

COMMENTARY

Role of Dental Institutions in Tobacco Cessation in India: Current Status and Future Prospects

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Abstract

Tobacco abuse is a major preventable cause of premature death and disease, including various cancers. The Global Adult Tobacco Survey India (GATS) 2009-10 revealed that more than one-third of adults use tobacco in one form or the other. Nearly two in five smokers and smokeless tobacco users made attempts to quit the habit in the past 12 months. Tobacco dependence is a chronic condition characterized by susceptibility of relapse over years. It can be well handled by sustained professional support from health care providers mainly through behavioral counseling and pharmacotherapy. Dental professionals can play a pivotal role in diagnosing and effectively managing tobacco dependence. Dental Institutions have rapidly grown in last two decades across the country and so has the curriculum been adapted to improve student competencies to accommodate changing disease patterns and technological advances, but not in regard to tobacco cessation. Untapped dental manpower like undergraduates, dental hygienists and other paramedical staff need effective training to be more penetrative. The present review paper explores the potential role of dental training institutions and recommends various approaches to counter public health jeopardy of tobacco related diseases.

Keywords: Tobacco - tobacco cessation - dental surgeon - dental institution - Indian context

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Introduction

Tobacco abuse and its hostile effects are known medical, dental and social concerns of global significance. Smoke and Smokeless form of Tobacco have become steady companion of today's youth in India. The Global Adult Tobacco Survey, India 2009-10 revealed startling facts, where there was an evident change in pattern of tobacco usage from Smoke form (14%) to Smokeless form of Tobacco (25.9%), It was also noticed that average age for initiation of tobacco use was 17.8 years with 25.8% of females starting tobacco use before the age of 15. Five in ten current smokers (46.6%) and users of smokeless tobacco (45.2%) planned to quit or at least thought of quitting (GATS, 2010).

Tobacco use is a global epidemic that kills 5.4 million people annually, tragically, more than 80% of those deaths occurs in the developing world (Jiloha, 2008; WHO, 2008).

Tobacco related mortality in India alone is among the highest in the world, with about 700,000 annual deaths attributable to smoking alone (Gajalakshmi, 2003). Annual Oral Cancer incidence has been estimated to be as high to 10 per 100,000 among males in Indian subcontinent

(More et al., 2000). India's tobacco problem is unique in its own way, due to its acceptance both culturally and traditionally (Sahoo et al., 2010).

Tobacco abuse cessation and prevention is an essential strategy to reduce tobacco related mortality and morbidity, as the lack of which may result in an additional 160 million global deaths amongst smokers by 2050. Capacity building strategies for screening, counseling and strengthening existing health care facilities is the need of the hour (Government of India, Ministry of health and family welfare, 2005).

There are many barriers for tobacco cessation and effective prevention like lack of knowledge of health effects of tobacco use (Stigler et al., 2009), deeply ingrained cultural habits (Kumar et al., 2005) and lack of tobacco cessation advice and support (Singh et al., 2005). Since, there is weighty evidence that tobacco abuse has a considerable influence on oral health ranging from harmless staining of teeth/restorations/prosthesis to serious life threatening diseases such as oral cancer. As part of the healthcare system dentists have an obvious interest and important role in preventing the harmful effects of tobacco abuse on human tissues in general and oral tissues in particular.

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Among the various health professionals, dentists have probably the greatest access to apparently healthy tobacco users in the healthcare system. Even in the absence of tobacco-related diseases in the mouth, the dentist can easily recognize patient's tobacco status. This fact renders dentists a favourable position in connection with tobacco intervention by pursuing more formal training in tobacco cessation counselling be as much a part of their job as plaque control and dietary advice. Evidence shows that clinical interventions during dental care are as effective as in other healthcare settings (World Health Organization, 2010). The potential of using dental clinics to promote tobacco cessation is largely realized but is ineffective due to absence of a structured approach. They largely remain untapped resources for providing advice and brief counseling to current tobacco users.

Dental institutions in India have not contributed enough at a national stage in tobacco control. Most efforts are restricted at the institutional level with respect to certain departments, which almost lack follow up and systematic data collection of the patients. There remains still a wide gap in both training and propagation of other tobacco control measures at an institutional level. The present review paper tries to understand the role of dental institutions and provides future directives for these organized establishments to improvise and improve their contribution in controlling this public health problem.

Methodology

The present review on role of dental institutions in tobacco cessation across India is based on compilation of the pertinent tobacco related literature.

Available studies, scientific papers, reports and other primary and secondary sources of information since 1995-2011 were reviewed to identify the role of health professionals, dental institutions and dental education in tobacco cessation. Internet based research was extensively used to retrieve the relevant literature (Health related information dissemination among youth: Hriday, 2010).

Role of Health Professionals

Tobacco dependence is a chronic condition that often requires repeated intervention. However effective treatments exist that can produce long term or even permanent abstinence (Fiore et al., 2000; Jiloha, 2008; World Health Organization, 2010). Several studies have shown that counseling from a health professional is an effective method of helping patients quit and efficacy of smoking cessation advice (Goldstein et al., 1998; Kottke et al., 1998; Allard, 2000; Eckert et al., 2001; McCarty et al 2001).

The majority of Health Care Providers Cessation enquired and recorded patients smoking status on the medical chart, although these practices vary by patient's age, attitude, gender, new patient visits and professionals who have been in practice for fewer years (Gorin et al., 2004).

The Global Adult Tobacco Survey, India 2009-10 revealed that among smokers and users of smokeless

tobacco who visited a health care provider, 46.3% of smokers and 26.7% of users of smokeless tobacco were advised to quit (GATS, 2009; 2010).

In a survey on attitudes of nurses towards tobacco advice, two thirds of them believed that it is their moral as well as professional obligation to provide cessation advice (McCarty et al., 2001). Physicians and nurse-midwives have reportedly higher counseling efficacy and quit rates as compared to dentist and dental hygienist (Secker-Walker et al., 1994).

Some of the barriers observed by health professionals were time, greater perceived complexity of cessation protocol, their confidence in employing various behavioral management techniques, being pessimistic about patient's ability to quit, provider tobacco habits and strength of provider-patient relationship (Pollak et al., 2001; Bolman et al., 2002). Misconceptions held by doctors can also influence intervention. In a study conducted in Kerala, about one third of the doctors believed that smoking was harmful to the health, only if the number of cigarettes smoked is 6 or greater (Thankappan et al., 2009).

Current Scenario of Tobacco Control and Cessation Training in India

In order to tackle the epidemic of tobacco in India the Government of India has taken proactive steps including adjusting and adapting the Framework Convention of Tobacco Control. In order to tackle the epidemic of tobacco in India the Government of India has taken proactive steps including adjusting and adapting the Framework Convention of Tobacco Control (FCTC) and enacted the "Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce Production, Supply and Distribution)" Act as a multi measure law from May 1st 2004 (Government of India, 2010).

The National Tobacco Control Program (NTCP) launched in 2007-08 in the 11th five year plan (2007-12) intends to set up of National Regulatory Authority (NRA), State and District Tobacco Control Program, Anti Tobacco Public Awareness Campaigns Establishment of tobacco testing laboratories, Prohibition of smoking in public places, Prohibition of advertisement, sponsorship and promotion of tobacco products, Prohibition of sale of tobacco products near educational institutions, Regulation of health warning in tobacco products packs. In the pilot phase, tobacco control units were established in 18 districts in 9 states, in 2007-08 which was to be expanded to 12 more states (Government of India, 2007).

In 2002, the World Health Organization (WHO) in collaboration with Ministry of Health and Family Welfare, Government of India initially opened 13 Tobacco Cessation Clinics later expanded to 19 across the country. The fourteen tobacco cessation clinics (TCC) were set up in various departments like psychiatry (3), cancer (5), surgical (2), cardiology (1), chest diseases (1) as well as in a general hospital setting (1) and nongovernment organizational setting (1). The TCCs were subsequently expanded to five more Regional Cancer Centres (RCC) in 2005 (Vijayan and Raj, 2005; WHO, 2009; Murthy and

Sahoo, 2010; Varghese, 2012).

India, a remarkably large country with diverse cultural facets, will not only need strong national policy but also need substantial group of well trained professionals for its implementation. Many capacity building initiatives have been initiated excepting a few at national level. (Samet and Wipfli, 2009) Tobacco cessation activities need to be up-scaled, and the public better informed of the availability and relevance of such interventions. Tobacco use among youth, women, rural populations and economically underprivileged need to be more actively targeted (Varghese, 2012).

There are a few known certified programs that are provided, one by Directorate of Distance Education Annamalai University, Tamilnadu, post graduate diploma program in health sciences (Tobacco Control) (Annamalai University, 2011). The Public Health Foundation of India (PHFI), a public private organization in collaboration with John Hopkins Bloomberg School of Public Health and University of Southern California, USA has introduced six month short term courses on tobacco control for health professionals, administrators and law enforcers and a one year diploma program on health promotion with special emphasis on tobacco control in a distance learning mode through e-learning (PHFI, 2011).

The Tobacco Cessation Centre under Centre for Addiction Medicine of the National Institute of Mental Health and Neurosciences (NIMHANS) Bangalore offers a one month orientation course for health professionals in substance abuse treatment, which also incorporates tobacco and related issues (NIMHANS, 2011).

The Indian Dental Association (IDA) has been resourceful and taken up the initiative of training dental professionals and establishing network tobacco cessation clinics in collaboration with existing dental clinics across the country, but the efforts are still in their early stages. They have launched 115 Tobacco Intervention Initiative (TII) centers across 16 states in India over the last one year and plan to increase this number to 5,000 by 2013. These centers are mostly run by private dental practitioners who are trained through a one day training program by the Association in tobacco intervention (Indian Dental Association, 2011).

Most of these programs focus on theoretical component of cessation skills and competency development, but lack actual variations of clinical based settings. There is as such no documented evidence on the effectiveness of these programs as they are in their initial stages of execution, but there is an urgent need for more such programs, but which should have an ideal mix of theoretical knowledge and clinical competency which can be evaluated through written and performance or clinical based assessment.

Moreover to establish effective tobacco cessation services in diverse health settings with optimal use of existing infrastructure and minimal support is possible if adequate support and training is provided. It should also be realized that follow-up is a very important component of care to ensure better outcome. There is a need to build awareness regarding the availability and benefits of tobacco cessation services along with educating the community about the benefits of tobacco cessation

interventions is likely to improve retention in tobacco cessation programs (Varghese, 2012).

Dental Education in India

Dental education in India provides training at undergraduate, post graduate, and super specialization levels. Dental Council of India is a statutory body incorporated under an Act of Parliament viz, The Dentist Act, 1948 (XVI of 1948) to regulate the Dental Education and the profession of Dentistry throughout India (Dental Council of India, 2007).

The first degree, Bachelor in Dental Surgery is a four year program followed by one year internship has been revised to a five year training program. The post graduate programs are of 3 years duration and provided in 9 different dental specialties (Dental Council of India, 2008). The other programs available are two year diploma in Dental Laboratory Technology and Dental Hygiene.

There has been a dramatic growth in dental institutions in last 5 years from 185 to the present 297 Dental Institutions and 116,828 registered dental surgeons in the country. These institutions today offer around 24,570 seats for the Bachelor in Dental Surgery program, 4595 seats in Post graduate programs in different specialties and around 800 seats in Dental Hygiene and 1000 seats in Dental Laboratory Technology (Mahal and Shah, 2004; Dental Council of India, 2011).

Dental Education and Tobacco Cessation

Over the period of years and with increasing burden of tobacco related disease the tobacco curriculum content has increased. Dental and Dental hygiene students have shown positive perception and attitudes towards professional intervention. Working together, can play an important role in preventing adverse health effects and also reduce their public health impact (Walsh and Ellison, 2005).

Tobacco use cessation and prevention is associated with many oral diseases and affects treatment outcomes. Consequently, helping tobacco users to quit has become a part of both the responsibility of oral health professionals and the general practice of dentistry (Ramseier et al., 2010).

Dental Professionals can be effective in treating tobacco use and dependence, the identification; documentation and treatment of tobacco users needs to become a routine practice in every dental institutions and clinics (Christen 2001; Tomar, 2001; Riebel, 2003; Rikard-Bell et al., 2003; Chaly, 2007; Davis, 2010). But evidence has shown that only few dentists advocated tobacco cessation practices and further fewer maintain records and pursue with follow ups (Sahoo et al 2010).

Although worldwide dental education organizations have policies encouraging their members to provide tobacco cessation services to their patients, there are no national standards for tobacco cessation curriculum in US dental schools (Gordon et al 2009).

American Dental Education Association (ADEA) conducted a 'Tobacco Control Project in 2001' covering fifty four dental schools in United States. Forty five of the

fifty four schools surveyed include tobacco prevention in their curricula and forty four include cessation. Furthermore forty one schools provided materials to their students on tobacco control, use, prevention and cessation. Many schools reported to have evaluated the students undergoing the tobacco program/course using written examinations, group papers, presentations to clinical assessment. (Weaver et al 2002)

Evidence from a 10 year follow up study from European dental schools indicates that special emphasis should be given to tobacco its etiology in oral diseases, control policy in dental institutions and clinical practice (McCartan and Shanley, 2005).

In a survey of a Chinese dental school, only 12% of respondents had received any formal training. There was wide variation in the levels of training recall in the tobacco cessation curriculum and nearly 85.5% were taught to record a tobacco use history in patient's notes (Tao et al., 2008).

In a cross sectional survey regarding tobacco control in six dental schools of Bangladesh, only 12.9% recalled any specific instructions during the curriculum on approaches to tobacco cessation and almost 91.9% felt that there was an immediate need for tobacco cessation training (Chowdhury et al., 2010). Dental students and Dentists have shown a positive attitude towards tobacco cessation activities during their practice (Sahoo et al., 2010; Binnal et al., 2012).

Dental students associated barriers like patients not being interested, lack of awareness among patients and fear of withdrawal symptoms among their patients towards tobacco cessation (Binnal et al., 2012).

The National Health Survey, Health Development Agency reported the extent and nature of training, manpower, accreditation and resources on tobacco related issues and smoking cessation in dental curricula at undergraduate and post graduate levels in all dental schools in Great Britain. Sixteen out of the eighteen schools stated that teaching on tobacco and oral health was included in teaching module, but only two out the 16 delivered it as a specific module and the rest as a part of other general courses. Periodontology and Oral pathology, Dental public health and Oral surgery were the most common course headings under which it was taught. Fewer than half covered smoking cessation within undergraduate/post graduate training as lectures, chair side clinical teaching and practical workshops. Some of them used in-house staff, while others invited guest speakers and only one school appointed a full time smoking cessation coordinator (NHS, 2003).

Dental education in India at an undergraduate level mainly focuses to provide curative care with a strong curricular emphasis on knowledge and technical skills in diagnosis and treatment.

The Department of Oral Medicine and Radiology in most dental institutions in India are involved in oral health patient screening in general with history taking in relation to tobacco use. Mostly those individuals with clinical manifestations are counseled and advised medications, but there is barely any published evidence of follow up with abstinence (Pai and Prasad, 2012).

The Department of Periodontics is involved with management of periodontal problems which also includes tobacco users. They hold a unique position which goes underutilized, as most of the patients resume habits post treatment, even after being informed.

The Department of Public Health Dentistry is also involved in health promotion through anti-tobacco campaigns and cessation programs which are organized in schools, colleges and workplaces. They hold the key in sensitizing masses through their strong outreach component.

There is increasing evidence that the success of any tobacco dependence treatment strategy or effort cannot work in isolation and would require a multidisciplinary approach at different levels like health promotion and education, clinical training and curative care (Fiore et al., 2000) Most of the clinical time available in different specialties is more or less utilized in diagnosis and treatment. This overall gap provides an ideal platform, that these interactions can be transformed into "teachable moments" to not only train future dental undergraduates in brief preventive strategies like tobacco use prevention and cessation but also provides more effective, evidence based cessation interventions.

The need for inclusion of comprehensive tobacco control education/training for dental hygienists continues to be stressed in publications addressing cessation services (Ramseier et al., 2006). They can be trained to develop enhanced skills in health promotion, disease prevention, health education, and behavioral motivation that would allow them to provide effective tobacco use cessation services. Currently in India around 800 Dental hygienists from 60 dental institutions across India enter annually into clinical practice after a two year training program. But there is still an acute shortage of dental auxiliaries as most of them remain attached to clinical practice under supervision and few remain affiliated to institutions (Tandon, 2004). There lies a tremendous scope to revise the curriculum and reorient the services in a more empathic and systematic manner, which is the need of the hour.

In the recent past there have been many tobacco cessation clinics established in dental institutions in various departments, but none have been either recognized and accredited. Moreover there are guidelines established by the Dental Council of India for initiating tobacco cessation clinics.

Future Direction and Scope of Tobacco Cessation Clinics across Dental Institutions in India

In a rapidly developing country like India, where the growth of professional health care provider is bound to happen due to steady growth in population and ever increasing burden of disease. Dental Institutions and Hospitals, both Government and Private, need to rethink and reorient their strategies from expert indoor service providers to reaching out through innovative patient centered clinical programs. The multifaceted tobacco problem in our country needs to be tackled in innovative as well as using sustainable methods. The various strategies

for the future of tobacco control in dental institutions would envisage many of these strategies:

Establishing a dedicated Tobacco Cessation Clinic (Aquilino and Lowe, 2004; Murthy and Sahoo, 2010)

Establishing a Tobacco Cessation clinic should be made mandatory in Dental Institutions with adequate professional human resource. This effort would mean to decentralize the cessation activities from routine clinical procedures from various dental departments. The dedicated group of professionals should include clinical psychologist, medical social worker and team of dental surgeons, all with adequate experience in tobacco de-addiction. This clinic will act as platform to perform individual and group counseling, community based awareness campaigns, academic training of undergraduates and postgraduate utilizing various learning methods and research in various fields of health promotion and tobacco control.

Training of Dental Faculty and Practitioners (Davis et al., 2010)

The implementation of tobacco use prevention and cessation in dental curriculum would be a failure if the system lacks dental faculty, who are ready to participate, accept personal responsibility and remain committed to the cause. These guidelines of the training program should be drafted by the Dental Council of India. Organizing these programs would require funding from the institutions to organize faculty development programs and develop interdisciplinary teams. Moreover, the dental practitioners should also be encouraged to participate in mandatory continuing education programs on regular basis.

Financial incentives and fees for tobacco cessation services in dental institutions (Hamilton et al., 2013)

Financial incentives may improve the performance of health care professionals in rendering tobacco cessation services and may boost the provision of cessation advice and referrals. Moreover associating a certain amount of fees for the services rendered to the patients might demonstrate some amount of seriousness and also motivate the patient to complete course of treatment. Though currently there is not sufficient evidence to show that financial incentives both for health professionals and patients leads to reductions in quitting rates and achieve long term abstinence.

Integrate comprehensive Tobacco Cessation Education into dental curriculum (Rikard-Bell et al., 2003; Chaly, 2007; Davis et al., 2010)

It should be developed and integrated in a more sensitive, practical and applicable manner into the dental teaching curriculum. The training should allow the dental undergraduates to identify, help in preparing a tailor made quit plan and supervise with adequate follow up. This approach would augment their confidence, perceived effectiveness and increases rates of asking, advising, providing self help materials and assisting. Moreover, the competencies gained should be assessed by performance

or clinical based assessment, which can be carried out either through written tests, video observations and assessments. The curriculum should intend to provide knowledge through lectures, problem based learning, clinical competencies through pre-clinical and clinical instructions, peer mentoring and patient care. The students should be encouraged to understand the need for building rapport, maintaining log books or diaries and observing and assessing videos.

Role of Dental Hygienist and Other Dental auxiliaries in Tobacco Cessation (Ramseier et al., 2006; Davis, 2010; Davis et al., 2010; Pau et al 2011)

Dental Hygienist, one of the most underutilized human resources in dentistry in this region needs a revamp in its approach. The curricula should be re-structured with special emphasis on providing chair side assistance and counseling to patients identified with tobacco usage and should be assessed at the end of the program. Training and evolving new group of dental auxiliaries like Dental nurses and Dental health educators can be help in extending the reach of such programs at a community level.

Developing Strong Institutional Policy and Tobacco Free Campus

Creating a Tobacco Free campus and developing an institutional policy with added restriction on sale of tobacco products and regular monitoring of the system. The policy should integrate strong in-house information dissemination strategies by displaying posters and signage's. Any sale of tobacco products around the institutional premises should be banned.

Dental Institutions can develop Tobacco Quit lines (Miguez et al., 2002; Aquilino and Lowe, 2004)

Tobacco quit lines are novel innovations to tackle the problem and there is a dearth of such services in the country. Hence dedicated quit lines with trained professionals should be sanctioned by the government in effort to curb this problem.

Develop Scientifically sound, Socially and culturally relevant IEC material

Every institution should contribute in a positive manner in developing Information Education Communication (IEC) material which is relevant to regional needs, language and culturally acceptable. These can be published by the Dental Council of India and circulated amongst the institutions. Innovative ways of reaching out to the community have to developed like organizing road shows, street plays, internet blogs and developing dedicated community radio stations etc.

Integrate and make mandatory Tobacco use cessation and prevention as part of continuing dental education programs (Ramseier et al., 2010)

To ensure that the delivery of effective tobacco use cessation and prevention becomes part of standard care, continuing education courses and updates should be implemented and offered to all oral health professionals

on a regular basis.

Advertise the benefits of Tobacco Cessation and promote Facilities and Quit lines (Murthy and Sahoo, 2010)

The institution should allocate an annual budget for the clinic where, of which an important component to allotted to promotion of tobacco cessation and promotion of the facilities.

Promote Nicotine Replacement Therapy drugs over the counter (Aquilino and Lowe, 2004; Murthy and Sahoo, 2010)

The institutions should be permitted to support and promote sale of over the counter NRT products at subsidized rates. This improves the accessibility of these products to the patients and also provides a good platform for promotion of NRT therapy.

Stakeholders like Dental Council of India should create a separate board to coordinate various activities on tobacco control

They need to integrate with existing National programs like National Tobacco Control Program and collaborate with other dental associations which would advocate expanding the role of dental professionals in tobacco control initiatives (Johnson, 2004).

Reorientation of Dental Health Services in Rural areas

The dental health services are skewed and accessible in urban areas than in rural areas. The reorientation of the services with additional incentives for those practicing dental institutions would allow promote these services in an extensive manner in those inaccessible areas.

Community Based Cessation Programs- School/College programs

Dental Institutions can identify schools in their administrative block. They can sensitize and train school teachers and conduct regular health promotive programs for school children. They can develop sustainable innovative programs like exhibitions, health talks and develop role models.

Collaborate and develop practical strategies with Non-government agencies (Murthy and Sahoo, 2010)

Dental Institutions can identify Non-government agencies and work in association with them to promote tobacco control in various inaccessible regions and catchment areas. This can be achieved by repeated sensitization and brain storming sessions.

Conclusions

India's tobacco problem is unique and intricate in its own way and demands a lot of involvement from all fronts if it has to be controlled. The GATS India 2009-2010 recommends that tobacco control strategies need to mainstreamed with other national programs and also calls for greater involvement and investment from various stakeholders like ministries/departments, institutions, academic/public health institutions, civil society groups,

media, etc.

The Dental Institutions across the country do provide an ideal and sustainable foundation which collaborates to participate in the tobacco control measures in the country. In order to increase intervention effectiveness of tobacco cessation services, dental education system needs to expand both its didactic knowledge and clinical competencies, keeping in mind the various cultural, socio-economical and psychological factors that would influence directly or indirectly. Hence the stakeholders of dental education in India need to be more pragmatic on inclusion of tobacco use cessation and prevention in the curriculum more sensitively and develop socially and culturally acceptable program in the near future.

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