Tobacco Counseling Practices of Dentists Compared to Other Health Care Providers in a Midwestern Region

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Abstract: Tobacco counseling practices of dentists and other health care professionals in a predominantly rural region in the Upper Midwest were assessed to determine the need for professional education. A survey was mailed to all dentists, physicians, chiropractors, nurse practitioners, physician assistants, and public health nurses in a 16-county region. Half (51.9 percent) of providers returned usable surveys (n=614). While dentists were more likely than physicians and other health professionals to accurately estimate their patients' tobacco use, they were less consistent than other professions in tobacco assessment and intervention, less supportive of tobacco intervention, less likely to report having strong tobacco cessation skill/knowledge levels, and more likely to perceive barriers to tobacco intervention. Three out of five dentists (61.1 percent) reported desire for further tobacco education. For dentists to effectively counsel patients regarding tobacco use, it is essential to integrate tobacco intervention education into dental school curricula and to offer continuing education regarding tobacco use intervention to practicing dentists. Recent state settlements with tobacco companies could provide funding for such education.

Key Words: dentists, physicians, comparative study, smoking cessation, counseling, attitudes of health personnel, health education/dental

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With over 400,000 tobacco-related deaths each year, tobacco use is the largest single preventable cause of illness and premature death in the United States.[1] Consistent interventions by multiple health care professionals, including dentists, have been shown to be effective in reducing tobacco use.[2] In its position statement on tobacco, the American Dental Association "urges its members to become fully informed about tobacco cessation intervention techniques to effectively educate their patients to overcome their addiction to tobacco."[3]

Because dentists routinely observe the oral cavity, the area most intimately connected with and the best indicator of tobacco use, they are excellently situated to intervene in patients' tobacco use.[4-11] Most tobacco users visit their dentists annually.[4,12-14] Dentists may also encourage those who do not use tobacco to remain tobacco free. Dentists have been shown to be effective in reducing tobacco use among patients when they incorporate tobacco cessation and prevention programs into their practice.[4,6,15-19] Moreover, dentists have an ethical responsibility to caution patients about the risks associated with tobacco use.[20]

Despite evidence that dentists can be effective in reducing tobacco use, tobacco counseling is underutilized in dental practices.[7-12,15,21] Lack of tobacco cessation education may be one reason for underutilization of tobacco counseling.[9,15,22] The American Association of Dental Schools advises schools of dentistry to provide education about substance abuse.[23] Studies indicate, however, that while some dental schools integrate tobacco use cessation and prevention into their curricula, often this education is neither comprehensive nor consistent.[24,25]

Dolan and others[9] found a relationship between dentists' training, preparation to help patients with tobacco cessation, and tobacco cessation services offered in their practice. Dentists were more likely to provide tobacco cessation services if they felt well prepared to assist patients to stop using tobacco, if they completed tobacco cessation training, and/or if they were willing to complete such training. Only one dentist in ten received formal tobacco cessation training, and one in five believed they were ad-

equately trained to help patients' tobacco cessation.[9] Gerbert and others[15] reported that dentists' lack of training is a barrier preventing them from offering tobacco cessation counseling to their patients. Hastreiter and others' Minnesota study[22] found that most dentists received no formal training in tobacco cessation.

Tobacco cessation training has been found to be positively related to tobacco cessation services in dental practices,[9] yet most dentists lack formal training in tobacco cessation counseling.[9,15,22] Most dentists believe that the profession should be involved in tobacco cessation counseling.[7,8,10,11,16] However, fewer report comfort with advising about tobacco cessation.[9,16] It is estimated that two-thirds to over three-quarters of dentists offer some tobacco cessation advice to their patients,[8-10,16,22] but only about one-third offer specific tobacco cessation services.[9,22,26]

In 1989, Fried and Rubenstein-DeVore[24] conducted a study of U.S. dental schools' and dental hygiene programs' tobacco use cessation curricula. Approximately two-thirds of dental schools devoted curriculum hours to tobacco use cessation. About one-third of schools reported that they addressed counseling techniques, referral to cessation programs, and nicotine gum in their curriculum. The authors concluded that most schools' tobacco use cessation curricula lacked adequate depth and breadth of the subject.

Grinstead and Dolan[25] compared the 1989 study[24] with their 1993 survey of fifty dental schools. In 1993, only one dental school reported having a didactic course solely devoted to tobacco cessation, and 56 percent had a didactic course with some tobacco cessation content. In the didactic courses, 59 percent of schools discussed tobacco cessation counseling, 59 percent covered information about nicotine transdermal patches, and 41 percent included information on referral to cessation programs. Less than half (41 percent) of the schools included tobacco cessation in clinical activities. In these clinical activities, only 10 percent of the schools required students to discuss strategies to help patients stop using tobacco. Despite increased interest in tobacco programming between 1989 and 1993, tobacco use cessation curricula remained weak and lacked depth.[25]

There is evidence that tobacco intervention is more effective if carried out by multiple providers.[2] In the dental arena, some studies suggest that dentists are more likely than hygienists to ask about tobacco use and advise patients about tobacco cessation, while others suggest that dentists and hygienists are similar in these activities.[9,11,22]

Dentists have also been compared to physicians regarding tobacco counseling practices.[12,15,21,26] In general, tobacco users are more likely to be advised about tobacco cessation by physicians than by dentists.[12,15,21,26] Dentists were less likely than physicians to feel well prepared in offering tobacco cessation counseling.[26] While few physicians reported receiving formal training, even fewer dentists reported such training.[26]

Only one study explores the tobacco counseling practices of multiple health care provider groups. Secker-Walker and others[5] compared tobacco cessation counseling of women by six types of health professionals: primary care physicians, dentists, dental hygienists, family planning counselors, community mental health counselors, and Women, Infants, and Children (WIC) counselors in four counties in Vermont and New Hampshire. Results showed that dentists (3 percent) and dental hygienists (3 percent) were less likely than physicians (14 percent) and family planning/WIC counselors (17 percent) to have received formal training in tobacco cessation counseling and to feel adequately prepared to provide such counseling. Dentists and dental hygienists were also less likely than other groups, especially physicians, to routinely identify patients who used tobacco and to spend time counseling patients about tobacco use.[5] It was suggested that all provider groups would benefit from training in tobacco cessation.

The current research examined tobacco counseling attitudes and practices of dentists in comparison to physicians and other health care providers in a predominantly rural Midwestern region. Previous research[27,28] in this region showed that 23.2 percent of adults currently used tobacco, and one half (50.6 percent) of current tobacco users attempted to quit in the previous year. To effectively plan and evaluate tobacco-related continuing education for dentists and other health care providers, it was necessary to establish baseline measures of provider attitudes and practices regarding tobacco interventions.

Methods

In 1997, the Bridge to Health Clinician Tobacco Survey[29] was conducted to examine tobacco assessment practices, tobacco intervention practices, attitudes toward tobacco intervention, tobacco skills/

knowledge, barriers to assessment/intervention, estimated patient tobacco use, and desire for tobacco education among health care providers. Lists of dentists and other health care professionals in sixteen predominately rural counties of Northeast Minnesota and Northwest Wisconsin were obtained through state licensing agencies and professional list distribution agencies. Regional county health departments provided lists of public health nurses. Human subjects approval was obtained through the University of Minnesota.

The survey instrument, a thirty-one-item questionnaire, was developed by a multidisciplinary team, reviewed for content validity by experts in tobacco research, and pretested with members of each health care provider discipline included in the sample. Surveys were mailed to the addresses supplied by licensing agencies and public health departments. A cover letter and a stamped, addressed, and coded return envelope accompanied each mailing. A second questionnaire was mailed to providers who did not return the completed survey within a three-week period.

The sample size was 1,183 after adjusting for providers who had moved from the region or were retired. The response rate was 51.9 percent overall (n=614). Response rates ranged from 45.3 percent among physicians to 76.0 percent among public health nurses. Over half (51.9 percent) of contacted dentists responded to the survey.

Data analysis, using SPSS, included computation of summed scores for provider assessment practices, provider intervention practices, attitudes toward tobacco intervention, tobacco skills/knowledge, barriers to tobacco intervention, and provider desire for education. Cronbach's Alpha was used to determine internal consistency. Summed scores were non-normally distributed and were recategorized to facilitate analysis. Chi-Square and analysis of variance determined differences between provider disciplines. Preliminary results have been reported by Block and others.[29]

Results

Responses from health care provider groups were collapsed into three categories; dentists (n=154), physicians (n=266), and others (n=194). "Others" consisted of chiropractors, public health nurses, physician assistants, and nurse practitioners. Table 1 shows characteristics of the three provider categories.

Of dentists, nine in ten (90.8 percent) were male, and nearly three-quarters (71.2 percent) were between thirty-five and fifty-four years of age. One in five (21.6 percent) indicated they were current tobacco users, and one-quarter (24.8 percent) reported past tobacco use. Dentists were more likely than other health care providers to be male and current tobacco users.

Table 2 displays tobacco attitudes and practices by provider category. Significant differences existed among provider categories for all attitudes and practices examined. Dentists were less likely to consistently assess their patients' tobacco use. Less than

Table 1. Provider category characteristics

	Total n = 614 (%)	Dentists n = 154 (%)	Physicians n = 266 (%)	Others* n = 194 (%)	x^2/df/*P* value
Gender					158.26/2/<.0001
Male	65.1	90.8	75.5	30.6	
Female	34.9	9.2	24.5	69.4	
Age					4.36/6/NS
< 35	16.0	17.0	15.1	16.6	
35-44	37.6	31.3	38.8	40.9	
45-54	34.8	39.9	34.1	31.6	
55 >	11.6	11.8	12.0	10.9	
Tobacco Use					17.97/4/<.005
Current	13.2	21.6	10.7	9.8	
Past	30.6	24.8	28.6	37.8	
Never	56.2	53.6	60.7	52.3	

* Others include chiropractors, public health nurses, physician assistants, and nurse practitioners.

Table 2. Tobacco attitudes and practices by provider category

	Total n = 614 (%)	Dentists n = 154 (%)	Physicians n = 266 (%)	Others* n = 194 (%)	x^2/df/*P* value
Assessment Practices					68.0/4/< .00001
Consistently	58.5	31.8	69.3	65.2	
Occasionally	35.9	59.6	28.7	26.5	
Never assess	5.6	8.6	1.9	8.3	
Intervention Practices					65.12/4/<.0001
Consistently	10.0	6.9	9.4	13.4	
Occasionally	61.2	45.1	77.2	50.6	
Never intervene	28.8	47.9	13.4	36.6	
Attitudes Toward Tobacco Intervention					76.85/4/<.0001
Strongly support	77.9	52.9	87.9	84.0	
Moderate support	20.4	42.5	11.7	14.9	
Limited support	1.6	4.6	0.4	1.0	
No support	0.0	0.0	0.0	0.0	
Tobacco Skills/Knowledge					38.25/6/<.0001
Strong skills/knowledge	18.6	8.7	25.4	16.9	
Moderate skills/knowledge	55.4	49.0	55.8	59.8	
Limited skills/knowledge	22.7	35.6	16.9	20.6	
No skills/knowledge	3.3	6.7	1.9	2.6	
Barriers to Tobacco Intervention					31.83/4/<.0001
No perceived barriers	60.8	49.3	67.7	60.2	
One barrier	28.1	28.4	27.7	28.5	
Two or more barriers	11.1	22.3	4.6	11.3	
Estimated Patient Tobacco Use	32.6	27.7	32.3	37.3	12.2**/2/<.0001
Desire for Tobacco Education					22.48/6/<.001
Strong desire	22.8	15.6	19.1	33.5	
Moderate desire	43.1	47.6	42.0	41.1	
Limited desire	27.0	29.9	29.6	21.1	
No desire	7.1	6.8	9.3	4.3	

*Others include chiropractors, public health nurses, physician assistants, and nurse practitioners.
**Analysis of Variance F statistic rather than Chi-square

one-third of dentists (31.8 percent), compared to approximately two-thirds of physicians (69.3 percent) and other professionals (65.2 percent), reported consistent assessment of tobacco use among their patients. Almost half of dentists (47.9 percent) never offered tobacco interventions to their patients, compared to one in ten physicians (13.4 percent) and one third of other professionals (36.6 percent). Overall, the rate of consistent tobacco intervention was much lower than consistent tobacco assessment. Half of dentists (52.9 percent) had strong supportive attitudes toward tobacco intervention, compared to 87.9 percent of physicians and 84.0 percent of other professionals.

Less than one in ten dentists (8.7 percent) reported having strong skills/knowledge, compared to one-quarter of physicians (25.4 percent) and one in six of the other professionals (16.9 percent). Dentists (42.3 percent) were much more likely than physicians (18.8 percent) and other professionals (23.2 percent) to admit to having limited or no tobacco skills/knowledge. Dentists (22.3 percent) were more likely than physicians (4.6 percent) and other professionals (11.3 percent) to perceive two or more barriers to tobacco intervention. Half of dentists (49.3 percent) perceived no barriers to intervention, compared to about two-thirds of physicians (67.7 percent) and other professionals (60.2 percent).

Dentists' estimation of their patients' tobacco use (27.7 percent) was closest to the national (25.5 percent)[30] and regional (23.3 percent)[27] averages. Physicians (32.3 percent) and other professions (37.3 percent) overestimated the percentage of patients using tobacco.

Finally, dentists (63.2 percent) were comparable to physicians (61.1 percent) in expressing moderate or strong desire for further tobacco education, com-

pared to three-quarters of other professionals (74.6 percent).

Table 3 shows dentists' responses to statements in the questionnaire pertaining to their views on tobacco education. While most dentists believed that it is important for members of their profession to discuss tobacco use with their patients, considerably fewer wanted their facility to take a very active role in tobacco cessation counseling. Almost three-quarters (73.4 percent) wanted specific education on addressing tobacco use with their patients and wanted to know where to refer their patients for help with quitting tobacco use.

Dentists were also asked about their preferences for receiving continuing education regarding tobacco interventions. They reported being most likely to attend short seminars (69.5 percent), followed by audio/visual programs (46.1 percent) and small group training (43.5 percent).

Discussion

It has been suggested that dentists are uniquely situated to identify tobacco users because they routinely examine the part of the body most intimately connected with tobacco use.[6] This study in a predominantly rural region of the Upper Midwest found that, while dentists were best able to estimate tobacco use prevalence of their patients, they were less likely than other health care professions to engage in tobacco interventions. These Midwestern dentists were less likely than other health care providers to consistently assess (31.8 percent) and more likely to only occasionally assess (59.6 percent) tobacco use among their patients. Dentists in this study were less likely than other groups to offer interventions; and over half never intervened regarding tobacco use at all. Consistent assessment of tobacco use was similar to that found by Secker-Walker and others[5] (31 percent), but lower than that of Hastreiter and others'[22] statewide study of Minnesota dentists (46 percent).

Dentists were divided on their perceptions of barriers that prevented them from tobacco interventions; half perceived no barriers, and the other half perceived one or more barriers. Findings concerning specific barriers were compared with those from the 1994 Minnesota statewide examination of dentists' barriers to tobacco cessation.[22] Slightly fewer dentists in this regional study (35.1 percent) believed that time was a barrier compared to 41 percent of dentists in the statewide study. Lack of reimbursement was listed as a barrier by more dentists in the statewide study (39 percent) than this regional study (22.7 percent). Availability of educational materials as a barrier to tobacco cessation varied greatly between the two studies. While 9 percent of dentists in the statewide study indicated that this was a barrier, 60.4 percent of regional dentists indicated that they did not have sufficient patient materials on hand.

Dentists in this regional study were far more likely to be current tobacco users (21.6 percent) than expected. Statewide surveys showed tobacco use prevalence among dentists as 5 percent in Minnesota [22] and 6 percent in Maryland[7] and Iowa.[16] Geboy's[8] literature review of smoking behavior of dentists showed a marked decrease in such behavior over time, from 34 percent in 1969 to 4 percent in 1989. It is unclear why dentists in this study showed tobacco use rates higher than expected for dentists but similar to other adults in the region.[27] Research suggests that dentists who currently used tobacco were less likely than non-users to engage in tobacco interventions.[9] However the current research showed no relationship between dentists' tobacco use and their assessment and interventions.

Significant differences existed between dentists and physicians or other health care providers in all measured tobacco variables. Dentists were more likely than physicians and other professionals to accurately estimate their patients' tobacco use. However, compared to physicians and other profession-

Table 3. Selected education-related responses of dentists (n=154)

Education-Related Statements	% Agreeing
It is important for members of my profession to discuss tobacco use with patients.	96.1
I would like specific education on addressing tobacco use with my patients.	73.4
I would like training on assessment of my patients' readiness to quit.	58.5
I would like education regarding tracking/ monitoring patients' tobacco use and cessation attempts in my facility.	44.1
I am aware of tobacco cessation resources in my community.	55.2
I have sufficient educational materials on hand to give to my patients who use tobacco.	35.7
I would like to know where to refer my patients for help with quitting tobacco use.	69.5
I would like my facility to take a very active role in tobacco cessation counseling.	37.6

als, dentists were less consistent in assessing and intervening in their patients' tobacco use, less supportive of tobacco interventions, less likely to report having strong skill/knowledge levels, and more likely to perceive barriers to tobacco intervention. This finding is consistent with that of Secker-Walker and others[5] who found that dentists were less prepared than physicians to provide cessation advice to patients.

Corroborating results from previous studies, dentists were open to further tobacco education.[7,9,11,22] Two-thirds of dentists indicated a moderate to strong desire for further tobacco education. Most dentists required further education on a variety of issues and did not have sufficient education materials on hand for their patients who used tobacco. Dentists indicated that they were not adequately prepared to provide tobacco cessation counseling, and that they would welcome further education to prepare them to do so. When given a choice of type of education, most dentists preferred short seminars presented in their area.

Two limitations of this study should be noted. While the 1994 Minnesota statewide study[22] included data about both smoking and smokeless tobacco, this study did not make that distinction. Future studies should differentiate between smoking and smokeless tobacco. The response rate of dentists in this study (51.9 percent) was lower than those found in studies by Secker-Walker and others[5] (80 percent) and Hastreiter and others[22] (73 percent). It is not possible to determine how responders differed from non-responders in this study.

These findings, along with the lack of tobacco cessation curricula in dental schools, signal the need to increase attention to the development of educational programs to better prepare dentists to intervene in patients' tobacco use. These programs should target both dental students and practicing dentists. Because other health education programs are also grappling with how to integrate tobacco assessment and cessation intervention into their curricula, carefully thought out plans to link the curricula of dental schools with other health education programs can result in economies of scale.

While this call to action has been made before, this is an optimal time for dental schools to undertake further development of these programs. Funding from recent state settlements with tobacco companies has potential to support health profession education in tobacco cessation and prevention. For instance, Minnesota has targeted settlement funds for such endeavors. Integration of tobacco cessation and prevention into professional and continuing education curricula will help dentists to incorporate tobacco counseling as an essential and routine component of practice.

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