Source: Journal of Dental Hygiene, Vol. 78, No. 3, Summer 2004

Barriers to Tobacco Cessation Counseling and Effectiveness of Training

Angela L Monson

Angela Monson, RDH, BS, MS, is an assistant professor, Department of Dental Hygiene, at Minnesota State University, Mankato. She is pursuing her doctoral degree in Education from the University of Minnesota.

The oral health care appointment provides a unique opportunity for tobacco cessation counseling (TCC). This literature review examines the effectiveness of training oral health care professionals for TCC, including the barriers to providing counseling. Undergraduate education and continuing education are both effective methods for training health care professionals in TCC. Identifying barriers to TCC may enhance its effectiveness, and should be addressed in the American Dental Hygienists' Association's "Ask, Advise, Refer" initiative.

Keywords: tobacco cessation, counseling, tobacco cessation counseling barriers, smoking prevention

Introduction

In 1900, the annual consumption of cigarettes in the United States was 2.5 billion.[1] The estimate for annual consumption of cigarettes in the United States in 2001 was 422 billion.[1] The 2000 National Health Interview Survey concluded that in 2000, an estimated 46.5 million adults were current smokers.[2] According to Spangler and associates, although the prevalence of cigarette smoking has declined in the last two decades, the rate of decline is slowing.[3] The decline rate at the current level is not sufficient to meet national health objectives for 2010.[2] Although smoking rates overall have dropped somewhat from 1999, 35.2% of senior high school students continued to smoke cigarettes in 2001.[4] The senior high school student percentage of 35.2 was significantly higher than the adult smoker percentage of 23.5 in 1999.[4]

Although 70% of smokers report they would like to stop smoking and 34% attempt to quit each year, only 2.5% are successful.[1,5] Efforts must be intensified to promote tobacco cessation and discourage initiation of smoking.[1]

Gould, Eickhoff-Shemek, Stacy and Mecklenburg cite that the dental health care provider's role in tobacco use cessation is critical because more than 50% of current smokers visit a dentist at least once a year.[6] According to recent research, patients expect oral health care providers to inquire about tobacco usage.[7] On the American Dental Hygienists' Association (ADHA) website, Immediate Past President Tammi O. Byrd states "Oral health screenings provide a unique opportunity to give patients information that could save their lives and to place dental hygiene on the front line of smoking cessation intervention. The advice of a dental hygienist can be a major motivation for a quit attempt by a patient who smokes."[8]

Effectiveness of Tobacco Cessation Counseling Education

Literature regarding the effectiveness of training health care providers to provide TCC abounds.[3,6-30] Silagy, Lancaster, Gray and Fowler report that programs designed to train health care providers in smoking cessation counseling were effective in increasing the number of patients who received counseling.[9] They further assert that effective programs increase the number of quit dates set, self-help materials given, and nicotine replacement products prescribed.[9] A search of the Cochrane Tobacco Addiction Group trials register concludes that training health care professionals to provide smoking cessation counseling favorably impacts professional performance.[10] In this paper, studies examining the effectiveness of training health care providers will be organized into two categories: in-service (graduate and continuing education), and pre-service (undergraduate) settings.

Training Health Care Providers in Practice

Dolan, McGorray, Grinstead-Skigen and Mecklenburg surveyed 1,746 dentists and 723 dental hygienists regarding tobacco cessation activities.[11] These researchers found 14% of all dentists and 23% of all dental hygienists completed formal tobacco cessation training.[11] Oral health care providers with tobacco cessation training provided more tobacco use cessation services and advised more patients to stop using tobacco than those without training.[11]

Gould, et al. surveyed health care providers in a National Cancer Institute (NCI) training program whose purpose was to teach participants to provide brief tobacco cessation services to patients.[6] The authors found no significant change in advice given by participating health care providers as a result of training.[6] Conversely, NCI training was found to significantly increase the number of health care providers undertaking efforts to assist patients with tobacco cessation.[6] Additionally, health care providers, following NCI training, used more educational materials when providing TCC.[6]

Wood, Cecchini, Nathason and Hiroshige examined pre- and post- treatment survey scores of 293 dental professionals trained in TCC.[12] Training entailed a 90 minute on-site training session provided by a dentist and a tobacco cessation educator.[12] Following training, professionals who were trained in tobacco cessation counseling showed significant increases in asking patients about tobacco use, advising patients about stopping, recording tobacco use, using assessment forms, assisting patients to quit, providing self-help materials, and referring patients to cessation programs.[12]

Gordon and Severson[13] compared the effectiveness of a workshop versus self-study materials in training dental hygienists regarding TCC. Authors found that dental hygienists who received training in either form were more likely to increase the extent of cessation advice and less likely to perceive barriers to counseling than dental hygienists without training.[13] Furthermore, dental hygienists who attended the workshop training were more likely to increase the extent of their cessation advice than those who received the self-help materials.[13]

Velasquez, Hecht, et al. examined effectiveness of providing motivational interviewing tobacco cessation techniques to public health nurses and social work case managers.[14] They concluded that health care providers with adequate time, practice, and communication skills more readily incorporated new tobacco cessation skills such as motivational interviewing into daily routines.[14] Accordingly, the authors suggested there may be more cost effectiveness in training only health care providers who are interested in and, therefore, more likely to learn and apply the new TCC techniques.[14]

Training Health Care Students

Seim and Verhoye compared the smoking cessation counseling skills of fourth-year medical students trained in a 2.5 hour workshop with colleagues exposed to a brief five minute training session.[15] Although neither group performed very well,

students with longer formal training were significantly more skilled in assisting patients with smoking cessation than were those trained in a brief session.[15]

Yip, Hay, et al. surveyed 244 fourth-year dental students assessing attitudes towards tobacco use counseling according to NCI guidelines.[16] Authors found students who received formal training in smoking cessation provided more counseling than did students without formal training.[16] Findings from this study revealed oral health care workers with tobacco cessation training and adequate preparation were more likely to adhere to NCI guidelines than those who were not.[16]

Hepburn, Johnson, Ward, and Longfield examined the effect of tobacco cessation training averaging 2.5 hours on practice habits of United States army general medical officers.[17] Results indicated brief training did not significantly improve officers' scores on objective knowledge tests, but did improve certain practitioner habits involving assisting patients to quit.[17] Hepburn and associates' finding of an increase in assisting patients after training was consistent with the results of Gould, et al.[17]

While examining the efficacy of resident tobacco cessation training, Cornuz, et al. found training significantly increased the overall quality of smoking cessation counseling.[18] Increase in overall quality was evidenced by a higher mean score in the intervention group than the control group.[18] Additionally, trained residents expressed higher self-confidence and self-perceived effectiveness in smoking cessation counseling than did non-trained residents.[18]

Gelskey used a chart audit to determine if a comprehensive, dental school based tobacco use cessation program increased the extent to which tobacco using patients received counseling from dental and dental hygiene students.[19] Tobacco using patients were telephoned and surveyed about counseling they received from dental and dental hygiene students who had received training and who had not received training.[19] This study revealed that students trained in a comprehensive tobacco use program provided more counseling than did students who were not trained.[19]

Factors that Influence Tobacco Cessation Counseling Activities

In 1996, Chambers and Corbin surveyed 340 dental hygienists about their TCC actions and found that 35% of the dental hygienists stated patient resistance as a significant barrier to TCC.[20] Twenty-nine percent of the dental hygienists felt inadequately trained to perform TCC.[20] Lack of time was cited by 26% of the dental hygienists as a barrier to TCC.[20] Additional barriers to TCC included resistance by staff, inadequate knowledge of referral sources, and tobacco using employers.[20]

Dolan, McGorray, Grinstead-Skigen and Mecklenburg surveyed 1,746 dentists and 723 dental hygienists regarding TCC activities.[21] In addition to counseling activities, perceived barriers to TCC were collected from participants randomly assigned the long survey or telephone interview. Approximately one-half of the dentists randomly assigned the long survey or telephone interview indicated no barriers to TCC. Among dentists perceiving barriers, 22% indicated lack of reimbursement as a strong barrier, while 27% cited the same barrier as being moderate. Eighteen percent perceived the barrier of not knowing where to send patients for counseling as strong, while 33% perceived such to be somewhat of a barrier. As compared with higher percentages found by Chambers and Corbin, merely 11% of dentists cited the lack of time as a strong barrier to TCC; however, 35% stated this was somewhat of a barrier.

Bobo, Anderson, and Bowman tested the effectiveness of a half-day tobacco cessation counseling training workshop for chemical dependency staff.[22] Authors concluded heavy case loads limit the amount of time for TCC. In addition, lack of confidence in ability, and lack of reimbursement from insurance companies were identified as barriers to TCC.

Russos and associates assessed oral health care providers' compliance with providing tobacco cessation counseling to adolescent patients in orthodontic offices after 1.5 hours of training.[23] They discovered negative feedback from patients, lack of staff modeling and the lack of a formal office tracking system may adversely influence counseling behavior.[23]

Six months after family physicians attended a two-hour TCC workshop, Richmond, Mendelsohn, and Kehoe examined their TCC actions.[24] Authors found that 54% of the physicians cited lack of time was a significant barrier to TCC. Similar to findings presented by Russos and associates, Richmond and associates found that 23% of physicians cited negative feedback from patients as a significant barrier to TCC. Fourteen percent of the physicians cited lack of confidence to perform smoking cessation counseling as a significant barrier.

Gould, Eickhoff-Shemek, Stacy, and Mecklenburg surveyed 69 oral health care providers regarding TCC activities three months after NCI training.[6] While the level of confidence to help smokers quit statistically increased from the training, 32% of the dental team still perceived patient resistance as a barrier to providing TCC.[6] Approximately 25% of the providers cited lack of time, lack of financial reimbursement and lack of knowledge regarding referrals as being significant barriers to providing TCC.

Skegg examined the smoking cessation attitudes and counseling activities of dentists and dental hygienists for one year following a training program.[25] In a sample of 27 dentists and dental hygienists; 20 commented on perceived barriers to smoking cessation counseling. Seven identified lack of time as a barrier, five cited the fear of offending patients, two stated they believe clinical dentistry is more important, and two identified the lack of reimbursement for services as a barrier.

Block, Block, Hutton, and Johnson compared the tobacco counseling actions of dentists to those of allied health care providers in the upper midwest.[26] Fifty percent of the 154 dentists surveyed did not perceive any barriers to TCC. This percentage concurs with the previous findings of Richmond and associates.[24] Lack of sufficient patient education materials was cited by 60.4% of dentists as a barrier to tobacco cessation education.[26] Authors found 35.1% of dentists believed lack of time to be a significant barrier to counseling.[26] Twenty-two percent of dentists acknowledged lack of financial reimbursement for tobacco cessation counseling as a barrier to implementation.[26]

Cooke, Mattick, and Campbell investigated factors influencing adoption of 'Fresh Start,', a smoking cessation program, by staff in prenatal clinics.[27] Twenty-three prenatal clinics were targeted by trained midwives for implementation of the 'Fresh Start' smoking cessation program. Twelve of 23 prenatal clinics identified negative attitudes of the smoker as a barrier to program implementation. Lack of time was noted by eleven prenatal clinics, and nine cited they did not believe smoking cessation among patients to be integral to their medical role. Eight prenatal clinics cited lack of follow-up as negatively impacting adoption of the program. Seven clinics identified staff turnover and negative attitudes among staff to be significant barriers to smoking cessation counseling. Fewer than five prenatal clinics identified access and storage of materials, inadequate training, and cost of training as negatively influencing decisions to adopt the 'Fresh Start' program.

Yip, Hay, Ostroff, Stewart, and Cruz surveyed 244 fourth-year dental students regarding attitudes toward smoking cessation counseling.[28] Authors concluded more than 60% of respondents endorsed the following as barriers to providing TCC: lack of time, lack of adequate reimbursement, lack of confidence in ability, lack of adequate referral knowledge and resistance from patients. Barriers cited by more than 80% of students included the lack of sufficient referral knowledge and patient resistance.

Gottlieb, Guo, Blozis, and Huang compared the TCC activities of 110 family practice residents.[29] Thirty-five percent of participants were in the first year of residency, 33.6% in the second year, and 30.9% in the third year. Similar to findings by Skegg[25], Chambers, and Corbin[20], and to Bobo and associates[22], Gottlieb and associates found 61.8 percent of the residents identified lack of time as a barrier to TCC.[29] Fifty-eight percent of residents identified lack of patient interest as a barrier, while 33.9% cited lack of health educators as a barrier. Lack of systems for tracking and promoting preventive care was identified by 33.9% of the residents, with 20% noting the lack of financial reimbursement as barriers to TCC.

Seventeen percent of the residents found lack of patient education materials to be a barrier to counseling activities, while only 5.6% felt inadequately prepared.

In findings similar to Cooke and associates[27], Latts, Prochazka, Salas, and Young examined the effectiveness of training nurses, medical assistants, nurse practitioners and physicians (N=66) in obstetric practices to provide smoking cessation counseling.[30] These researchers encountered several barriers when recruiting obstetric practices for the training. Specifically, they requested participation of 33 obstetric practices; however, only 18 agreed to participate. Nonparticipating offices claimed lack of time, insufficient staff, and lack of smoking patients as rationale for not undertaking smoking cessation counseling into their respective practices. These researchers alleged that contacts, commonly office managers who smoked, may have been more unwilling to participate in smoking cessation counseling training than contacts who did not smoke.

In another recent study, Albert, Ward, Ahluwalia, and Sadowsky assessed tobacco cessation knowledge, attitudes, and counseling behaviors of dental teams participating in the Aetna managed care plan.[31] Surveys from 75 dental offices revealed that 95.2% of dentists were willing to receive training. However, 87.5% of those dentists indicated time as a barrier to implementing TCC. In addition, 75% of dentists also indicated lack of reimbursement for TCC as a barrier. These researchers concluded that dentists who were most confident about their smoking cessation knowledge more frequently advised their patients to quit. A summary table of identified factors is available in Table I.

Table I
Summary of Factors Found to Affect Tobacco Cessation Counseling

	Resources*											
Factors Compiled:	6	11	16	20	22	23	24	25	26	27	29	30	31
Lack of time	X	X	X	X	X		X	X	X	X	X	X	X
Lack of financial reimbursement	X	X	X		X			X	X		X		X
Patient Resistance/Negativity	X		X	X		X	X				X		
Lack of Confidence			X		X		X	X					
Inadequate Knowledge of Referrals	X	X	X	X									
Focus on other Health Care							X	X		X			
Resistance by Staff				X		X				X			
Inadequate Training				X							X		
No barriers for 50% of subjects		X							X				
Lack of Formal Office Tracking System						X					X		
Staff Turnover/ Insufficient Staff										X		X	
Lack of Education Materials									X		X		
Lack of Smoking Patients												X	
Employer Smokes				X									

* Resources as numbered references

Summary

The deleterious health consequences of tobacco use, combined with the majority of tobacco users wanting to quit, suggests that more research regarding TCC be undertaken. The oral health care setting provides a unique opportunity for TCC, as a majority of smokers seek oral health care annually.[6] It is apparent from numerous research reports that TCC education of health care providers and health care students favorably impacts TCC activities. Numerous factors have been identified by health care providers and health care students as impacting TCC activities. Lack of time, lack of financial reimbursement, and patient resistance/negativity were the three most common barriers found. Further studies examining the effectiveness of incorporating management of barriers to TCC within education, either during professional entry level education or

continuing education, is recommended. Additionally, research should examine the impact of removing identified barriers on implementation of TCC.

A recent grant from the Robert Wood Johnson Foundation has instigated a tobacco cessation initiative by the American Dental Hygienists' Association (ADHA).[8] To promote program success, it is recommended that the ADHA sufficiently address identified barriers to tobacco cessation techniques while designing the "Ask, Advise, Refer" intervention program. Specifically, the ADHA may want to address potential reimbursement through insurance companies or employers for TCC provided. If the oral health care practice received financial reimbursement for providing TCC, dental hygienists might have more time in their schedule for this service; this would address the top two identified barriers.

Notes

Correspondence to: Angela L Monsonemailaddress

References

1. American Lung Association Trends in tobacco use. Best Practices and Program Services. Epidemiology and Statistics Unit 2003.
2. Trosclair A, Husten MD, Pederson L, Dhillon I. Cigarette smoking among adults-United States. Morbidity Mortality Weekly Report 2002;51:642-645.
3. Spangler JG, George G, Foley KL, Crandall SJ. Tobacco intervention training: Current efforts and gaps in US medical schools. JAMA 2002;288:1102-1109.
4. Trends in cigarette smoking among high school students - United States, 1991-2001. Morbidity and Mortality Weekly Report. May 2002 51:409-412.
5. Fellows JL, Trosclair A, Adams EK, Rivera CC. Annual smoking-attributable mortality, years of potential life lost, and economic costs-United States, 1995-1999. Morbidity Mortality Weekly Report 2002;51:300-303.
6. Gould KA, Eickhoff-Shemek JM, Stacey RD, Mecklenburg RE. The impact of National Cancer Institute training on clinical tobacco use cessation services by oral health teams. J Am Dent Assoc 1998;129:1442-1449.
7. Christen AG. Tobacco cessation, the dental profession, and the role of dental education. J Dent Educ 2001;65:368-374.
8. Nikloch N. ADHA establishes tobacco cessation initiative. Available at http://www.adha.org/news/020204-sci.htm [cited 2004 Mar 9].
9. Silagy C, Lancaster T, Gray S, Fowler G. Effectiveness of training health professionals to provide smoking cessation interventions: Systematic review of randomized controlled trials. Qual Health Care 1994;3:193-198.
10. Lancaster T., Silagy C, Fowler G. Training health professionals in smoking cessation. Coch Data Sys Reviews 2000;3:CD000214.
11. Dolan TA, McGorray SP, Grinstead-Skigen CL, Mecklenburg R. Tobacco control activities in U.S. dental practices. J Am Dent Assoc 1997;128:1669-1679.
12. Wood GJ, Cecchini JJ, Nathason N, Hiroshige K. Office-based training in tobacco cessation for dental professionals. J Am Dent Assoc 1997;128:216-224.
13. Gordon JS, Severson HH. Tobacco cessation through dental office settings. J Dent Educ 2001;65:354-363.
14. Velasquez MM, Hecht J, Quinn VP, Emmons KM, DiClemente CC, et.al. Application of motivational interviewing to prenatal smoking cessation: Training and implementation issues. Tob Control 2000;9[3]:36-40.
15. Seim HC, Verhoye JR. Comparison of training techniques using a patient-centered approach to smoking cessation. Med Educ 1995;29:139-143.
16. Yip JK, Hay JL, Ostroff JS, Stewart RK, et.al. Dental students' attitudes toward smoking cessation guidelines. J Dent Educ 2000;64:641-650.
17. Hepburn MJ, Johnson JM, Ward JA, Longfield JN. A survey of smoking cessation knowledge, training, and practice among U.S. Army general medical officers. Am J Prev Med 2000;18:300-304.
18. Cornuz J, Humair JP, Seematter L, Stoianov R, et.al. Efficacy of resident training in smoking cessation: A randomized, controlled trial of a program based on application of behavioral theory and practice with standardized patients. Ann Intern Med 2002;136:429-437.
19. Gelskey SC. Impact of a dental/dental hygiene tobacco-use cessation curriculum on practice. J Dent Educ 2002;66:1074-1078.
20. Chambers AK, Corbin DE. Tobacco control activities of Iowa dental hygienists. J Community Health 1996;21:375-387.
21. Dolan TA, McGorray SP, Grinstead-Skingen CL, Mecklenburg R. Tobacco control activities in U.S. dental practices. J Am Dent Assoc 1997;128:1669-1679.

22. Bobo JK, Anderson JR, Bowman A. Training chemical dependency counselors to treat nicotine dependence. Addict Behav 1997;26:23-30.
23. Russos S, Hovell MF, Keating K, Jones JA, et.al. Clinician compliance with primary prevention of tobacco use. The impact of social contingencies 1997;26:44-52.
24. Richmond R, Mendelsohn C, Kehoe L. Family physicians' utilization of a brief smoking cessation program following reinforcement contact after training: A randomized trial. Prev Med 1998;27:77-83.
25. Skegg JA. Dental program for smoke-free promotion: Attitudes and activities of dentists, hygienists, and therapists at training and 1 year later. N Z Dent J 1999;95:55-57.
26. Block DE, Block LE, Hutton SJ, Johnson KM. Tobacco counseling practices of dentists compared to other health care providers in a midwestern region. J Dent Educ 1999;63:821-827.
27. Cooke M, Mattick RP, Campbell E. A description of the adoption of the 'Fresh start' smoking cessation program by antenatal clinic managers. Aust J Adv Nurs 2000;18:13-21.
28. Yip JK, Hay JL, Ostroff JS, Stewart RK, et.al. Dental students' attitudes toward smoking cessation guidelines. J Dent Educ 2000;64:641-650.
29. Gottlieb NH, Guo JL, Blozis SA, Huang PP. Individual and contextual factors related to family practice residents' assessment and counseling for tobacco cessation. J Am Board Fam Pract 2001;14:343-351.
30. Latts LM, Prochazka AV, Salas NM, Huang PP. Smoking cessation in pregnancy: failure of an HMO pilot project to improve guideline implementation. Nicotine Tob Res 2002;4:S25-30.
31. Albert D, Ward A, Ahluwalia K, Sadowsky D. Addressing tobacco in managed care: A survey of dentists' knowledge, attitudes, and behavior. Am J Public Health 2002;92:997-1001.