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Tobacco Control in Pediatric Dental Practices: A Survey of Practitioners

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Abstract

Purpose: The study purpose was to determine tobacco-related knowledge, attitudes, and practice behaviors of American Academy of Pediatric Dentistry (AAPD) members.

Methods: A 26-item survey was distributed to a national, random sample of 1,700 AAPD members. Frequencies, odds ratios and 95% confidence intervals assessed factors related to tobacco control behaviors.

Results: Of 1,700 questionnaires, 1,292 (82%) were returned and usable. Over 75% of respondents agreed that it is a pediatric dentist's responsibility to help patients who wish to stop using tobacco; only 142 (11%) had prior tobacco prevention/cessation training. Of those untrained, 905 (70%) were willing to be trained. Not knowing where to send patients for counseling and feeling ineffective with helping patients to stop their tobacco use were significant barriers reported by nearly half the respondents. Two hundred forty-five (19%) reported always/often asking their adolescent patients about tobacco use; 491 (38%) reported always/often advising known tobacco users to quit; and 284 (22%) reported always/often assisting with stopping tobacco use. Feeling well prepared to ask about tobacco was significantly associated with assisting tobacco users (odds ratio=8.9; 95% confidence interval=6.6-12).

Conclusion: Continuing education programs are needed to enhance the knowledge and skills of pediatric dentists to promote tobacco control behaviors.

Keywords

TOBACCO; DENTIST'S PRACTICE PATTERNS; ADOLESCENTS

Tobacco use is highly associated with oral malignancies, lung cancer deaths, periodontal disease, and cardiovascular disease.^{1,2} Every day in the United States, more than 4,000 youths younger than 18 years old try their first cigarette.³ The onset of smoking has been reported to occur in approximately 11% of children by the time they are 10 years old.⁴ Nationally, 22% of high school students smoke cigarettes.⁵ According to the US Centers for Disease Control and Prevention, 80% of addicted adult tobacco users started smoking during their teenage years.⁶ Adolescents tend to be more sensitive than adults to the rewarding effects of nicotine, making addiction more likely to happen during adolescence.⁷ It has been estimated that 65%-75% of adolescents will try smoking before they complete high school, more than one third will become daily smokers, and nearly one quarter will become nicotine dependent.⁸

Given the association between smoking in adolescence and resultant health problems in adulthood, initiation and maintenance of smoking during adolescence represent a genuine public health concern. In 1997, Kessler et al reported that adolescents are the gateway through which tobacco addiction enters the population.⁴

The pediatric dental office provides an excellent environment for applying the 2000 US Public Health Service Guidelines for the assessment and treatment of tobacco use and dependence.⁹ A large number of adolescents see their pediatric dentist each year. Thus, the pediatric dentist is well positioned to: 1) ask adolescent patients about tobacco use; 2) encourage nonusers to remain tobacco-free; advise users to quit; 3) assess readiness to quit; 4) assist with the quitting process; and 5) arrange for follow-up at future appointments. By doing so, pediatric dentists can play an important role in preventing initiation or promoting cessation of tobacco use among adolescents for whom they provide care. Surveys among health care professionals, however, indicate that dentists have one of the lowest intervention rates for prevention and treatment of tobacco use.⁵ Since 1997, no studies have been conducted to report on tobacco control-related knowledge, attitudes, and behaviors among US pediatric dentists.

Thus, this study's purpose was to conduct a 2006 survey of US pediatric dentists who were active members of AAPD to assess tobacco-related knowledge, attitudes, and behavior.

Methods

Study overview.

This study was approved by the Committee on Human Research at the University of California, San Francisco. To conduct this cross-sectional study, we first obtained from the American Academy of Pediatric Dentistry (AAPD) a randomly selected list of practicing US pediatric dentists. Subsequently, a study questionnaire, an informed consent cover letter, and a return-addressed stamped envelope were mailed to 1,700 randomly selected pediatric dentists from the randomized AAPD list. The cover letter explained the study's purpose, methods, risks, and potential benefits and provided information regarding the confidentiality of responses. The returned questionnaires were coded without personal identifiers, and hard copies were kept securely in a locked file.

Questionnaire development.

Prior to finalizing the questionnaire, we pilot tested it among a convenience sample of 20 practicing pediatric dentists (11 females, 9 males) in the eastern and South Bay areas of Northern California. Upon completion of the pilot questionnaire, each practitioner was interviewed to gain feedback on the acceptability of the questionnaire and on the feasibility of pediatric dentists completing and returning it. Based on this feedback, we refined or eliminated some of the questionnaire items.

Description of final questionnaire items.

The self-administered study questionnaire consisted of 26 items. It defined the adolescent age group as ranging from 11 to 17 years old and defined tobacco users as smokers (cigarettes, pipes, or cigars) or smokeless tobacco users (oral snuff or chewing tobacco). The questionnaire assessed practice-related demographics with the following items: 1) type of practice (solo, group, academic, hospital, public health, or military); 2) location (urban, suburban, or rural); and 3) number of adolescent vs total no. of patients seen per day. In addition, the questionnaire assessed:

1. whether tobacco use was allowed anywhere in the office by staff (“yes” or “no”) or by patients, parents, guardians, and/or caregivers (“yes” or “no”);
2. history and characteristics of pediatric dentists’ tobacco use (cigarettes, pipes, smokeless tobacco: “current daily,” “current occasional,” “former,” “experimented with,” and “never”);
3. methods employed to identify tobacco users;
4. the person in the office responsible for asking about tobacco use;
5. the frequency of performing specific behaviors in their practices to intervene with adolescent patients about tobacco use (13 behaviors with 4 levels ranging from “always” to “never”); and
6. barriers to providing tobacco cessation services (11 potential barriers with 3 levels: “not a barrier,” “somewhat of a barrier,” and “a strong barrier”).

The questionnaire also: 1) asked questions related to former training experience in tobacco use prevention and cessation strategies; 2) estimated the total number of training hours; 3) identified the manner in which training was received (continuing education [CE] course, organized study club, dental school curriculum, or other); 4) willingness to receive future training (“yes” or “no”); 5) preferred formats (CE courses, study club, or other); 6) and pediatric dentists’ level of perceived preparedness to advise patients to stop using tobacco and to assist with the quitting process (4 levels, ranging from “very well prepared” to “unprepared”). Knowledge of tobacco use by adolescents was assessed by 2 true/false questions. Eight questions asked about the pediatric dentist’s attitudes toward tobacco control (5 levels, ranging from “strongly agree” to “strongly disagree”). Finally, the questionnaire assessed demographic factors (age, ethnicity, gender, year in school) and year of graduation from residency.

Statistical analysis methods.

The data collected were analyzed by means, frequencies, odds ratios (OR), and confidence intervals (CI) to assess current tobacco-related knowledge, attitudes, and behaviors among US pediatric dentists. Epi Info (Centers for Disease Control, Atlanta, Ga) and Microsoft Excel 2003 (Microsoft Corp, Redmond, WA) with data validation rules were used to create data entry screens. ORs with 95% CIs estimated the relationship between feeling prepared and tobacco control activities. An OR with a 95% CI that does not include 1 was accepted as statistically significant.

Results

Of 1,700 questionnaires mailed, 1,410 were returned for an unadjusted response rate of 83%. Of these respondents, 118 were excluded (111 were not involved in patient care and 7 reported seeing no adolescents in their practices). Thus, 1,292 questionnaires, with an adjusted response of 82% (1,292/1582) were analyzed.

Description of overall sample.

The average age of respondents was 43 years. Over half of the respondents were male (63%). In addition, most of the respondents were Caucasian (66%), followed by Hispanic/Latino (17%), Asian/Pacific Islander (8%), African American (7%), Native American (2%), and other (<1%).

Two percent of the study sample currently smoked cigarettes and/or cigars, and only 1% smoked pipes or used smokeless tobacco. Interestingly, 15% of the respondents were former cigarette smokers and 26% were former cigar smokers.

Only 11% of the respondents had received formal training in tobacco-use prevention or cessation strategies. Of those who received training, most respondents obtained the instruction from their dental school curriculum (65%). Moreover, of those respondents who had not received training, 70% reported that they were willing to be trained.

Practice characteristics are described in Table 1. Most practices were located in a suburban setting. Over half of respondents worked in a group practice clinic. In a typical day, respondents saw an average of almost 32 patients. Of these patients, an average of 9 (29%) were adolescents. Nearly 100% of the responding practices had an office policy prohibiting tobacco use by patients, parents, and staff. The most frequently reported methods of identifying tobacco users included detecting tobacco odor and looking for oral symptoms in their patients (data not shown).

Knowledge.

Correct responses were generally low to the 2 true/false items assessing awareness of the tobacco-use problem among adolescents nationally. Only 36% of the respondents correctly answered true to the statement, "About 1 out of 3 US adolescents uses tobacco by age 18." Moreover, 26% of respondents correctly answered false to the statement, "Less than 1,000 adolescents in the United States become regular smokers every day." For both questions, approximately half of the respondents selected the "do not know" answer choice.

Attitude.

Table 2 shows the percentages of the respondents who felt prepared to ask about tobacco use, to advise tobacco users to quit, and to assist tobacco users with the quitting process. Well over 50% had positive attitudes, as measured by strongly agreeing or agreeing with positive statements related to the role of the pediatric dentist in tobacco control. For example, over 75% agreed that it is a pediatric dentist's responsibility to help patients who wish to stop using tobacco to accomplish this goal. Additionally, 85% agreed it is important for a pediatric dentist to ask adolescent patients about tobacco use.

Barriers.

Table 3 shows that significant barriers, perceived by pediatric dentists, to providing tobacco control services were not knowing what to say and not knowing where to send patients for cessation counseling.

Behaviors.

Regarding tobacco assessment and treatment behaviors, the respondents reported the following: 19% asked all adolescent patients about tobacco use; 13% reported they documented all adolescent patients' tobacco use status; 33% documented tobacco users in the chart; 21% encouraged nonusers to remain tobacco free; 15% had tobacco use prevention educational materials in the reception area; 38% advised known tobacco users to stop their tobacco use; 22% assisted adolescent patients with the quitting process by discussing strategies to quit; 13% provided educational self-help materials; 10% referred to cessation programs; 8% encouraged users to set a quit date; 6% followed up with those trying to quit; 2% recommended nicotine transdermal patches, and 3% recommended nicotine gum.

Correlates of tobacco control behaviors.

Table 4 shows the following statistically significant findings. Respondents who felt prepared to ask their patients about tobacco use were 30 times more likely to do so. In addition, respondents who felt prepared to ask their patients about tobacco use were 3 times more likely to advise them to stop and were nearly 9 times more likely to assist patients with tobacco cessation efforts.

Discussion

We surveyed US pediatric dentists' knowledge, attitudes, and behaviors related to tobacco control activities in their dental practices. Our 82% response rate was higher than the 44%, 61%, and 30% reported for other similar surveys in the literature, respectively.¹⁰⁻¹² Although our findings indicate low knowledge levels about general adolescent tobacco use, pediatric dentists held positive attitudes about intervening with their adolescent patients and nearly all had office policies that banned tobacco use by patients, parents, guardians, caregivers, and staff. In addition, pediatric dentists serve as role models by not using tobacco and urging staff members who use tobacco to stop.

Despite these positive attributes, however, fewer than half of pediatric dentists surveyed routinely performed tobacco control behaviors. Common barriers to doing so were related

to not knowing what to say and not knowing where to send patients for counseling. Thus, skills-based educational programs are needed. Our findings suggest that these programs include such components as: 1) a chart reminder system to increase the behavior of asking all adolescent patients if they use tobacco and of documenting tobacco use in the charts; 2) inclusion of a list of local referral sources for cessation assistance (eg, statewide telephone quitline information); 3) guidelines for cessation counseling; and 4) information on appropriate pharmaceutical products. Such courses could be offered as part of pediatric dental residency programs, at professional meetings, or as online continuing education programs. Periodic studies would be needed to assess the influence of these programs on practice over time. Since most pediatric dentists in our study were willing to undergo such training, it is reasonable to expect that educational programs on the treatment of tobacco use and dependence in pediatric dental settings would be well received.

Compared to the findings of a national survey conducted by Dolan and colleagues in 1997,¹⁰ however, our 2006 findings indicate an increase from 2% to 19% in tobacco-related “asking” behaviors and an increase from 9% to 22% in “assisting” behaviors among pediatric dentists. This increase may be explained by the adoption of a policy on tobacco use by the AAPD in 2000.¹³ These counseling rates, however, fall substantially below the US Department of Health and Human Services Healthy People 2010 goal to increase to at least 85% the proportion of dentists who advise cessation.¹⁴

In 1997, Dolan et al¹⁰ also reported in 1997 that 79% of pediatric dentists advised patients to quit, compared to our finding of 38% in 2006. This discrepancy may be explained by that the fact that Dolan and colleagues¹⁰ reported the percentage who indicated that they “ever” advised patients who use tobacco to quit, whereas we report the percentage of pediatric dentists who reported that they “always or often” advised patients who used tobacco to quit. Moreover, we surveyed more pediatric dentists (1,292) than Dolan and colleagues¹⁰ (586) and that may have also affected our results.

One limitation of our study is that our data are based on self-reported responses. Due to the feeling of obligation to provide these services as health care professionals, pediatric dentists may have overestimated their actual performance when reporting their tobacco-related activities. Moreover, since the study only included AAPD members, membership bias may be present in the sample. Pediatric dentists who join the AAPD may be more likely to perform tobacco cessation behaviors than those who are not members.

Conclusions

Based on this study’s results, the following conclusions can be made:

1. Tobacco cessation activities are not a routine part of the pediatric dental practice.
2. Training programs to enhance knowledge and skills related to treatment of tobacco use and dependence in pediatric dental settings are needed.
3. Pediatric dentists would be receptive to such training programs.

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Table 1.

PRACTICE CHARACTERISTICS OF 2006 STUDY SAMPLE OF US PEDIATRIC DENTISTS (N=1,292)

Practice characteristics	
Practice location	(%)
Suburban (population >2,500, but <300,000)	69
Urban (>300,000)	30
Rural (<2,500)	1
Practice type (%)	
Group	55
Solo	35
Other	10
Practice days per week (mean±SD)	3.7±1.0
Patients seen during a typical day (mean±SD)	31.9±12.7
No. of adolescents seen during a typical day (mean±SD)	9.3±5.8
Office tobacco policy	
No tobacco use by patients and parents	99
No tobacco use by staff	99
Responsible for asking about tobacco use (response options not mutually exclusive)	
Do not ask	54
Do ask (N=595)	46
<i>Pediatric dentist</i>	77
<i>Dental hygienist</i>	52
<i>Dental assistant</i>	36
<i>Health history form</i>	21
<i>No one person</i>	8
<i>Receptionist</i>	1

Table 2.

RESPONSES TO ATTITUDE ITEMS AMONG 2006 SAMPLE OF US PEDIATRIC DENTISTS (N=1,292)

Feel very well/well prepared to:	%
Ask about tobacco use	31
Advise users to quit	42
Assist users with quitting	10
Attitude items—strongly agreed/agreed that:	
It is a pediatric dentist’s responsibility to convince patients who use tobacco to stop	73
It is a pediatric dentist’s responsibility to help patients who wish to stop using tobacco to accomplish this	80
The pediatric dentist should set a good example by not Using tobacco	99
Most adolescents will not give up tobacco use even if their pediatric dentist tells them to	74
Most adolescent tobacco users have a hard time quitting because they are addicted to nicotine	25
Pediatric dentists should be more active than they have Been in speaking before lay groups about tobacco use	68
It is important for a pediatric dentist to ask adolescent patients about tobacco use	85
It is important for a pediatric dentist to encourage adolescent nonusers to remain tobacco free	85

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Table 3. REPORTED BARRIERS TO PROVIDING TOBACCO CONTROL SERVICES TO ADOLESCENT PATIENTS AMONG 2006 SAMPLE OF US PEDIATRIC DENTISTS

Barrier items	No barrier (%) [*]	Partial barrier (%)	Strong barrier (%)
Don't know what to say	30	23	47
Don't know where to send patients for counseling	37	17	45
Feel patients are resistant to cessation services	16	42	43
Don't feel like I can effectively help patients quit using tobacco	28	30	42
Most of my adolescent patients do not use tobacco	58	20	21
Lack of time	60	32	8
Have been unsuccessful in providing these services in past	71	22	7
Don't feel this is appropriate for a pediatric dentist	84	10	6
Lack of adequate reimbursement	36	60	4
Did not occur to me to provide these services	36	60	4
Don't have materials to hand out	27	70	2

* Percentages in each row may not total 100 due to rounding.

RELATIONSHIPS OF FEELING PREPARED TO ASK ABOUT TOBACCO USE WITH REPORTED TOBACCO CONTROL BEHAVIORS (N=1,292)

Table 4.

Behavior	%		Odds Ratio	95% Confidence Interval
	Prepared	Unprepared		
Ask	94	34	30	19-46
Advise	86	67	3.0	2.2-4.1
Assist	82	34	8.9	6.6-12