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Research Report

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

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Abstract

Background: The United States Public Health Service (USPHS) recommends tobacco cessation counseling (TCC) training for all healthcare professionals. Within physical therapy 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: Determine need for TCC training within entry-level physical therapist education, and identify potential barriers to implementation of USPHS guidelines in the academic environment

Design: Descriptive cross-sectional survey

Methods: Directors or Academic Coordinators of Clinical Education from entry-level PT 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 towards TCC in both physical therapist practice and education were analyzed descriptively.

Results: Response rate was 71%. A majority (60%) of programs indicated inclusion of tobacco-related training, mostly commonly 1-2 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 the program.

Conclusions: There is a need for TCC training in entry-level PT education. Inclusion may be facilitated by addressing perceived barriers towards TCC as a component of PT practice and promoting the relevance of TCC as it relates to intended outcomes of physical therapy interventions.

Background

Smoking cessation 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 non-disabled peers, people with disabilities are less likely to receive tailored TCC, and less likely to make a quit attempt.[1-7] Since smoking exacerbates pre-existing conditions, people with disabilities are also 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 less than 20% of patients who smoke received TCC during their most recent healthcare 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, demonstrates 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, Dr. Marilyn Moffat.[10] One reason behind this persistent shortcoming is that many health 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 guidelines developed by the Agency for Health Care Quality and Research (AHRQ)[18] and endorsed by the United States Public Health Service (USPHS),[19] have been successfully employed 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, less 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]

While 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 therapy 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 within 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 or not 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 entry-level physical therapists. The primary objectives were to determine the prevalence of evidence-based TCC training among entry-level physical therapist education programs within the United States, and explore the opinions and perspectives of faculty regarding the inclusion of TCC as a component of physical therapist education and practice. USPHS/AHRQ 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.

Methods

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 within the United States and Puerto Rico that are recognized by CAPTE.[24] This instrument was modeled after previous studies examining the scope and content of evidence-based TCC among American medical schools[25] and nursing education,[26,27] and the implementation of TCC guidelines in pharmacy practice[28] as well as dental medicine.[29] Items regarding tobacco-related content centered on the USPHS/AHRQ 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.[3,5,26,30]

In order to identify existing prevalence and scope of TCC training among entry-level physical therapist educational programs, items included the number of hours devoted to tobacco-related content, and the type of teaching methods employed, including whether students were given the opportunity to apply skills in a simulated and/ 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 towards TCC were based upon 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/ PHS clinical guidelines,[19] as well as the availlability of necessary resources including time needed for application of TCC guidelines in clinical practice settings,[30] the ability and opportunity to establish TCC training within pre- and post-professional 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 pre-tested 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 towards 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, e.g. – "The 5 A's and 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 board of the sponsoring universities. With the exception of program name, individual responses were anonymous. The survey was administered using Qualtrics Online Survey Software (Provo, Utah). Respondents from each physical therapy 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 the 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.

Analysis

Data analyses were conducted using SPSS software, Version 16 (IBM Corporation, Armonk, NY). Descriptive statistics included frequency counts and percentages to reflect program demographics and faculty characteristics. Frequency counts and percentages were also used to describe prevalence and scope of tobacco-related training content at each of the programs represented. Faculty support for the inclusion 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 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 52 years (SD 8, range 32-69 years), a mean of 26 years of experience as a physical therapist (SD 9, range 6-46 years), and a mean of 17 years of experience in an academic environment (SD 9, range 1-40 years). Primary teaching responsibilities were weighted towards 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 respondents continuing to provide direct patient care in addition to teaching. Nearly all

respondents (96%) were members of the American Physical Therapy Association (APTA), 34% were familiar with the AHRQ/ USPHS clinical guidelines, 27% had received prior training in screening patients for tobacco use, and 11% had received prior training in screening 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 can be found in Table 1.

Prevelance 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 include skills based on the application of AHRQ/ PHS clinical guidelines, i.e. "The 5 A's and The 5 R's." Training in other relevant skills such as screening patients for tobacco use and nicotine addiction was present in 67% and 40% of programs, respectively (see Table 2). Other commonly addressed issues were effects of secondhand smoke and effect 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 (see Table 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 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 which also include "The 5 A's," such as a

cardiopulmonary physical therapy textbook, smoking cessation website, or the perspective paper published by the authors.[3] 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 Towards 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 agreed that physical therapists should screen patients for tobacco use (84%). However, opinions towards 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 towards TCC in the clinical and academic environment 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 quite evenly divided on opinions regarding other potential barriers towards 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 towards TCC (33% disagreed). Faculty opinions towards aspects of TCC can be found 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 entry-level and post-professional doctorates in physical therapy (See Table 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' entry-level training. Several survey respondents expressed concern regarding physical therapists' scope of practice, stating that referral to another health care practitioner with greater counseling expertise might be best. One respondent wrote that TCC should not interfere with the client's physical therapy treatment, i.e. – the primary reason for physical therapy intervention, and another 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 found that while a majority of physical therapist entry-level educational programs include some degree of student training in tobacco-related content, although fewer 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 therapy students who have received training. However, based on the large percentage of programs which include tobacco-

related content (75%), it is likely that the proportion of physical therapy 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 entry-level education.[23]

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 training,[30] and nearly 33% of US medical programs which reported 3 hours or less.[35] Previous studies have shown the benefits of TCC training for health professions students. Approximately 88% of dentists and 98% of dental hygienists who were trained as students routinely advised patients to quit smoking.[36]

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 5 R's" are closely compatible with existing patient education methods currently employed 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 using a strong, personalized message; assessing the patient's willingness to quit; 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 based on individual values and circumstances. The patient should also be counseled in identifying potential risks, or

negative consequences of smoking, along with the rewards, or benefits of cessation. The physical therapist can also help patients identify roadblocks, or barriers, to cessation, and should be prepared to repeat counseling at other opportunities within the episode of care.

According to prior research, physicians are the most likely providers to offer TCC services.[37] 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 successes, and expressing empathy for difficulties encountered during the cessation attempt.[18] 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.[3]

While people with disabilities have higher utilization of medical services overall, this does not typically result in increased access to preventive services.[38] Although many medical professionals screen for tobacco use, for those with disabilities, other issues may take precedence over TCC. Therefore, an interprofessional approach is essential: receiving advice from two or more health care practitioners more than doubles the odds of successful smoking cessation.[39] It has been estimated that national implementation of the AHRQ TCC guidelines would result in 5 million less smokers each year, with the prevention of more than 3 million premature deaths.[37]

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 - $3590 per year of life preserved.[40] Among medical residents, TCC training increased the likelihood of counseling and improved the efficacy of provider advice in promoting smoking cessation.[41] In pharmacy students, training increased intention to perform TCC, with 97% of students reporting a belief that TCC training would improve the quality of their patient interactions.[14]

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 professions, potential barriers towards TCC education included a lack of awareness, training and/ or perceived relevance of TCC among program faculty, along with a lack of curricular resources.[30] Within the current sample of physical therapist educators, only 34% indicated familiarity with the AHRQ/ PHS guidelines for TCC, i.e. "The 5 A's and 5 R's," 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 student physical therapists 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 regards to typical physical therapy clientele, diagnoses and treatment outcomes, as well as factors within 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.[30] 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 for Physical Therapy Education as well as CAPTE criteria." Another wrote, "This is an important topic, and I would love to see a specific stance taken by the APTA on what the physical therapist's role should be with this." An example of professional initiatives in smoking cessation can be found in the American Society of Health-System Pharmacists (ASHP) therapeutic position statement on tobacco cessation.[42] 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.[42] Rationale for involvement in smoking cessation for pharmacists is highlighted using core professional values.[42]

Future research should examine the prevalence of TCC training for physical therapist assistants, since they are an integral part of the patient care team and can play a pivotal role when working cooperatively to address patients' needs for behavioral change. In addition, studies regarding the results of TCC training and impact of training on TCC behaviors among practicing physical therapists will be valuable in assessing implementation of evidence-based TCC guidelines. For example, patient counseling delivered by chiropractors following TCC training yielded a 22.4% abstinence rate at 12-month follow-up for patients who smoked,[43] while TCC by dental students following appropriate training yielded a 22% quit rate.[44] This is in contrast to a 5% cessation rate among adults who attempt to quit unaided.[45] Physical therapists are already

highly skilled in patient education. It is likely that tailored TCC training for physical therapists could achieve similar smoking cessation rates, particularly among people with disabilities.

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 in order to promote changes in other health behaviors such as alcohol consumption, illicit drug use, sedentary lifestyle, and poor nutrition.[8] Each of these areas requires further efforts towards 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 only includes 1 representative from each of the 146 programs who responded. This response rate of 71% is comparable to previous surveys of professional faculty examining professional training in TCC: 73% return rate for respiratory therapy program directors,[46] and a return rate of 89.5% for schools of osteopathic medicine.[30] However, the small number of responses in some data cells made it impossible to perform categorical analyses of associations between faculty support for TCC within physical therapist practice and education, and the inclusion of tobacco-related topics within program curricula. Additional limitations include the possible bias based on social desirability. This was potentially mitigated by the anonymous nature of responses. A direct assessment of the curricula from each program was not performed, and results are thereby constrained by the knowledge and familiarity of the faculty member who responded to the survey.

Conclusions

Training in TCC is not currently a widespread component of entry-level physical therapist practice or education, despite the great need for tobacco cessation interventions for people with physical disabilities and the potential impact of smoking on physical therapy treatment outcomes. Physical therapist educational 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 educational curricula. By increasing the number of graduating physical therapists who are trained in TCC, more people with physical disabilities may successfully quit smoking, which may, in turn, improve outcomes of physical therapy intervention.

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Table 1: Program and faculty characteristics

Program Characteristics (N = 116)	**Descriptive Statistics Frequency (%) or Mean (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)	
Respondent's age	51.4 (8.3) [32-69] years
Respondent's sex	67.8% female
Smoking status • Nonsmoker • Former smoker	 100% 14%
Years of experience as a physical therapist	26.1 yrs (9.0) [6-46] Missing: 2%
Years of experience in academic instruction	16.4 yrs (8.9)[1-40]
Familiar with AHRQ guidelines for TCC ("5 A's and 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 TCC guidelines **Of those who have received training:** • Have the self-rated knowledge and skill to apply the 5 A's • Have the self-rated knowledge and skill to apply the 5 R's	Yes: 12% No: 78% Missing: 10% Yes: 94% No: 6% Missing: 0% Yes: 6% No: 94% Missing: 0%
Faculty member is a physical therapist Member of the APTA (limited to those who were physical therapists, N = 144)	Yes: 96% No: 0% Missing: 4% 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 degree	61%
• Master's degree	27%
• Doctorate	3%
• Other – not a PT	3%
Terminal degree	
• Master's degree	12%
• PhD or other academic doctorate	53%
• DPT	7%
• tDPT	22%
• DPT, plus academic doctorate	3%
• Other (JD, MD, RN, DDS …)	3%
Missing Responses	<1%
Area of Clinical Specialization	
• 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)	
• Cardiopulmonary	28%
• Clinical Education	20%
• Professional Practice/ Ethics	9%
• Other (e.g. – Health Promotion and Wellness, Women's Health, Geriatrics …)	23%
• Basic Sciences – (e.g – pathology, histology …)	6%
• Research/ Critical Inquiry	6%
• Musculoskeletal/ Orthopedics	4%
• Physical Therapy Interventions (e.g. – modalities, therapeutic exercise, manual therapy …)	4%
• Other (includes wound management, women's health)	14%
Missing responses	<1%

Table 2 – Components of Tobacco-Related Content in Program Curriculum (N=146)

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, ALS and MS	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%

Table 3 – Characteristics of Tobacco Related Content (N=87)

Tobacco-Related Course Content and Characteristics	Percent
Hours of Training	
• 1 to 2 hours	82%
• 3 to 4 hours	11%
• 5 hours or more	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 (e.g. – cardiopulmonary physical therapy textbook, smoking cessation website, perspectives article by the authors[3])	43%

Table 4 – Faculty Opinions Regarding Inclusion of TCC in Physical Therapist Practice and Education (N=137)

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Missing (%)
All PT clients should be screened for tobacco use	43	41	10	4	1	1
PTs should provide TCC for clients who smoke	12	31	31	21	3	2
Smoking has adverse effects on PT treatment outcomes for cardiopulmonary conditions	80	19	1	0	1	0
Smoking has adverse effects on PT treatment outcomes for orthopedic conditions (musculoskeletal impairments)	55	33	10	0	1	0
Smoking has adverse effects on PT treatment outcomes for neurological conditions	54	37	8	0	1	0
Smoking has adverse effects on PT treatment outcomes for wound management	74	23	3	0	1	0
Training in tobacco screening should be a part of entry-level PT education	35	46	12	5	0	2
Training in	15	35	25	19	4	1

tobacco cessation counseling should be a part of entry-level PT education						
Nicotine can be as addictive as heroin or cocaine	**47**	**42**	**9**	**1**	**0**	**1**
Brief counseling (5 minutes) can be an effective intervention for smoking cessation	**10**	**19**	**38**	**23**	**9**	**1**
TCC is an important aspect of PT patient education	**12**	**43**	**30**	**10**	**1**	**3**
People who smoke are not interested in receiving cessation advice from the PT	**4**	**20**	**39**	**29**	**6**	**2**
PTs should NOT provide TCC because this service is not reimbursed by third party payers	**2**	**4**	**22**	**53**	**18**	**2**
PTs do not have enough time in their schedule to make TCC a priority	**6**	**29**	**29**	**28**	**5**	**3**

Table 5 – Faculty Characteristics Related to Support for TCC in PT Practice and Education (N = 137)

Characteristic	Supports TCC in PT Practice (%)	Supports TCC in PT Education (%)
Respondent's Age In Years :		
• 20 – 30	NA	NA
• 31 – 40	88%	90%
• 41-50	84%	84%
• 51-60	64%	62%
• 61-70	38%	54%
• 71 and older	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 and over	61%	72%
• Missing data	33%	37%
Years of teaching experience:		
• 0 to 5	67%	75%
• 6 to 10	78%	83%
• 11 to 15	94%	80%
• 16 to 20	35%	35%
• 21 and over	58%	70%
• Missing data	40%	35%
Entry-level physical therapy degree:		
• Bachelor's degree	60%	63%
• Post-baccalaureate certificate	60%	25%
• Master's degree	70%	79%
• DPT	100%	100%
• Other (not a PT)	100%	100%
• Missing data	41%	37%
Highest earned degree (in any field of study):		
• Bachelor's degree	100%	100%
• Master's degree	63%	70%

• **PhD or equivalent (e.g. – ScD, EdD)**	**61%**	**66%**
• **DPT**	**100%**	**100%**
• **tDPT**	**63%**	**67%**
• **DPT and PhD/ equivalent**	**50%**	**33%**
• **Missing data**	**41%**	**37%**

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

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