world have a positive attitude about intervening for their adolescent patients. The majority of them consider smoking cessation and prevention for adolescents as part of their responsibility.²² Most dentists do not counsel children to prevent tobacco use due to lack of confidence and doubt about the effectiveness of their intervention efforts.^{22,23}

Barriers to tobacco cessation counseling

Numerous barriers have been reported for the limited involvement of dentists in tobacco cessation programs for youth.²²⁻²⁵ Some of them are lack of time, lack of reimbursement or incentives, resistance from the patients or their parents, lack of skills, lack of patient

education materials, and perception of poor effectiveness and fear that giving unwanted tobacco cessation counseling may upset the dentist-patient relationship.

The lack of formal training at the graduate level translating into lack of confidence is an important barrier that hinders large-scale involvement of dentists. Dental colleges need to incorporate into their curricula not just didactic instruction on the oral health impact of tobacco use, but relevant counseling techniques and training in pharmacotherapy.

Brief interventions

Brief interventions typically involve an assessment of tobacco use, dependence, and motivation (Table 2) to quit; advice on the benefits and methods of quitting; and assistance with quitting, including referrals to other treatment modalities. Behavioral interventions for tobacco use conducted by dentists in the clinic and community setting may increase tobacco abstinence rates among smokeless tobacco users.²⁶

The '5 A's (ask, advice, access, assist, and arrange) is a brief intervention method, used to guide the dentist in tobacco cessation counseling. It is important to include some sort of intervention to bring behavior change, in cases where the adolescent wishes to quit tobacco.²⁸ Ask every adolescent a simple question about current tobacco use and document all tobacco users at every visit. Once a tobacco user is identified, assess willingness

to make a quit attempt. The dentist should urge every tobacco user in a clear, strong, non-judgmental, and personalized manner to quit. The dentist can assist tobacco users by helping them set a quit date, referring them to a telephone counseling service, cessation group or intensive cessation program prescribing pharmacotherapy, and providing educational materials about tobacco cessation. Follow-up contact to support and guide a patient's quit attempt should be arranged otherwise, users may slip back to earlier stages of change.

Pharmacotherapy

There are two classes of drugs for treatment of tobacco dependence: nicotine replacement therapy (NRT) and non-nicotine medication, sustained release of antidepressants like bupropion.

While intensive therapy is not in the realm of dentists providing brief interventions but NRT holds plenty of promise. Even though these methods may seem exclusive of each other, the existing data suggest that a combination of the two is often essential to achieve good success rates.²⁹ Normally these services will lie outside the dental practice although some trained dental teams will be able to provide these services. Adolescent tobacco users are different from adult users in that their motivation to stop smoking tends to be more unstable. It is sensible, therefore, to check that they are fully committed to trying to stop smoking permanently before offering

Table 2. Motivating factors for adolescents to quit tobacco^{24, 27}

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| <ol style="list-style-type: none"> 1. It is important to note that adolescents consistently rank physical attractiveness, dental concerns, and esthetics as greatly important. 2. Relating tobacco to short-term adverse effects such as staining of teeth, halitosis, loss of taste along with long term health effects such as cardiovascular or lung diseases. 3. Highlighting role models abstaining from tobacco use and making the dental clinic adopt a 'no tobacco policy' can also be used. 4. Persistent, supportive and sympathetic nature of dentist. |
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them NRT and to attempt to establish that they are dependent.³⁰

Self help

The self-help, non-interactive approach includes minimal interventions that do not require responses from the adolescent and are delivered through written or audio-visual materials or on a computer to motivate them to quit the habit.

CONCLUSION

Though we do not fully understand all the factors that contribute to onset of tobacco use, which leads to addiction and eventual adverse health outcomes, we do need to understand better the patterns of use and how the determinants of initiation interact. The argument for tobacco abuse among adolescents is based on the observation that, if it does not start during adolescence, it is unlikely ever to occur and the probability of cessation among adults is inversely related to age of initiation.

We, the dentists, must take the responsibility of providing tobacco cessation services and encourage non-users to remain tobacco free. Admittedly, there are several barriers in this process, both real and perceived, which should be addressed with further research. Screening for tobacco use, interventions, referring young users to additional resources for cessation, and establishing a follow-up system that will track their progress should be made mandatory. Brief advice from a dentist for adolescents is cost-effective and has a potentially large reach.

Success in relation to cessation does not only mean that more number of users have quit, but it also includes educating the masses, so that the number taking to this habit afresh will also reduce. We as oral health professionals should make efforts towards a 'tobacco free society' for the benefit of mankind.

REFERENCES

1. Page RM, Danielson M. Multi-country, cross-national comparison of youth tobacco use: findings from global school-based health surveys. *Addictive Behav* 2011; 36:470-8.
2. Gallagher JE, Alajbeg I, et al. Public health aspects of tobacco control revisited. *Int Dent J* 2010; 60:31-49.
3. Guilbert JJ. *The World Health Report 2002 – Reducing Risks, Promoting Healthy Life. Educ Health (Abingdon)* 2003; 16:230.
4. Available at: http://www.africatobaccocontrol.org/en/images/resource_library/GYAT%20survey.pdf. Accessed on 23 Nov 2011.
5. Shafey O, Eriksen M, et al. *The Tobacco Atlas* 3rd ed. Atlanta, GA: Bookhouse Group for the American Cancer Society 2009.
6. Web document. Available at: <http://www.who.int/topics/tobacco/en> (Accessed on 22.4.2010).
7. George A, Varghese C, et al. Use of tobacco and alcoholic beverages by children and teenagers in a low-income coastal community in south India. *J Cancer Educ* 1994; 9(2):111-3.
8. Kapoor SK, Anand K, et al. Prevalence of Tobacco Use among School and College Going Adolescents of Haryana. *Indian J Paediatr* 1995; 62:461-466.
9. Web document. Available at: http://www.ehd.org/health_tobacco_14.php. Accessed on 15 September 2010.
10. Web document. Available at: http://mohfw.nic.in/WriteReadData/1892s/911379183TobaccocontroinIndia_10Dec04.pdf. Accessed on 23 Nov 2011.
11. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2669568/>. Accessed on 23 Nov 2011.
12. Available at: <http://bmj.com/cgi/reprint/323/7326/1394.pdf>. Accessed on 23 Nov 2011.
13. Vaidya SG *Young tobacco users*. *World Health* 1995; 48: 30.
14. Warren CW, Riley L, et al. Tobacco use in youth: a surveillance report from the GYTS Project. *Bulletin of WHO* 2000; 78: 868-76.
15. Available at: <http://tobaccocontrol.bmj.com/content/7/4/409.full.pdf>. Accessed on 23 Nov 2011.

16. Sinha DN, Reddy KS, Rahman, et al. Linking GYTS data to the WHO FCTC: The case for India. *Indian J of Public Health* 2006; 50: 76-89.
17. Available at: <http://tobaccocontrol.bmj.com/content/11/3/228.full>. Accessed on 23 Nov 2011.
18. Available at: <http://tobaccocontrol.bmj.com/content/9/3/313.full.pdf>. Accessed on 23 Nov 2011.
19. Barker D. Reasons for tobacco use and symptoms of nicotine withdrawal among adolescent and young adult tobacco users - United States, 1993. *MMWR Morb Mortal Wkly Rep* 1994; 43:745-50.
20. Hurt RD, Croghan GA, et al. Nicotine patch therapy in 101 adolescent smokers. *Arch Pediatr Adolesc Med* 2000; 154:31-7.
21. Available at: http://www.pfcac.org/documents/Oral_Health.pdf. Accessed on 11 Dec 2011
22. Wyne AH, Chohan AN, et al. Attitudes of general dentists about smoking cessation and prevention in child and adolescent patients in Riyadh, Saudi Arabia. *J Contemp Dent Pract* 2006; 1:35-43.
23. Kast KR, Berg R, Lezotte D, et al. Colorado dental practitioners' attitudes and practices regarding tobacco-use prevention activities for 8-through 12-year-old patients. *J Am Dent Assoc* 2008; 139: 467-75.
24. Goodman HS, Vargas CM, et al. General and pediatric dentists' attitudes regarding tobacco use prevention and cessation in their child and adolescent patients. *Public Health and the Environment. APHA* 2004: 6-10.
25. Beaglehole RH. The Role of Oral Health Professionals in Tobacco Control in OECD Countries: Policies and Initiatives. *Master's Thesis* University College London, 2003.
26. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005084.pub2/pdf> Accessed on 11 Dec 2011
27. Johnson JG, Cohen P, Pine DS, et al. Association between cigarette smoking and anxiety disorders during adolescence and early adulthood. *JAMA* 2000; 284: 2348-51.
28. Available at: <http://www.ctri.wisc.edu/HC.Providers/Guideline%20Training%20Manual.pdf>. Accessed on 11 Dec 2011
29. Mallin R. Smoking cessation: integration of behavioral and drug therapies. *Am Fam Physician* 2002; 65:1107-14.
30. Available at : <http://www.ashaust.org.au/pdfs/NRTguide0702.pdf>. Accessed on 11 Dec 2011.