



Attitudes of pediatric dentists towards tobacco intervention for children and adolescents: a pilot survey

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Abstract

Purpose: The purpose of this study was to obtain pilot information concerning the attitudes of pediatric dentists regarding their role in tobacco intervention for children and adolescent patients.

Methods: A 1-page survey, which was adapted and pretested from a previous, comprehensive survey, was distributed to all registrants at the 2001 American Academy of Pediatric Dentistry Annual Meeting in Atlanta, Ga. Descriptive and exploratory multi-variable techniques were used to analyze the data.

Results: Of the 173 respondents, only 18% had ever received training in tobacco cessation counseling. Although most dentists agreed that they should play a role in tobacco intervention with their young patients, the majority was not comfortable with this task. Pediatric dentists with tobacco counseling training were more likely to accept their role in tobacco prevention and cessation efforts and were more confident in their ability to do so than were their counterparts. Pediatric dentists consider tobacco cessation an important role in their practices, but do not consider themselves well prepared to act on this responsibility.

Conclusions: The results of this pilot survey strongly suggest that a similar, national, comprehensive study should be conducted among pediatric dentists. (*Pediatr Dent.* 2003;25:53-60)

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Tobacco use among adolescents in the United States is a serious threat to public health. In 2000, the Surgeon General reported that 30% of high school senior girls and 33% of high school senior boys reported smoking within the past 30 days.¹ Each day, roughly 5,000 children and adolescents become daily smokers.² These data, coupled with the reality that approximately 80% of adult smokers initiate smoking before the age of 18, underscores the importance of tobacco intervention for adolescents prior to their initiation of smoking.³ Moreover, it has been determined that children in kindergarten are able to correctly identify a brand of cigarettes 95% of the time.⁴ Finally, some researchers report that smoking initiation occurs in about 11% of the population by age 10.⁵ Based on these facts, one goal of the Centers for Disease Control and Prevention is to prevent young people

from ever starting to smoke, as well as to promote quitting among young people that already smoke.⁶

The role of physicians in tobacco prevention and cessation has had a modest amount of effort and attention for years. The role of the dentist also has been explored in regard to tobacco intervention, but to a lesser extent. One study showed that, compared to other health care providers, dentists felt they had: (1) a limited role regarding tobacco intervention; (2) the least perceived skill in tobacco intervention; (3) the lowest provider priority for tobacco intervention; and (4) cited the lack of reimbursement more often than other types of providers as a reason for not providing tobacco intervention.⁷ These findings are consistent with other studies that showed dental providers infrequently inquire about use of tobacco products with their patients.⁸⁻¹⁰ One study looking at dental student attitudes found that students provided inconsistent tobacco counseling to their

Pediatric Dentist Pilot Tobacco Survey						
1.	To what extent do you think it is part of your role as a pediatric dentist to:	Not at all	Small extent	Moderate extent	Considerable extent	Great extent
	a. help your adolescent patients stop smoking?	1	2	3	4	5
	b. help prevent children/adolescents from starting to use tobacco products?	1	2	3	4	5
2.	How effective do you think smoking cessation counseling provided by a pediatric dentist can be in:	Not at all effective	A Little effective	Moderately effective	Quite effective	Very effective
	a. helping an adolescent stop smoking?	1	2	3	4	5
	b. helping children/adolescents abstain from using tobacco?	1	2	3	4	5
3.	How confident are you in your ability to:	Not at all confident	Not Very confident	Somewhat confident	Quite confident	Very confident
	a. Help your adolescent patients stop smoking?	1	2	3	4	5
	b. prevent children/adolescents from starting to use tobacco products?	1	2	3	4	5
	c. assess and treat nicotine dependence?	1	2	3	4	5
4.	Have you received formal training in counseling patients to stop smoking? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, was it: <input type="checkbox"/> within the past year <input type="checkbox"/> 2-5 years ago <input type="checkbox"/> 5+ years ago					
5.	Please describe your principle practice setting (please mark only one).					
	<input type="checkbox"/> Solo practice		<input type="checkbox"/> Dental School		<input type="checkbox"/> Other (please specify)	
	<input type="checkbox"/> Group of 2 or more		<input type="checkbox"/> Hospital		_____	
6.	Your gender? <input type="checkbox"/> Male <input type="checkbox"/> Female		7. Year of birth? 19_____			

Figure 1. Reproduction of the questionnaire used in the Pediatric Dentist Pilot Tobacco Survey, 2001.

patients and suggested there should be opportunities to develop comprehensive and consistent training in tobacco cessation at early stages of dental education.¹¹

Several studies have explored the role of pediatricians in tobacco assessment and intervention among adolescents. One study concluded that adolescents were likely to be honest when asked by pediatricians regarding their use of tobacco products.¹² Another study found that there was considerable opportunity available for pediatricians to promote tobacco cessation with adolescents in their practices. These findings highlight the opportunity and responsibility of both pediatricians and pediatric dentists to determine whether their patients are using or have ever used tobacco products.

Physicians also have been found to be more likely to provide tobacco cessation information to their adolescent patients if they feel comfortable with current techniques in tobacco cessation.¹³⁻¹⁴ Practicing physicians tend to be made more familiar about tobacco cessation techniques through continuing education courses and educational materials that teach practitioners to develop successful mechanisms in identifying current smokers, which then assists the provider in targeting high-risk individuals.¹⁴

The role of the dentist in preventing or reducing tobacco use among adolescents could be crucial to the campaign against tobacco. Tomar has suggested that adults are as likely to quit smoking when advised by their dentists as they are when advised by their physicians.⁹ Among dentists, pediatric dentists have been identified as least likely to inquire about their patient's tobacco use, provide tobacco cessation, or to take a course on tobacco cessation.⁸ Understanding a potential expanded role for pediatric dentists in prevention and

cessation of tobacco is invaluable due to the scarcity of programs by health care providers to target adolescent tobacco use and the obvious influential position they are in to counsel children on a wide range of health issues.¹⁴

Presently, the training of pediatric dentists does not include mandatory education in tobacco cessation and/or intervention.¹⁵ The information that is available to pediatric dentists in training includes information regarding smokeless tobacco use among children and adolescents but does not adequately address all tobacco products and the opportunity for cessation and intervention by pediatric dentists.¹⁶⁻¹⁷ This deficiency occurs even with the knowledge that tobacco use of any kind is detrimental to oral and general health.¹⁸

The purpose of this pilot survey was to determine the attitudes of pediatric dentists regarding their role in tobacco intervention and cessation among their patients. The results of this study will help determine the need for a larger, comprehensive survey among pediatric dentists and, ultimately, the need to develop, test and implement appropriate interventions.

Methods

Subjects

Data were collected from a convenience sample of pediatric dentists attending the American Academy of Pediatric Dentistry (AAPD) Annual Meeting in Atlanta, Ga, in May 2001. Survey questionnaires were returned by 173 of the 1642 pediatric dentists who attended the conference. Of the 173 respondents, 57% were male. Regarding age, 9% of the respondents were 30 years of age or less, 32% were 31 to 39, 29% were 40 to 49, 25% were 50 to 59, 4% were 60 to 69, and 1% were 70 or older. The majority of respondents (43%) reported practicing in a solo practice; 24% practiced in an office with 2 or more pediatric dentists; 17% taught in a dental school; 11% practiced in a hospital; and 5% reported "other" types of settings. Of the 173 pediatric dentists who responded, only 32 (18%) indicated that they had ever received some training in smoking cessation counseling. Of these, about a third indicated that their training occurred within the past year. Another third reported being trained 1 to 5 years ago. The final third had been trained 5 or more years ago.

Data collection

Questionnaires were included in the registration materials provided to all attendees at the conference. Questionnaires also were made available near the questionnaire drop boxes. The survey was accompanied by a letter instructing individuals to place their completed survey in one of the drop boxes at the meeting or to return them by mail. No names of respondents were requested and no traceable identifiers were on the survey questionnaires.

Instrument design

The pilot survey instrument was adapted from a previous, comprehensive survey used with pediatricians, with adjustments to the instrument to make it more suitable for pediatric dentists.¹⁹ The brief instrument used for this pilot survey consisted of 7 items which were Likert-like questions and 4 questions on background variables. The former questions were designed to briefly address pediatric dentists': (1) role perceptions in tobacco prevention and cessation activities; (2) perceptions about the effectiveness of their tobacco counseling; and (3) perceptions of their own efficacy in providing tobacco counseling (Figure 1). The survey instrument was pretested by 10 pediatric dentists to check for clarity of the questions, format and the

length of time required to complete it. Minor refinements were made to it subsequent to the pretest.

Measurement procedures

Given the exploratory nature of this study, a psychometric evaluation of the 7 attitudinal items was conducted using principal components and common-factor analysis techniques. This evaluation identified 2 attitudinal clusters underlying the interconnections among the 7 attitudinal items. On the first factor, the first 4 items in the questionnaire had rotated loadings of 0.76 or higher. On the second factor, the last 3 attitudinal items had loadings of 0.70 or higher. An oblique rotation of this factor matrix showed that the 2 factors had an overall correlation of 0.60.

Given the results of these analyses, several multi-item, factor-based indices were constructed. The first summary score was based on the first 4 items in the questionnaire that dealt with 2 aspects of expanded role conceptions for pediatric dentists and aspects of the perceived effectiveness of smoking cessation counseling in helping adolescents to stop smoking and in preventing children and adolescents from starting to use tobacco products. The second factor-based score was based on the first 2 confidence-in-tobacco-intervention-ability items. The third factor-based score was a 3-item index, which included respondents' scores on their ability to assess and treat nicotine dependence, in addition to the confidence items in the 2-item index. In creating each of these multi-item indices, the number of items to which respondents had provided an answer (coded 1 to 5, with a high score indicating a positive attitude) first were summed and then divided by the number of items for which the respondent had provided usable data. Creating this index put respondents on the same metric that had been used for each individual item. To simplify the presentation of the attitudinal data, each individual item score and each index score was recoded, with the 2 lowest scores (negative responses) combined and the 2 highest scores (positive responses) combined together.

An evaluation of the internal consistency reliability of these 3 multi-item indices produced Cronbach's alpha values of 0.84 for the 4-item index of the attitude toward an expanded role for pediatric dentists in the area of tobacco interventions, for the 2-item index of confidence in personal abilities to conduct tobacco interventions and for the 3-item index of such confidence.

Analysis procedures

The recoded individual items and multi-item factor-based indices were first analyzed using univariate and bivariate tabulation techniques. Then, a series of unadjusted and adjusted logistic analyses were carried out on selected attitudinal clusters to explore the effect on them of related background variables (gender, age, practice setting, and training in tobacco counseling).²⁰

Results

Expanded role concept for pediatric dentists

Figure 2 shows that overall, a slight majority of respondents (56%) thought to a “considerable extent” or “great extent” that, ideally, part of their job as a pediatric dentist was to assist adolescent patients to stop smoking. A clear majority (70%) thought to a “considerable extent” or “great extent” that pediatric dentists should be helping to prevent both children and adolescents from starting to use tobacco products. In addition, 21% of respondents thought that smoking cessation counseling by a pediatric dentist was “quite effective” or “very effective” in helping adolescents to stop smoking. Finally, 34% thought that such counseling by a pediatric dentist was “quite effective” or “very effective” in preventing children and adolescents from starting to use tobacco products.

Given these responses regarding the perceived effectiveness of smoking cessation counseling by a pediatric dentist and expanded role concepts, it is not surprising that 29% of respondents received an average highly favorable score on a 4-item index of the perceived role of the pediatric dentist in the prevention and treatment of the use of tobacco products among children and adolescents (Figure 2.).

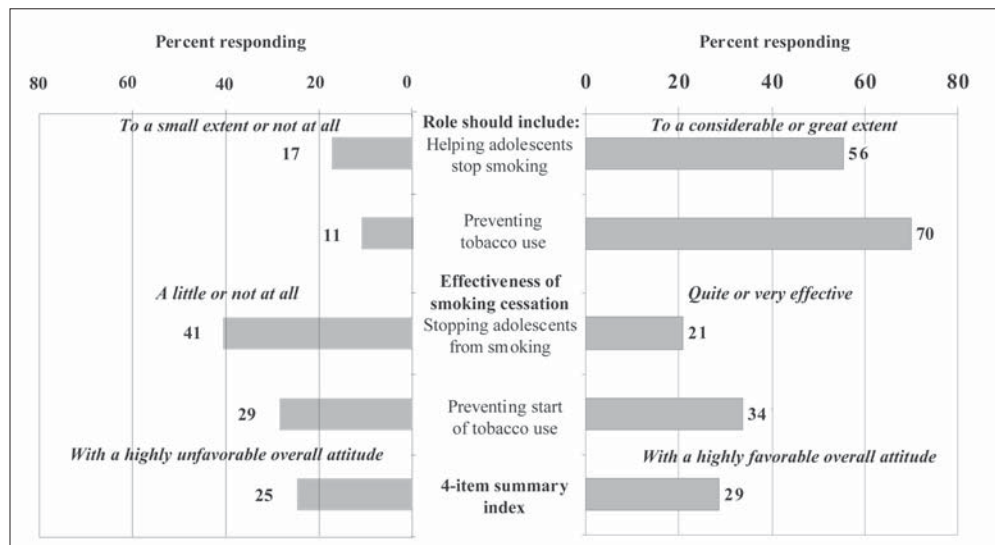


Figure 2. Attitudes toward expanding the role of the pediatric dentist in tobacco intervention. Source: PDPTS, 2001.

Table 1. Percentage of Dentists Who Believe They Should Intervene in Youth Tobacco Use by Perceived Effectiveness of Their Intervention*

Indicator of an expanded role for the pediatric dentist	Degree of perceived effectiveness of smoking cessation counseling on 2 aspects of tobacco intervention		
	Little or not at all effective	Somewhat effective	Quite or very effective
Stopping adolescents from smoking	22%	65%	92%
Role should include preventing children and adolescents from starting to use tobacco products	41%	73%	92%

*Source: PDPTS, 2001.

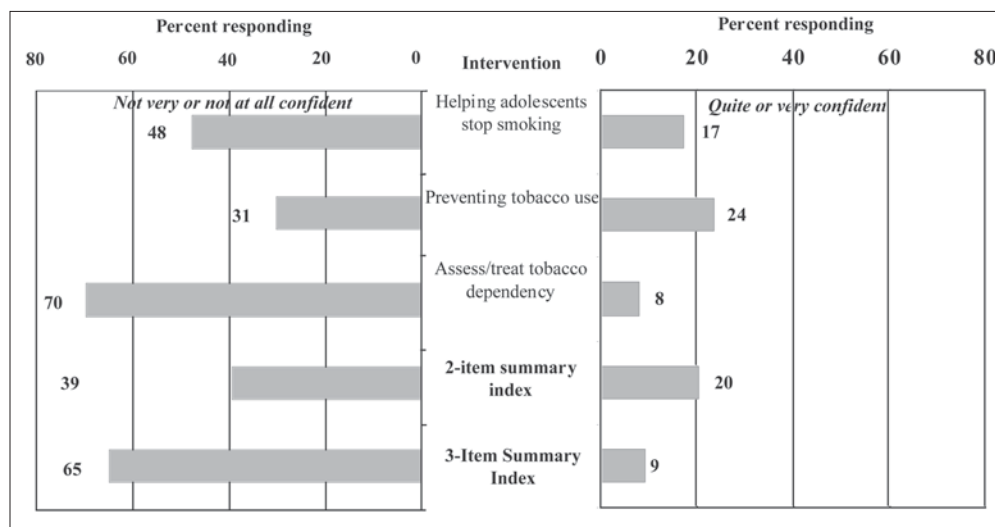


Figure 3. Attitudes about personal abilities in conducting tobacco interventions. Source: PDPTS, 2001.

Perceived effectiveness of smoking cessation counseling and expanded role conceptions

Perceptions of the effectiveness of smoking cessation counseling in helping adolescents to stop smoking and in helping to prevent children and adolescents from starting to use tobacco products were positively associated with expanded role conceptions.

Table 1 shows that respondents who saw smoking cessation counseling as “quite effective” or “very effective” in stopping adolescents from continuing to smoke were 3.4 times more likely to perceive stopping adolescents smoking as part of their clinical objectives than were their counterparts who saw such counseling as only “a little effective” or “not at all effective.” Similarly, respondents who perceived smoking cessation counseling by a pediatric dentist as “quite effective” or “very effective” in preventing children and adolescents from starting to use tobacco products were 2.2 times more likely than respondents with “a little effective” or “not at all effective” responses to see such endeavors as part of their job to a “considerable extent” or “great extent.”

Confidence in ability to address and treat tobacco use issues

Only 17% of pediatric dentists were “quite effective” or “very confident” in their ability to help adolescent patients to stop smoking (Figure 3). A slightly greater number of respondents (24%) expressed that same level of confidence in their ability to prevent children and adolescents from starting to use tobacco products. However, only 8% were “quite confident” or “very confident” in their ability to assess and treat nicotine dependence. A summary confidence index based on the first 2 of these 3 confidence items showed that about 20% were, on average, “quite confident” or “very confident” in their personal abilities to conduct tobacco interventions with children and adolescents. When this index was expanded to include the item on confidence in ability to assess and treat nicotine dependence, only 9% of the dentists gave themselves a “quite confident” or “very confident” overall rating.

Ability to assess and treat nicotine dependence and the role of pediatric dentists

Only 14 of the 173 (8%) respondents felt “quite confident” or “very confident” in their ability to assess and treat nicotine

dependence. In sharp contrast, 70% of respondents were “not very confident” or “not at all confident” about their abilities to do this. Concomitantly, only about 20% of respondents with such a low sense of confidence thought to a “considerable extent” or “great extent” that the job of a pediatric dentist should include giving attention to use of tobacco issues among children and adolescents (Figure 4). On the other hand, among the 8% of pediatric dentists who had high confidence in their ability to assess and treat nicotine dependence, 64% had a “considerable extent” or “great extent” view of the importance of addressing tobacco use issues in the lives of their patients.

Variations in expanded role concept for pediatric dentists

In their cluster of attitudes toward the perceived role of the pediatric dentist with regard to their patients’ use of tobacco products, 29% of respondents favored to a “considerable extent” or “great extent” their professional involvement in

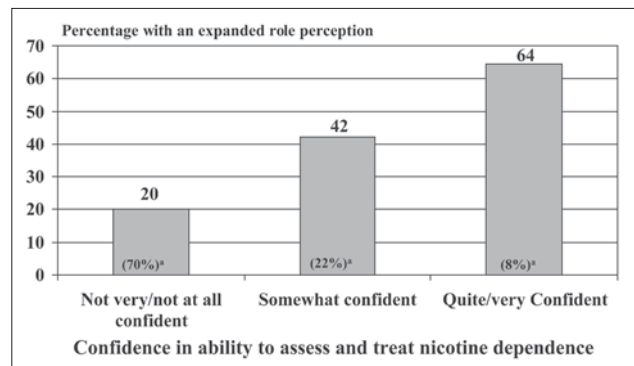


Figure 4. Percentage of pediatric dentists with an expanded view of the role of the pediatric dentist by degree of confidence in ability to assess and treat nicotine dependence.

Source: PDPTS, 2001.

*Percentage of pediatric dentists in this confidence category.

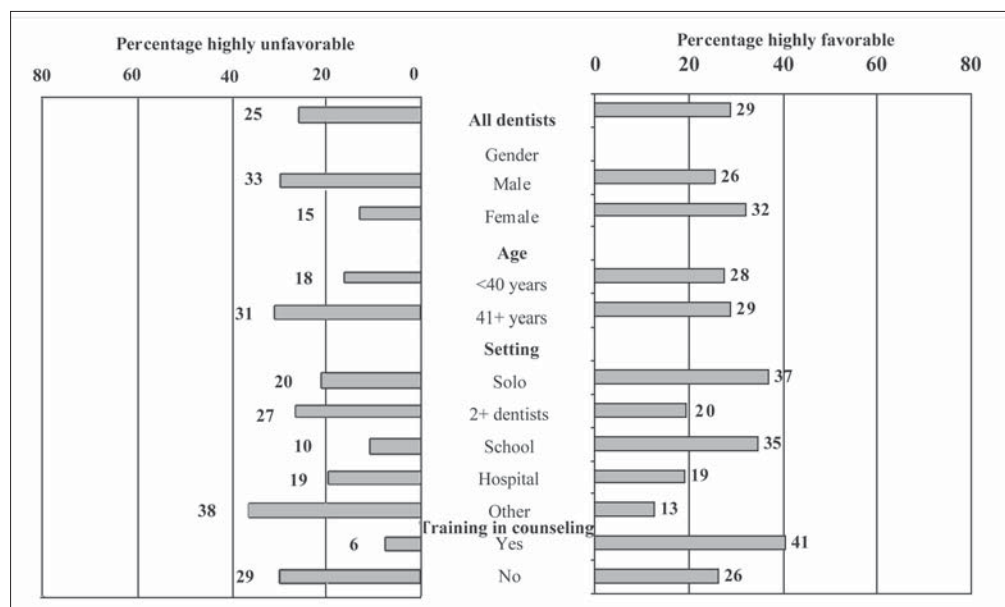


Figure 5. Percentage of dentists with highly favorable or unfavorable overall attitudes towards the role of the pediatric dentist in tobacco interventions based on a 4-item index.

Source: PDPTS, 2001.

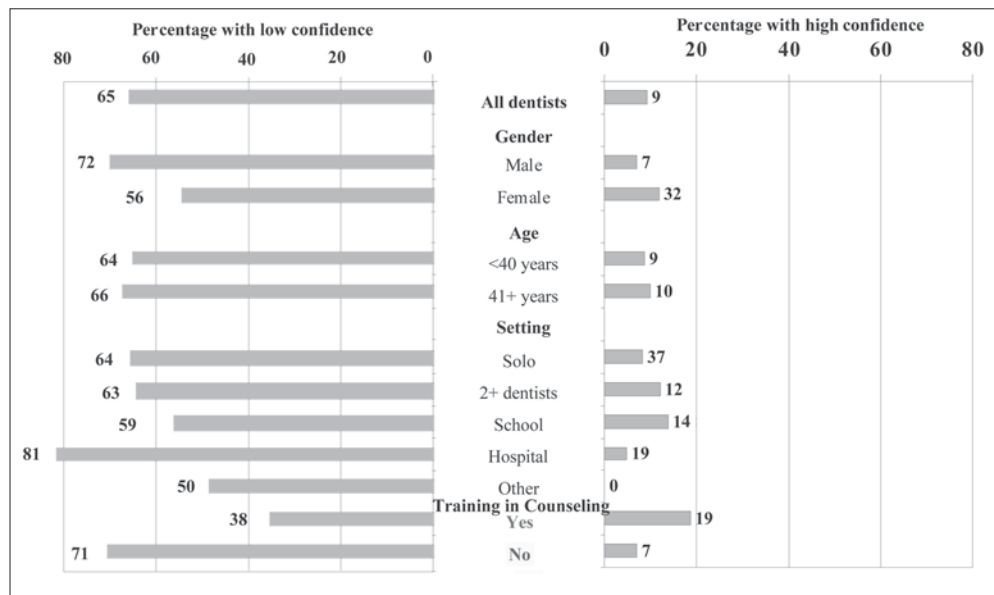


Figure 6. Percentage of dentists with high or low confidence in personal abilities to conduct tobacco interventions based on 3-item index. Source: PDPTS, 2001.

Table 2. Likelihood of Belief in Dentists' Role in Tobacco Intervention and a High Degree of Confidence in Their Ability to Intervene*

Some to any counseling	Expanded role perception		High degree of confidence in abilities		Expanded role perception and high degree of confidence	
	Unadjusted	Adjusted†	Unadjusted	Adjusted†	Unadjusted	Adjusted†
Yes	1.9	2	3	3.2	2.4	3.8
No	1	1	1	1	1	1

*Source: PDPTS, 2001.

†Adjusted for age, gender and practice setting.

this aspect of the care of children and adolescents (Figure 5). Across practitioners, there were variations by gender, practice setting, and training in tobacco counseling in the relative frequency with which the respondents suggested such a positive attitude. Women (32%), solo practitioners (37%) school-based practitioners (35%), and those with some training in counseling (41%) were all more likely than their counterparts to have a more favorable than the average interest in addressing tobacco issues with their patients. At the other extreme of this attitudinal cluster, males (33%), older dentists (31%), solo practitioners (20%), and those in other settings not specified (38%) were more likely to give an average response to the 4 role-effectiveness items that was comparable to a “small extent” or “not at all extent” response pattern. Those with some training in counseling (6%) were the least likely to have such an unfavorable attitude toward dealing with tobacco issues.

Confidence in ability to conduct tobacco interventions

Overall, only about 9% of pediatric dentists were “quite confident” or “very confident” in their ability to deal with tobacco issues in the lives of their child and adolescent pa-

tients. In this respect, there were only slight variations by gender, practice setting, and training in tobacco counseling. Women (32%), pediatric dentists in partnerships (12%) and in school settings (14%), and those with some training in counseling (19%) were each more likely than their counterparts to be “quite confident” or “very confident” in their abilities to address tobacco use issues (Figure 6).

By contrast, a clear majority of the respondents (65%) were either “not very confident” or “not at all confident” about their abilities to conduct tobacco interventions. In this regard, males (72%), hospital-based practitioners (81%), and those with no training in counseling were more likely than their counterparts to have such a low sense of confidence in their ability to address tobacco issues.

Exploratory multivariable analyses

To explore these descriptive findings in a multivariable context, 3 dependent variables were submitted to a series of logistic analyses. The first of these analyses examined the likelihood of having an expanded view of the role of the pediatric dentist with regard to addressing issues of tobacco use among children and adolescents. The second set of analyses focused on the likelihood of having a high sense of confidence in the ability to address tobacco issues. The third set of analyses addressed the likelihood of a pediatric dentist having both an expanded view of their role with regard to tobacco use issues and a high degree of confidence in their abilities to address them.

A major result of these analyses was that pediatric dentists with some training in tobacco counseling were about 1.9 to 2 times more likely than the reference population to have an expanded view of their role as a pediatric dentist with respect to dealing with tobacco issues (Table 2). They also were 3 to 3.2 times more likely than their counterparts to have a high degree of confidence about their ability to deal with such issues. Finally, they were 2.4 to 3

times more likely than their counterparts to have both an expanded view of their role regarding the clinical management of tobacco use issues and a high degree of confidence in their ability to deal with them.

Discussion

This survey evaluated the attitudes of a subspecialty of dentists that has not typically been targeted in tobacco cessation efforts. Although the convenience sample is small, it likely represents a best case scenario in that, generally, respondents to any survey are more likely to be interested in or believe that they are knowledgeable about the topic than nonrespondents. Although no attempt was made to determine demographics of nonrespondents, the 173 pediatric dentists who responded to the survey closely parallel members of the AAPD regarding gender and age (data not shown). In any case, the results of this survey pertain to the respondents only. The results of this survey suggest strongly that a larger, comprehensive study is warranted, with the ultimate aim of developing, implementing, and evaluating interventions.

Of significance is the apparent lack of training in smoking cessation and an opportunity to improve needed skills through continuing education. Improved skills in smoking cessation are of vital importance for the growing field of pediatric dentistry. Along with pediatricians, pediatric dentists are in a pivotal position to intervene in the habit-forming process of tobacco use at the earliest stages. Peer pressure exerts a heavy toll on decisions to use tobacco, which a pediatric dentist is also in a position to counter. Pediatric dentists are in one of the most influential positions for some children, having the opportunity to re-evaluate smoking habits every 6 months if the child is on a regular recall program. This frequency is much greater than a child would see a pediatrician during adolescence.

Perhaps even more important is the potential public health benefits of pediatric dentists' efforts to prevent smoking initiation. Preventing the initiation of tobacco use among children and adolescents could have a dramatic impact on the long-term scope of smoking in the United States.²¹ These potential gains could be attributed to the fact that not initiating smoking in adolescence, which is the primary time that smoking is started, would result in fewer people initiating smoking by the time they reached adulthood.²² Prevention efforts such as these would assist in achieving Healthy People 2010 tobacco objectives, which, in turn, saves lives.²³

Pediatric dentistry residency programs are not mandated now to train residents in smoking cessation/intervention for any specific amount of time or in any specific manner. Mandated training and required continuing education in smoking cessation specifically geared to the pediatric dentist is a change with great potential. The AAPD could take a leadership role in both providing opportunities for members to get continuing education as well as supporting additional training.

Concomitantly, the potential role for departments of pediatric dentistry in dental schools is obvious. The existing role of the pediatric dentist in the lives of millions of children provides a stage for this service.

Conclusions

Based on this pilot survey:

1. Many pediatric dentists considered it their role to help their patients stop tobacco use or prevent its initiation.
2. Most pediatric dentists were not trained in tobacco cessation techniques.
3. Most pediatric dentists were not comfortable in addressing tobacco cessation with their patients.
4. Pediatric dentists who had tobacco counseling training were more likely to be positive about their role in tobacco intervention and were much more likely to have a high degree of confidence in its ability to deal with tobacco issues.
5. A comprehensive, national survey of pediatric dentists regarding their roles in providing tobacco intervention, and barriers preventing their intervention, is necessary.

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ABSTRACT OF THE SCIENTIFIC LITERATURE



TEMPERAMENT AND ACCEPTANCE OF DENTAL TREATMENT UNDER SEDATION IN PRESCHOOL CHILDREN

Parents are often able to predict how their child will behave and cope in different situations including immunizations and dental examinations. The purpose of this study was to investigate whether differences of the acceptance of dental treatment and amnesia after rectal sedation with midazolam can be explained by temperament traits in the children. Fifty children between 17 and 51 months referred to 3 clinics of specialized pediatric dentistry and requiring extractions under sedation were used for this study. Midazolam (0.3 mg/kg rectally) was given at the second appointment, and parameters were scored by the dentist and parent, with the resulting data processed in SPSS at a significance level of 5% used for all tests. The authors found that temperament seemed to be related to child behavior before sedation and how well they recall the treatment period. They found that children regarded as shy by their parent(s) were at a greater risk of an unsatisfactory acceptance of dental treatment. The authors concluded that parental ratings of child temperament, together with dentists' assessments of child behavior, seem to be valuable in predicting a child's acceptance of dental treatment under sedation.

Comments: Although many practitioners will use these methods to predict the effectiveness of sedation, it is nice to have this documented. It may have been helpful if the authors would have also included a group of age-matched children that were not sedated for comparison. **DARB**

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