Tobacco Cessation Counseling Training in US Entry-Level Physical Therapist Education Curricula: Prevalence, Content, and Associated Factors

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Background. The US Public Health Service (USPHS) recommends tobacco cessation counseling (TCC) training for all health care professionals. Within physical therapist practice, smoking can have adverse effects on treatment outcomes in all body systems. In addition, people with physical disabilities have a higher smoking prevalence than the general population, creating a strong need for tobacco cessation among physical therapy clientele. Therefore, TCC training is an important component of entry-level physical therapist education.

Objective. The aims of this study were: (1) to determine need for TCC training within entry-level physical therapist education and (2) to identify potential barriers to implementation of USPHS guidelines in the academic environment.

Design. A descriptive cross-sectional survey was conducted.

Methods. Directors or academic coordinators of clinical education from entry-level physical therapist programs (N=204) were surveyed using an online instrument designed specifically for this study. Data regarding program and faculty characteristics, tobacco-related training content, and faculty opinions toward TCC in both physical therapist practice and education were analyzed descriptively.

Results. The response rate was 71%. A majority (60%) of programs indicated inclusion of tobacco-related training, most commonly 1 to 2 hours in duration, and of these programs, 40% trained students in the implementation of USPHS clinical guidelines for TCC.

Limitations. Data analyses were constrained by limited or missing data in some areas. A single faculty member completed the survey for each program.

Conclusions. There is a need for TCC training in entry-level physical therapist education. Inclusion may be facilitated by addressing perceived barriers toward TCC as a component of physical therapist practice and promoting the relevance of TCC as it relates to intended outcomes of physical therapy interventions.
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Smoking is the leading preventable cause of chronic disease and premature mortality.1,2 As vital providers of rehabilitation, prevention, and risk reduction services,3 physical therapists are uniquely positioned to provide tobacco cessation counseling (TCC) for people with physical disabilities, as well as the population at large.3–6 Approximately 21% of American adults currently use tobacco; rates are even higher among people with disabilities.1 When compared with their peers without disabilities, people with disabilities are less likely to receive tailored TCC and less likely to make a quit attempt.1–7 Because smoking exacerbates pre-existing conditions, people with disabilities also are more likely to experience detrimental effects of tobacco use.7 Furthermore, the potential impact of smoking on treatment outcomes in all aspects of physical therapist practice provides a strong incentive for increased professional involvement in TCC.3,4,8

Results of the National Ambulatory Medical Care Survey revealed that fewer than 20% of patients who smoke received TCC during their most recent health care encounter.8 Specific to physical therapy, a survey conducted among clinicians in New York, Tennessee, and California demonstrated TCC rates of 17%.9 This survey, published in 2004, demonstrated a significant lag in awareness and application of clinical practice guidelines for smoking cessation, first endorsed in 1996 by former president of the American Physical Therapy Association (APTA), Dr Marilyn Moffat.10 One reason behind this persistent shortcoming is that many health care professionals lack the knowledge and confidence to apply TCC skills in clinical practice.11

There is growing recognition that smoking is one of several behavioral risk factors underlying the increasing prevalence of lifestyle-related health conditions.8,12 The relationship between smoking and chronic disease or disability demonstrates a need for tailored TCC training and clinical competencies.8 It is known that training increases TCC and improves provider performance,13–15 and patients who receive counseling are 60% more likely to make a quit attempt.16 Several professions, including physical therapy,17 have already begun to incorporate TCC as a component of their entry-level curricula. Evidence-based TCC clinical practice guidelines developed by the Agency for Healthcare Research and Quality (AHRQ)18 and endorsed by the US Public Health Service (USPHS)19 have been used successfully in training pharmacy students,14 dental students,13,20 chiropractic students,15 and medical students.21,22 However, based on results of the 2005–2007 Global Health Professions Student Survey, fewer than 40% of dental, medical, nursing, and pharmacy students reported prior TCC training, although the majority believed that TCC was part of their professional roles and should be included in entry-level education.23

Although previous studies have examined the prevalence and scope of knowledge regarding TCC among physical therapy practitioners,5 limited data are available to reflect the current rates of TCC training among physical therapist students. Based on preliminary investigations, student confidence in providing advice for smoking cessation can be improved through education and skills practice.17 In addition, a recent international study encompassing a small sample of physical therapist programs in the United States showed that more than 80% included some mention of tobacco use with regard to patient education for lifestyle behavior change.8 However, further research is needed to assess the scope of tobacco-related content, including whether students receive training in application of evidence-based clinical practice guidelines for TCC.

Therefore, the current study was designed as a needs assessment. Results from this study can be used to inform curricular development, with the ultimate goal of improving TCC knowledge and skill among physical therapists entering the profession. The primary objectives were: (1) to determine the prevalence of evidence-based TCC training among entry-level physical therapist education programs in the United States and (2) to explore the opinions and perspectives of faculty regarding the inclusion of TCC as a component of physical therapist education and practice. The AHRQ/USPHS clinical practice guidelines for TCC (commonly known as “The 5 A’s” and “The 5 R’s”)18 were used as a benchmark for evidence-based content.

Method
Survey Instrument
In order to meet the research objectives, we developed a survey instrument designed to gather data regarding tobacco-related content offered by entry-level physical therapist programs in the United States and Puerto Rico that are recognized by Commission on Accreditation in Physical Therapy Education (CAPTE).24 This instrument was modeled after previous studies examining the scope and content of evidence-based TCC among American medical schools25 and nursing education26,27 and the implementation of TCC guidelines in pharmacy practice28 as well as dental medicine.29 Items regarding tobacco-related content centered on the AHRQ/USPHS TCC clinical practice guidelines, as well as a preliminary review of the literature establishing the relevance of TCC as it relates...
to physical therapist practice and intended treatment outcomes.5,5,26,50

In order to identify the existing prevalence and scope of TCC training among entry-level physical therapist education programs, items included the number of hours devoted to tobacco-related content and the type of teaching methods used, including whether students were given the opportunity to apply skills in a simulated or clinical setting.23 Survey items also included program and faculty characteristics and questions regarding the perceived relevance of TCC to the physical therapist’s professional roles and responsibilities. Questions concerning the faculty’s opinions toward TCC were based on the Theory of Reasoned Action.31 According to this theory, the implementation of clinical guidelines is a direct result of behavioral intention. In turn, behavioral intentions are shaped by potential barriers and facilitators, such as personal knowledge and support for AHRQ/USPHS clinical practice guidelines,19 as well as the availability of necessary resources, including time needed for application of TCC guidelines in clinical practice settings,50 the ability and opportunity to establish TCC training within preprofessional and postprofessional education,32 and the perceived importance and efficacy of TCC guidelines in promoting cessation among patients who smoke.33

Prior to administration, content validity was assessed via expert review (N=7) by professionals with backgrounds in physical therapy, public health, cardiopulmonary practice, health promotion, and graduate education in substance abuse and counseling. Prior to widespread distribution, the wording and format of the survey were pretested using a small sample of clinicians and faculty (N=10). Minor modifications were made by consolidating items and providing space for text responses, allowing respondents to elaborate on certain topics, such as clinical specialty, opinions toward TCC as a component of education and practice, and methods used in delivery of TCC content. The wording of questions regarding clinical guidelines for TCC was revised to include more familiar terminology (eg, “The 5 A’s” and “The 5 R’s”), and an item was added concerning the inclusion of tobacco-related content for relapse prevention. Survey development, pilot testing, and data collection were consistent with methods for cross-sectional descriptive studies.34

**Study Population**

Prior to distribution of the survey, the study received the approvals of the institutional review boards of the sponsoring universities. With the exception of program name, individual responses were anonymous. The survey was administered using Qualtrics Online Survey Software (Qualtrics, Provo, Utah). Respondents from each physical therapist program were recruited by contacting the program director or academic coordinator of clinical education (ACCE) at each CAPTE-accredited program (N=204). This individual was asked to designate an appropriate faculty member who might be qualified to answer questions concerning tobacco-related education content and provide opinions regarding physical therapists’ role in smoking cessation. This procedure was selected in lieu of direct faculty contact due to individual variations in curricular design and the likelihood that tobacco-related content may fall within one or more courses. Once a faculty member was designated, he or she was sent an email with a consent letter and link to the online survey. Faculty members were advised that they were free to abstain from answering any questions and could withdraw at any time. A chance to receive a $50 gift certificate was offered as an incentive to participate.

**Survey Administration**

The survey was initiated in April 2012. The initial response rate was less than 20% (N=40), and was felt to be due to timing of the survey’s launch, which coincided with the end of the spring term. Therefore, follow-up emails and phone calls were deferred until the start of the fall academic term, 2012. Follow-up contact was made with each of the remaining 164 programs that did not initially respond. Data collection concluded in November 2012.

**Data Analysis**

Data analyses were conducted using SPSS software, version 16 (SPSS Inc, Chicago, Illinois). Descriptive statistics included frequency counts and percentages to reflect program demographics and faculty characteristics. Frequency counts and percentages also were used to describe prevalence and scope of tobacco-related training content at each of the programs represented. Faculty support for the inclusion of TCC within physical therapist practice and education was analyzed as a categorical variable (agree, disagree, neutral). Data were stratified by age, years of clinical experience, years of teaching experience, entry-level degree, and highest degree earned.

**Results**

Survey responses were received from 146 programs (final response rate=71%). However, only 81% of the respondents provided the name of their program. Of the programs that could be identified by name and geographic location, 53% are located in tobacco-growing states, 53% are located at public universities, and 83% are located at universities with smoke-free campus policies.

Faculty respondents were primarily female (68%), with a mean age of
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51.4 years (SD=8.3, range=32–69), a mean of 261 years of experience as a physical therapist (SD=9.0, range=6–46), and a mean of 16.4 years (SD=8.9, range=1–40) of experience in an academic environment. Primary teaching responsibilities were weighted toward cardiopulmonary content; however, multiple areas were represented, including neurological and musculoskeletal physical therapy, consistent with the underlying premise that TCC is relevant to all areas of physical therapist practice. Primary clinical specialties also represented a broad range, with 58% of the respondents continuing to provide direct patient care in addition to teaching. Nearly all respondents (96%) were members of APTA, 34% were familiar with the AHRQ/USPHS clinical practice guidelines, 27% had received prior training in screening patients for tobacco use, and 11% had received prior training in screening patients for nicotine addiction. Only a very small percentage of those previously trained in tobacco-related issues had received specific training in the application of AHRQ/USPHS guidelines (12%). None of the respondents currently smoked, although 14% had previously smoked more than 10 cigarettes within their lifetime. Program and faculty respondent demographics are shown in Table 1.

Prevalence of Tobacco-Related Content in Program Curriculum

According to the survey respondents, 60% of entry-level physical therapist education programs include student training in how to provide TCC; 40% of these programs include skills based on the application of AHRQ/USPHS clinical practice guidelines. Training in other relevant skills, such as screening patients for tobacco use and nicotine addiction, was present in 67% and 40% of the programs, respectively (Tab. 2). Other commonly addressed issues were effects of secondhand smoke and effects of smoking on various pathologies seen by physical therapists.

Of the programs that reported tobacco-related content, most (82%) included 1 to 2 hours of training, primarily within a classroom setting (Tab. 3). Few programs included additional forms of instruction, such as role playing (8%) or practice within a clinical setting (10%). Resource material used to design curricular content in tobacco cessation counseling varied, with 40% of programs including the AHRQ/USPHS clinical practice guidelines for TCC, commonly known as “The 5 A’s” and “The 5 R’s.” However, it should be noted that many respondents indicated use of other sources that also include “The 5 A’s,” such as a cardiopulmonary physical therapy textbook, smoking cessation website, or the perspective paper by Pignataro et al. Other sources for tobacco-related curricular content included the National Cancer Institute guideline *How to Help Your Patient Stop Smoking*, as well as a review of the scientific literature.

Faculty Opinions Toward TCC in Physical Therapist Practice and Education

A total of 137 respondents answered this section of the survey (94% of total respondents). With regard to the physical therapist’s professional roles and responsibilities, most (84%) agreed that physical therapists should screen patients for tobacco use. However, opinions toward TCC as a component of practice were mixed, as approximately equal numbers agreed, disagreed, or were neutral regarding whether physical therapists should provide TCC for patients who smoke. Most of the respondents (81%) felt that students should be trained in screening patients for tobacco use, but only half (50%) supported TCC as a component of entry-level physical therapist education. Potential facilitators cited by educators reflected an understanding of the effect of smoking on various body systems. Potential barriers to TCC in the clinical and academic environments included a belief that patients who smoke are not interested in receiving cessation advice from the physical therapist (24%) and time constraints within the clinical setting (35%). Overall, faculty felt that lack of reimbursement should not discourage physical therapists from providing TCC. Faculty respondents were evenly divided on opinions regarding other potential barriers to the inclusion of TCC in clinical settings: 24% agreed that TCC should not be included in physical therapist practice because most patients are not interested in receiving cessation advice (35% disagreed), and 35% felt that time constraints were a significant impediment to TCC (33% disagreed). Faculty opinions toward aspects of TCC are presented in Table 4.

The analysis of data comparing faculty characteristics and support for TCC in physical therapist education and practice revealed no distinct patterns, except that support was higher in younger age groups and among those with professional and postprofessional doctorates in physical therapy (Tab. 5).

Qualitative Data

Free text entered on the surveys provided comments regarding TCC within physical therapist practice and education. Due to limited familiarity with the exact content of every course within the curriculum, common themes included occasional difficulty ascertaining whether certain topics related to TCC were taught during the students’ professional training. Several survey respondents expressed concern regarding physical therapists’ scope of practice, stating that referral to another health
## Table 1.
Program and Faculty Characteristics

| Program Characteristics (n=118) | Descriptive Statistics Frequency (%) or $\bar{X}$ (SD) [Range] |
|---------------------------------|-------------------------------------------------------------|
| Program is located at a public university | 53% |
| Program is located on a smoke-free campus | 83% |
| Program is located in a tobacco-growing state | 53% |

| Faculty Characteristics (n=146) | Descriptive Statistics Frequency (%) or $\bar{X}$ (SD) [Range] |
|---------------------------------|-------------------------------------------------------------|
| Respondents’ age (y) | 51.4 (8.3) [32–69] |
| Respondents’ sex | 67.8% female |
| Smoking status | |
| Nonsmoker | 100% |
| Former smoker | 14% |
| Years of experience as a physical therapist | 26.1 (9.0) [6–46] |
| Years of experience in academic instruction | 16.4 (8.9) [1–40] |
| Familiar with AHRQ/USPHS TCC guidelines ("The 5 A’s" and "The 5 R’s") | Yes: 34% No: 66% Missing: 0% |
| Received prior training in screening patients for tobacco use | Yes: 27% No: 66% Missing: 7% |
| Received prior training in how to screen patients for nicotine addiction | Yes: 11% No: 80% Missing: 9% |
| Received prior training in application of AHRQ/USPHS TCC guidelines | Yes: 12% No: 78% Missing: 10% |
| Of those who have received training: | |
| Have the self-rated knowledge and skill to apply "The 5 A’s" | Yes: 94% No: 6% Missing: 0% |
| Have the self-rated knowledge and skill to apply "The 5 R’s" | Yes: 6% No: 94% Missing: 0% |
| Faculty member is a physical therapist | Yes: 96% No: 0% Missing: 4% |
| Member of APTA (limited to those who were physical therapists, n=144) | Yes: 99% No: 1% Missing: 0% |
| Performs direct patient care in addition to teaching | Yes: 57% No: 21% Missing: 22% |

| Entry-level physical therapy degree | |
|-----------------------------------| |
| Certificate of proficiency | 5% |
| Bachelor’s | 61% |
| Master’s | 27% |
| Doctorate | 3% |
| Other—not a physical therapist | 3% |

(Continued)
care practitioner with greater counseling expertise might be best. One respondent wrote that TCC should not interfere with the client’s physical therapy treatment (ie, the primary reason for physical therapy intervention), and another respondent questioned the use of the term counseling in the context of patient education regarding the harmful effects of smoking and benefits of cessation.

**Discussion**

This study showed that a majority of physical therapist education programs include some degree of student training in tobacco-related content, although fewer programs utilize recognized guidelines for application of the content. Due to the anonymous nature of the survey, it is not possible to match program size with the inclusion of tobacco-related content. Therefore, we are unable to compute the total number of physical therapist students who have received training. However, based on the large percentage of programs that include tobacco-related

| Terminal degree | Frequency (%) | X (SD) [Range] |
|-----------------|---------------|----------------|
| Master’s        | 12%           |                |
| PhD or other academic doctorate | 53%           |                |
| DPT             | 7%            |                |
| tDPT            | 22%           |                |
| DPT, plus academic doctorate | 3%            |                |
| Other (eg, JD, MD, RN, DDS) | 3%            |                |
| Missing responses | <1%         |                |

| Area of clinical specialization | Frequency (%) |
|----------------------------------|--------------|
| Acute care                      | 10%          |
| Cardiopulmonary                  | 17%          |
| Geriatrics                       | 12%          |
| Neurology                        | 14%          |
| Oncology                         | 2%           |
| Orthopedics                      | 20%          |
| Pediatrics                       | 4%           |
| Generalist                       | 8%           |
| Missing responses                | 13%          |

| Primary teaching responsibilities (may select more than one area) | Frequency (%) |
|-----------------------------------------------------------------|--------------|
| Cardiopulmonary                                                 | 28%          |
| Clinical education                                              | 20%          |
| Professional practice/ethics                                   | 9%           |
| Other (eg, health promotion and wellness, women’s health, geriatrics) | 23%          |
| Basic sciences (eg, pathology, histology)                      | 6%           |
| Research/critical inquiry                                      | 6%           |
| Musculoskeletal/orthopedics                                     | 4%           |
| Physical therapy interventions (eg, modalities, therapeutic exercise, manual therapy) | 4%           |
| Other (includes wound management, women’s health)              | 14%          |
| Missing responses                                               | <1%          |

* AHRQ/USPHS—Agency for Healthcare Research and Quality/US Public Health Service, TCC—tobacco cessation counseling, APTA—American Physical Therapy Association.
content (75%), it is likely that the proportion of physical therapist students who receive training in TCC may be somewhat higher than the number of general health professions students worldwide (pharmacy, nursing, dentistry, and medicine), where only 40% of respondents indicated prior TCC training as an element of physical therapist education.25

Content for TCC training in physical therapist education averaged 1 to 2 hours, which is consistent with studies examining TCC content in undergraduate osteopathic education, where 65% of respondents reported less than 3 hours of training20 and nearly 53% of US medical programs reported 3 hours or less.36 Previous studies have shown the benefits of TCC training for health professions students.13,15,17,20,22,23 Approximately 88% of dentists and 98% of dental hygienists who were trained as students routinely advised patients to quit smoking.38

Within physical therapist practice, TCC has the potential to enhance treatment outcomes in all body systems, including cardiovascular and pulmonary health, neuromuscular and musculoskeletal health, and wound management.3 Evidence-based TCC guidelines developed by the AHRQ, commonly known as “The 5 A’s” and “The 5 R’s,” are closely compatible with patient education methods currently used by physical therapists.3 The “5 A’s” are designed to guide tobacco cessation interventions for patients who may be willing to quit smoking within the near future. Steps include asking the patient about his or her smoking status; advising the patient to quit smoking, using a strong, personalized message; assessing the patient’s willingness to quit smoking; assisting the patient in identifying successful cessation strategies; and arranging for follow-up contact.18 For patients who may not be contemplating cessation, application of “The 5 R’s” can assist in uncovering additional motivation. According to “The 5 R’s,” the physical therapist should encourage patients to consider the personal relevance of quitting smoking based on individual values and circumstances. The patient also should be

Table 2.

Components of Tobacco-Related Content in Program Curriculum (n=146)\(^a\)

| Content Area                                      | Program Included Content |
|--------------------------------------------------|--------------------------|
|                                                  | Yes | No | No Response |
| Screening patients for tobacco use               | 67% | 31%| 2%           |
| Screening patients for nicotine addiction       | 40% | 56%| 4%           |
| Effects of secondhand smoke exposure             | 81% | 15%| 4%           |
| Relationship between smoking and diabetes        | 55% | 43%| 2%           |
| Relationship between smoking and arthritis       | 43% | 57%| 2%           |
| Relationship between smoking and autoimmune disease | 49% | 51%| <1%          |
| Relationship between smoking and cognitive impairments | 34% | 63%| 3%           |
| Relationship between smoking and neurological conditions such as chronic pain, amyotrophic lateral sclerosis, and multiple sclerosis | 52% | 41%| 7%           |
| High-risk groups with the highest smoking prevalence | 41% | 59%| <1%          |
| How to provide smoking cessation counseling for physical therapy clients | 60% | 40%| <1%          |
| Smoking cessation counseling skills based on the application of the AHRQ/USPHS clinical guidelines | 40% | 60%| <1%          |
| Motivational interviewing skills                  | 38% | 57%| 5%           |

\(^a\) AHRQ/USPHS—Agency for Healthcare Research and Quality/US Public Health Service.

Table 3.

Characteristics of Tobacco-Related Content (n=87)\(^a\)

| Tobacco-Related Course Content and Characteristics | Percentage |
|---------------------------------------------------|------------|
| Hours of training                                  |            |
| 1–2                                               | 82         |
| 3–4                                               | 11         |
| ≥5                                                | 7          |
| Training includes TCC in a simulated setting       | 8          |
| Training includes TCC in a clinical setting        | 10         |
| Resource materials used for TCC curriculum         |            |
| AHRQ/USPHS clinical guidelines (“The 5 A’s”)       | 32         |
| Review of scientific research                      | 63         |
| NCI guideline How to Help Your Patient Stop Smoking | 23         |
| Other (eg, cardiopulmonary physical therapy textbook, smoking cessation website, perspective article by Pignataro et al\(^3\) ) | 43         |

\(^a\) TCC=tobacco cessation counseling, AHRQ/USPHS=Agency for Healthcare Research and Quality/US Public Health Service, NCI=National Cancer Institute.
counseled in identifying potential risks, or negative consequences of smoking, along with the rewards, or benefits of cessation. The physical therapist also can help patients identify roadblocks, or barriers, to cessation and should be prepared to repeat counseling at other opportunities in the episode of care.

According to prior research, physicians are the most likely providers to offer TCC services. However, utilization of rehabilitative services by people with physical disabilities provides a valuable opportunity for physical therapists to have a greater impact on smoking-related health disparities. Supportive counseling can encourage patients to consider quitting, based on personal risk and likelihood of improved physical therapy treatment outcomes. Strategies include communicating care and concern for the patient’s well-being, congratulating the patient on successes, and expressing empathy for difficulties encountered during the cessation attempt. These strategies are reinforced by the nature of physical therapist practice, where repeated visits and close personal contact strengthen rapport and provide multiple occasions for additional feedback.

Table 4.
Faculty Opinions Regarding Inclusion of Tobacco Cessation Counseling (TCC) in Physical Therapist Practice and Education (n=137)

| Statement                                                                 | Strongly Agree (%) | Agree (%) | Neutral (%) | Disagree (%) | Strongly Disagree (%) | Missing (%) |
|                                                                          |                    |          |             |             |                     |            |
| All physical therapy clients should be screened for tobacco use          | 43                 | 41       | 10          | 4            | 1                    | 1           |
| Physical therapists should provide TCC for clients who smoke              | 12                 | 31       | 31          | 21           | 3                    | 2           |
| Smoking has adverse effects on physical therapy treatment outcomes for cardiopulmonary conditions | 80                 | 19       | 1           | 0            | 1                    | 0           |
| Smoking has adverse effects on physical therapy treatment outcomes for orthopedic conditions (musculoskeletal impairments) | 55                 | 33       | 10          | 0            | 1                    | 0           |
| Smoking has adverse effects on physical therapy treatment outcomes for neurological conditions | 54                 | 37       | 8           | 0            | 1                    | 0           |
| Smoking has adverse effects on physical therapy treatment outcomes for wound management | 74                 | 23       | 3           | 0            | 1                    | 0           |
| Training in tobacco screening should be a part of entry-level physical therapist education | 35                 | 46       | 12          | 5            | 0                    | 2           |
| Training in tobacco cessation counseling should be a part of entry-level physical therapist education | 15                 | 35       | 25          | 19           | 4                    | 1           |
| Nicotine can be as addictive as heroin or cocaine                        | 47                 | 42       | 9           | 1            | 0                    | 1           |
| Brief counseling (5 min) can be an effective intervention for smoking cessation | 10                 | 19       | 38          | 23           | 9                    | 1           |
| TCC is an important aspect of physical therapist patient education        | 12                 | 43       | 30          | 10           | 1                    | 3           |
| People who smoke are not interested in receiving cessation advice from the physical therapist | 4                  | 20       | 39          | 29           | 6                    | 2           |
| Physical therapists should not provide TCC because this service is not reimbursed by third-party payers | 2                  | 4        | 22          | 53           | 18                   | 2           |
| Physical therapists do not have enough time in their schedule to make TCC a priority | 6                  | 29       | 29          | 28           | 5                    | 3           |
### Table 5.
Facility Characteristics Related to Support for TCC in Physical Therapist Practice and Education (n=137)\(^a\)

| Characteristic                  | Supports TCC in Physical Therapist Practice (%) | Supports TCC in Physical Therapist Education (%) |
|--------------------------------|-----------------------------------------------|-----------------------------------------------|
| Respondents’ age (y)           |                                               |                                               |
| 20–30                          | NA                                            | NA                                            |
| 31–40                          | 88                                            | 90                                            |
| 41–50                          | 84                                            | 84                                            |
| 51–60                          | 64                                            | 62                                            |
| 61–70                          | 38                                            | 54                                            |
| ≥71                            | NA                                            | NA                                            |
| Missing data                   | 35                                            | 38                                            |
| Years of clinical experience   |                                               |                                               |
| 0–5                            | NA                                            | NA                                            |
| 6–10                           | 100                                           | 100                                           |
| 11–15                          | 67                                            | 73                                            |
| 16–20                          | 76                                            | 83                                            |
| 21–25                          | 77                                            | 63                                            |
| 26–30                          | 33                                            | 38                                            |
| ≥31                            | 61                                            | 72                                            |
| Missing data                   | 33                                            | 37                                            |
| Years of teaching experience   |                                               |                                               |
| 0–5                            | 67                                            | 75                                            |
| 6–10                           | 78                                            | 83                                            |
| 11–15                          | 94                                            | 80                                            |
| 16–20                          | 35                                            | 35                                            |
| ≥21                            | 58                                            | 70                                            |
| Missing data                   | 40                                            | 35                                            |
| Entry-level physical therapy degree |                                               |                                               |
| Bachelor’s                     | 60                                            | 63                                            |
| Postbaccalaureate certificate  | 60                                            | 25                                            |
| Master’s                       | 70                                            | 79                                            |
| DPT                            | 100                                           | 100                                           |
| Other (not a physical therapist)| 100                                           | 100                                           |
| Missing data                   | 41                                            | 37                                            |
| Highest earned degree (in any field of study) |                                               |                                               |
| Bachelor’s                     | 100                                           | 100                                           |
| Master’s                       | 63                                            | 70                                            |
| PhD or equivalent (eg, ScD, EdD)| 61                                            | 66                                            |
| DPT                            | 100                                           | 100                                           |
| tDPT                           | 63                                            | 67                                            |
| DPT and PhD/equivalent         | 50                                            | 33                                            |
| Missing data                   | 41                                            | 37                                            |

\(^a\) TCC=tobacco cessation counseling, NA=not applicable.
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In a health care environment plagued by escalating expenditures, scarce resources, and increasing rates of chronic disease and disability, the role of physical therapists in health promotion and wellness is an important aspect of health care reform. Cost savings as a result of effective TCC are estimated at $883 to $3,590 per year of life preserved. Among medical residents, TCC training increased the likelihood of counseling and improved the efficacy of provider advice in promoting smoking cessation. In pharmacy students, training increased intention to perform TCC, with 97% of the students reporting a belief that TCC training would improve the quality of their patient interactions.

Within physical therapist education, possible reasons for lack of TCC training should be considered so that feasible strategies for improved training may be designed and implemented. Among other health care professions, potential barriers to TCC education included a lack of awareness, training, and perceived relevance of TCC among program faculty, along with a lack of curricular resources. Within the current sample of physical therapist educators, only 34% indicated familiarity with the AHRQ/USPHS guidelines for TCC, and only 12% had received prior TCC training. From this standpoint, it is likely that training and education for faculty members could potentially enhance training for students as well. Another option is to provide a curricular template and resources that could be used to standardize training for physical therapist students while not requiring additional education or excessive effort on the part of the faculty. However, in order to receive faculty support for implementation of evidence-based TCC guidelines in physical therapist practice and education, it will be essential for an effective curricular model to address perceived barriers cited by our respondents, such as the relevance of smoking cessation with regard to typical physical therapy clientele, diagnoses, and treatment outcomes, as well as factors in the clinical setting that can make TCC challenging. These challenges include time constraints, anticipated patient resistance, and lack of reimbursement for TCC services.

Professional organizations can provide incentive for TCC education by developing content guidelines and incorporating competencies into national licensing criteria. In providing additional qualitative responses to survey items, one faculty member wrote, “I would encourage educators to consider that this content be included in the Normative Model of Physical Therapist Professional Education as well as CAPTE criteria.” Another faculty member wrote, “This is an important topic, and I would love to see a specific stance taken by APTA on what the physical therapist’s role should be with this.” An example of professional initiatives in smoking cessation is provided in the American Society of Health-System Pharmacists (ASHP) therapeutic position statement on tobacco cessation. Through this statement, the ASHP encourages educators and practitioners to enact guidelines that effectively and consistently identify patients who smoke, provide access to entry-level and continuing education in evidence-based TCC, and support public policy to promote smoking restrictions in order to further encourage cessation and limit secondhand smoke. The rationale for involvement in smoking cessation for pharmacists is highlighted using core professional values.

Finally, TCC is only one component of lifestyle change that may reduce the burden of preventable illness and disability. Techniques for TCC based on principles of motivational interviewing can be adapted to promote changes in other health behaviors such as alcohol consumption, illicit drug use, sedentary lifestyle, and poor nutrition. Each of these areas requires further efforts toward improving physical therapist practice and education.

Limitations
Several limitations to this study should be noted. Although the entire population of CAPTE-accredited physical therapist programs within the United States and Puerto Rico were queried, the sample includes only 1 representative from each of the 146 programs that responded. This response rate of 71% is comparable to previous surveys of professional faculty examining professional training in TCC: 75% return rate for respi-
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Dr Pignataro, the faculty member who provided education programs would benefit from incorporation of evidence-based TCC training guidelines to help students better prepare for assisting their patients to become tobacco-free. Future initiatives should be designed to promote a change in physical therapist educational content by designing time-efficient and evidence-based training modules to be incorporated into entry-level education curriculum. By increasing the number of graduating physical therapists who are trained in TCC, more people with physical disabilities may successfully quit smoking, which, in turn, may improve outcomes of physical therapy intervention.

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References

1 Armour BS, Campbell VA, Crews JE, et al. State-level prevalence of cigarette smoking and treatment advice, by disability status, United States, 2004. Prev Chronic Dis. 2007;4:A86.

2 Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000 [erratum in: JAMA. 2005;293:293–294; JAMA. 2005;293:298]. JAMA. 2004;291:1258–1245.

3 Pignataro RM, Ohtake PJ, Swisher AK, Dino G. The role of physical therapists in smoking cessation: opportunities for improving treatment outcomes. Phys Ther. 2012;92:757–766.

4 Bodner ME, Dean E. Advice as a smoking cessation strategy: a systematic review and implications for physical therapists. Physiother Theory Pract. 2009;25:359–407.

5 Bodner ME, Miller WC, Rhodes RE, Dean E. Smoking cessation and counseling: knowledge and views of Canadian physical therapists. Phys Ther. 2011;91:1051–1062.

6 Sheffer CE, Barone CP, Anders ME. Training health care providers in the treatment of tobacco use and dependence: pre- and post-training results. J Eval Clin Pract. 2009;15:607–613.

7 Becker H, Brown A. Disparities in smoking behaviors among those with and without disabilities from 2001 to 2005. Public Health Nurs. 2008;25:526–535.

8 Bodner ME, Rhodes RE, Miller WC, Dean E. Benchmarking curriculum content in entry-level health professional education with special reference to health promotion practice in physical therapy: a multi-institutional international study. Adv Health Sci Educ Theor Pract. 2013;18:645–657.

9 Rea BL, Hopp Marshak H, Neish C, Davis N. The role of health promotion in physical therapy in California, New York, and Tennessee. Phys Ther. 2004;84:510–523.

10 McLaughlin C. Giving smokers a boost to kick the habit. Adv Phys Ther Rehab Med. 1997. Available at: http://physical-therapy.advanceweb.com/article/giving-smokers-a-boost-to-kick-the-habit.aspx. Accessed May 20, 2014.

11 Fiore MC, Croyle RT, Curry SJ, et al. Preventing 3 million premature deaths and helping 5 million smokers quit: a national action plan for tobacco cessation. Am J Public Health. 2004;94:205–210.

12 Dean E. Physical therapy in the 21st century (part 1): toward practice informed by epidemiology and the crisis of lifestyle conditions. Physiotherapy Pract. 2009;25:330–353.

13 Koerber A, Crawford J, O’Connell K. The effects of teaching dental students brief motivational interviewing for smoking-cessation counseling: a pilot study. J Dent Educ. 2003;67:439–447.

14 Corelli RL, Kroon LA, Chung EP, et al. Statewide evaluation of a tobacco cessation curriculum for pharmacy students. Prev Med. 2005;40:888–895.

15 Evans MW Jr, Hawk C, Strasser S. An educational campaign to increase chiropractic intern advising roles on patient smoking cessation. Chiropr Osteopat. 2006;14:24.

16 Hu S, Pallonen U, McCallister AL, et al. Knowing how to help tobacco users: dentists’ familiarity and compliance with the clinical practice guideline. J Am Dent Assoc. 2006;137:170–179.

17 Ohtake PJ, Homish G. Smoking cessation counseling skills and confidence are increased in DPT students following communication skills education. Cardiopulm Phys Ther J. 2010;21:27.

18 Fiore MC, Jaen CR, Baker TB, et al. Treating Tobacco Use and Dependence: 2008 Update. Rockville, MD: US Dept of Health and Human Services; 2008. Clinical Practice Guideline.

19 Fiore MC, Bailey WC, Cohen S. Treating Tobacco Use and Dependence: Quick Reference Guide for Clinicians. Rockville, MD: US Dept of Health and Human Services; 2000.

20 Arnett MR, Baba NZ, Cheek D. Improving tobacco dependence education for dental and dental hygiene students at Loma Linda University School of Dentistry. J Dent Educ. 2012;76:472–478.

21 Geller AC, Zapka J, Brooks KR, et al. Tobacco control competencies for US medical students. Am J Public Health. 2005;95:990–995.
Tobacco Cessation Counseling Training in Physical Therapist Curricula

22 Davis JM, Stockdale MS, Cropper M. Evaluation of a comprehensive tobacco cessation curriculum for dental hygiene programs. J Dent Educ. 2010;74:472–479.

23 Warren CW, Jones NR, Chauvin J, Peruga A. Tobacco use and cessation counseling: cross-country: data from the Global Health Professions Student Survey (GHPSS), 2005–2007. Tob Control. 2008;17:238–247.

24 Commission on Accreditation in Physical Therapy Education. Accredited physical therapist education programs; 2010. Available at: www.capteonline.org/apta/directories/accreditedschools.aspx?type=PT&navID=10737421958. Accessed May 20, 2014.

25 Ferry LH, Grissino LM, Runfola PS. Tobacco dependence curricula in US undergraduate medical education. JAMA. 1999;282:825–829.

26 Wewers ME, Kidd K, Armbruster D, Sarna L. Tobacco dependence curricula in US baccalaureate and graduate nursing education. Nurs Outlook. 2004;52:95–101.

27 Hornberger CA, Edwards LC. Survey of tobacco cessation curricula in Kansas nursing programs. Nurs Educ. 2004;29:212–216.

28 Hudmon KS, Prokhorov AV, Corelli RL. Tobacco cessation counseling: pharmacists' opinions and practices. Patient Educ Couns. 2006;61:152–160.

29 O'Donnell JA, Hamilton MK, Markovic N, Close J. Overcoming barriers to tobacco cessation counselling in dental students. Oral Health Prev Dent. 2010;8:117–124.

30 Montalto NJ, Ferry LH, Stanhiser T. Tobacco dependence curricula in undergraduate osteopathic medical education [erratum in: J Am Osteopath Assoc. 2004;104:308]. J Am Osteopath Assoc. 2004;104:317–323.

31 Ajzen I, Madden T. Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. J Exp Soc Psychol. 1986;22:453–474.

32 Feifer C, Fifer J, Ornstein S, et al. From research to daily clinical practice: what are the challenges in “translation”? [erratum in: Jt Comm J Qual Saf. 2004;30:413]. Jt Comm J Qual Saf. 2004;30:235–245.

33 Harris JL, Patton LL, Wilder RS, et al. North Carolina dental hygiene students' opinions about tobacco cessation education and practices in their programs. J Dent Educ. 2009;73:539–549.

34 Fowler F. Survey Research Methods. 4th ed. Thousand Oaks, CA: Sage Publications; 2009.

35 Glynn T, Manley M. How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians. Bethesda, MD: National Institutes of Health; 1995.

36 Richmond R, Zwar N, Taylor R, et al. Teaching about tobacco in medical schools: a worldwide study. Drug Alcohol Rev. 2009;28:484–497.

37 Shilby O. Effect of tobacco counseling by dental students on patient quitting rate. J Dent Educ. 2009;74:140–148.

38 Barker GJ, Williams KB, Taylor BS, Barker BF. Practice behaviors of alumni trained as students in tobacco use cessation interventions. J Dent Hyg. 2001;75:165–169.

39 An LC, Bluhm J, Foldes S, et al. Clinical system elements and patient reports of tobacco cessation counseling. J Clin Outcomes Manag. 2008;15:485–492.

40 Dejong G, Palsbo SE, Beatty PW, et al. The organization and financing of health services for persons with disabilities. Milbank Q. 2002;80:261–301.

41 An LC, Foldes SS, Alesi NL, et al. The impact of smoking-cessation intervention by multiple health professionals. Am J Prev Med. 2008;34:54–56.

42 Curry SJ, Keller PA, Orleans CT, Fiore MC. The role of health care systems in increased tobacco cessation. Annu Rev Public Health. 2008;29:411–428.

43 Cornuz J, Humair JP, Seematter L, 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.

44 Hudmon K, Corelli R. ASHP therapeutic position statement on the cessation of tobacco use. Am J Health Syst Pharm. 2006;63:291–307.

45 Gordon JS, Istvan J, Haas M. Tobacco cessation via doctors of chiropractic: results of a feasibility study. Nicotine Tob Res. 2010;12:305–308.

46 Messer K, Trinidad DR, Al-Delaimy WK, Pierce JP. Smoking cessation rates in the United States: a comparison of young adult and older smokers. Am J Public Health. 2008;98:317–322.

47 Jordan TR, Khubchandani J, Wiblishauser M, et al. Do respiratory therapists receive training and education in smoking cessation: a national study of post-secondary training programs. Patient Educ Couns. 2011;85:99–105.