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Pain Education Training in New York State Physical Therapy Programs: What We Do Well, Where the Gaps Are, and What Can Be Improved

Joseph Tatta

Integrative Pain Science Institute, joe@integrativepainscienceinstitute.com

Marcia Spoto

Nazareth College, mspoto7@naz.edu

Joseph Lorenzetti

Catholic Health, joelorenzetti@yahoo.com

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Pain Education Training in New York State Physical Therapy Programs: What We Do Well, Where the Gaps Are, and What Can Be Improved

Abstract

Purpose: Essential pain education produces graduates who are competent in contemporary pain management. Despite various educational resources, surveys demonstrate minimal pain content in entry-level physical therapist education programs. This paper examines 1) the learning content of pain education and faculty expertise teaching core pain content, 2) whether pain education content is sufficient to prepare physical therapists to meet the needs of contemporary pain management, and 3) whether standardization of pain education in entry level Doctor of Physical Therapy (DPT) programs is advantageous. **Methods:** A pain education survey was developed and sent to all accredited DPT program directors in New York State. The survey included questions related to content and hours devoted to teaching 1) pain science, 2) pain education, 3) psychosocial factors, 4) biopsychosocial model, 5) cognitive-behavioral techniques, 6) advanced faculty training, and 7) challenges adding pain education to the curriculum. **Results:** In total, 10/15 programs responded. (1) 60% reported they do not have a class dedicated to pain science, (2) 60% reported < 10 hours of pain education (3) 60% reported a class on psychosocial factors, (4) 50% reported < 10 hours on the biopsychosocial model, (5) cognitive- behavioral techniques varied between 10-30 hours, (6) 70% of faculty received advanced training, and (7) challenges to adding pain education included time, a dense curriculum, and pain content is not part of NPTE exam questions. **Conclusions and Recommendations:** New York State accredited DPT programs include pain education, although content, time, and methods vary greatly. Increased standardization for pain education would create consistency across all U.S. DPT programs. Based on the findings from the study, an investigation should be undertaken to determine if more specific standards for pain education are advantageous for the entry level DPT curricula.

Author Bio(s)

Joe Tatta, PT, DPT is the founder of the Integrative Pain Science Institute, a cutting-edge health company reinventing pain care through evidence-based treatment, research, and professional development. His research and career achievements include scalable practice models centered on health behavior change, integrative medicine, and methods that empower physical therapists to serve at the top of their scope of practice as primary providers of healthcare. He is a speaker, author, hosts a podcast, adjunct professor, and guest lecturer in many DPT programs.

Marcia Spoto, PT, DC is Professor Emerita at Nazareth College in Rochester, NY. She received a bachelor's degree in physical therapy from Daemen College in Amherst, New York and a Doctor of Chiropractic degree from Palmer College in Davenport, Iowa. She is certified as an Orthopedic Specialist by the American Board of Physical Therapy Specialties. Dr. Spoto has over 35 years of clinical experience, with a practice focus in spine care. Her teaching responsibilities were in the areas of musculoskeletal management and differential diagnosis. She is the owner of STAR Physical Therapy in Fairport, NY. She currently serves on the American Physical Therapy Association Orthopaedic Practice Committee and is co-chair of the New York Physical Therapy Association Public Policy Committee. She is a consultant for Excellus Blue Cross & Blue Shield, and is a member of the faculty of the Excellus BC & BS Spine Care Pathway program. She also serves as a member of the greater Rochester's Community Principles of Pain Management advisory board.

Joe Lorenzetti, PT, DPT, MS, OCS, FAAOMPT, Cert. MDT, MTC, graduated from D'Youville College in 2004 with his Master's degree in physical therapy. In 2010, he completed his Doctorate in physical therapy through the University of St. Augustine in St. Augustine, Florida. Joe also earned his Manual Therapy Certification through the same University. He is also certified in Mechanical Diagnosis and Therapy (MDT). He finished the Orthopedic Manual Physical Fellowship offered by Daemen College in 2014. He most

recently completed the orthopedic clinical specialist examination through the American Physical therapy Association. Joe serves as a Fellowship mentor for the McKenzie Institute and Daemen College. He is also an adjunct instructor for both the Bryant & Stratton College Physical Therapy Assistant program and the Daemen College Orthopedic Manual Physical Therapy program. He is the Clinical Specialist for the spine program at Catholic Health System in Buffalo, NY.



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Pain Education Training in New York State Physical Therapy Programs: What We Do Well, Where the Gaps Are, and What Can Be Improved

Lessons from New York State Physical Therapy Programs

Joseph Tata¹

Marcia Spoto²

Joseph Lorenzetti³

1. Integrative Pain Science Institute
2. Nazareth College
3. Catholic Health

United States

ABSTRACT

Purpose: Essential pain education produces graduates who are competent in contemporary pain management. Despite various educational resources, surveys demonstrate minimal pain content in entry-level physical therapist education programs. This paper examines 1) the learning content of pain education and faculty expertise teaching core pain content, 2) whether pain education content is sufficient to prepare physical therapists to meet the needs of contemporary pain management, and 3) whether standardization of pain education in entry level Doctor of Physical Therapy (DPT) programs is advantageous. **Methods:** A pain education survey was developed and sent to all accredited DPT program directors in New York State. The survey included questions related to content and hours devoted to teaching 1) pain science, 2) pain education, 3) psychosocial factors, 4) biopsychosocial model, 5) cognitive-behavioral techniques, 6) advanced faculty training, and 7) challenges adding pain education to the curriculum. **Results:** In total, 10/15 programs responded. (1) 60% reported they do not have a class dedicated to pain science, (2) 60% reported < 10 hours of pain education (3) 60% reported a class on psychosocial factors, (4) 50% reported < 10 hours on the biopsychosocial model, (5) cognitive- behavioral techniques varied between 10-30 hours, (6) 70% of faculty received advanced training, and (7) challenges to adding pain education included time, a dense curriculum, and pain content is not part of NPTE exam questions. **Conclusions and Recommendations:** New York State accredited DPT programs include pain education, although content, time, and methods vary greatly. Increased standardization for pain education would create consistency across all U.S. DPT programs. Based on the findings from the study, an investigation should be undertaken to determine if more specific standards for pain education are advantageous for the entry level DPT curricula.

Keywords: physical therapy, chronic pain, pain education

INTRODUCTION

Over the past 25 years, the United States (US) has seen chronic pain rates increase alongside a dramatic increase in opioid overdose, opioid use disorder (OUD), and other harms from the overprescribing of opioid medications for pain management.¹ More than 60% of Americans who die from an opioid overdose suffered from chronic pain.² Experts agree that the current crisis is rooted in the over-prescription of opioids that began more than two decades ago. In the U.S., there were 67,367 drug overdose deaths reported in 2018.³ As a practicing physical therapists in the State of New York we have firsthand experience of how the chronic pain and opioid epidemic has devastated human life, along with their families, friends, and communities. In New York State, the number of prescription opioid-related deaths has nearly quadrupled over ten years. In 2018, there were 2,991 overdose deaths involving opioids in New York State—a rate of 15.4 deaths per 100,000 persons.⁴ The treatment of chronic pain and opioid use disorder is one of New York State's greatest health challenges and places a strain on state public health resources. The effective and safe treatment of pain is a priority for physical therapists in New York State and nationwide.

For chronic pain, current recommendations are to avoid prescribing opioids unless other approaches to analgesia have failed or are contraindicated.⁵ Several advances in understanding pain and its treatment have occurred since the release of the 2011 Institute of Medicine report, *Relieving Pain in America*.⁶ Nonpharmacologic pain treatment, including exercise therapy, cognitive-behavioral techniques, sleep promotion, stress reduction, and nutrition, are now recognized as evidence-supported interventions for the management of pain.⁷⁻¹⁰ Many of these treatments are components of entry-level physical therapist education and successful self-management programs delivered by physical therapists.¹¹

Background

The opioid crisis lies at the intersection of two significant public health challenges—reducing the burden of suffering related to pain and minimizing the harms that result from the use of excessive opioid medications. Physical therapy has been proposed as means of preventing and treating chronic pain as well as an alternative to opioids. Approximately 75% percent of all patients referred to outpatient physical therapy have pain as their primary symptom.¹² Early physical therapy for patients with pain has been associated with improved function and reductions in long-term opioid use and lower-intensity opioid use for patients with musculoskeletal conditions.¹³ Optimal pain management requires physical therapists to be prepared to evaluate and manage a multitude of biological, psychological, and social factors related to pain.¹⁴

Educating and training physical therapists in optimal pain management begins in entry-level physical therapist education programs. The Commission on Accreditation of Physical Therapy Education (CAPTE) is responsible for establishing standards¹⁵ which aim to prepare physical therapists to serve as primary care providers for a broad range of chronic pain conditions in diverse pediatric, adult, and geriatric populations. CAPTE standards include content and learning experiences in the biological, physical, behavioral, and movement sciences necessary for entry level physical therapy practice. Like most healthcare professions, there is a heavy emphasis on the biological aspects of pain versus behavioral components.

Most physical therapist education programs integrate information about pain within different components of the curriculum and CAPTE standards are currently organized around required elements.¹⁶ These standards and elements address content in biopsychosocial aspects of pain assessment and treatment, although pain management is also found within the elements of practice.¹⁵ With the increase in societal demands for nonpharmacologic pain management,¹⁷ it is appropriate for the profession of physical therapy to determine if more specific standards for pain education are advantageous for the entry level DPT curricula. If we knew the specific pain content being taught in the entry level DPT curricula, then we could better assess the preparedness of DPTs to treat pain and opioid use disorders.

Pain Education in Physical Therapist Curricula

Variations in pain education among healthcare workers contributes to human suffering and the economic costs of individuals, families and healthcare systems.¹⁸ The lack of consistent standards in pain education exist across many health disciplines including, physical therapy.¹⁹ Leaders within the physical therapy profession as well as international associations have provided recommendations.²⁰ In 2011, the Institute of Medicine (IOM) investigated pain as a public health problem.^{1,21} In their published report on this investigation, physical therapists were among the healthcare professions identified as requiring a higher level of preparation for pain education. The report did not specify or recommend specific pain related content or the number of hours to dedicate to pain education in a curriculum.

The International Association for the Study of Pain (IASP) was established in 1973 to promote pain research and improve pain management. Part of the mandate of IASP is to develop and disseminate educational guidelines for health care professionals, including physical therapists. In 2012, the IASP Education Initiatives Working Group developed pain curricula for health professionals. IASP encourages the adoption of standardized programs of pain education in health professional academic

programs. Although the IASP curricula for physical therapists do not include specific recommendations for contact hours, it does recommend that pain education be taught as an independent course.²² They also recommended that educators expand and redesign education programs to address the understanding of pain for pre-licensure professionals. The IASP Pain Curriculum for Physical Therapy has been embedded into a 3-year pre-licensure Doctor of Physiotherapy Program in Australia. Graduates from this new program improved their knowledge about pain and achieved a high level of clinical competencies in pain management.²³

Specific pain education content and contact hours have been examined in previous studies in United States physical therapist education programs. A 2009 faculty survey of pain education in 169 physical therapist education programs in North America reported the average amount of time for pain education was 4 hours.²⁴ The majority of the faculty reported that pain was adequately covered in their curriculum, however their perceptions of the competency of graduates to assess and treat individuals with chronic pain was low. Furthermore, only 33 percent of the program respondents reported that cognitive-behavioral approaches to pain management were adequately covered.

In 2015, a nationwide survey of physical therapist educational programs in the United States examined pain education within the curricula.²⁵ The aim of the survey was to determine the extent of pain education in entry-level physical therapist education programs, how pain is incorporated into the curriculum, and the amount of time spent teaching about pain. The survey consisted of 10 questions in the following subject areas: basic science mechanisms and concepts about pain, pain assessment, pain management, and adequacy of pain curriculum. This nationwide survey reported 61% of physical therapist education programs believed their graduates received adequate pain education. The total average contact hours devoted to pain education was 31 hours (ranging from 5 to 115 hours). The average time spent on specific content areas varied from 9.5 hours on pain science, 3.2 hours on pain education to 2.7 hours on psychological management.

Opioid Education in Physical Therapist Curricula

Historically, physical therapists have addressed the opioid problem through prevention, offering nonpharmacologic treatments for pain.²⁶ However, physical therapists may work in practice settings which require them to screen for opioid misuse or treat individuals with simultaneous painful conditions and OUD. Both groups of patients require physical therapists to possess skills across multiple domains of the biopsychosocial model. A recent 2019 study in the *Journal of Disability and Rehabilitation* proposed a model on how to develop educational principles for physical therapist education programs relative to the opioid crisis.²⁷ This study outlined a set of core principles to guide physical therapy education: 1) screening and education 2) interprofessional care, and 3) the movement system. The details of the core principles include education for students to use contemporary, evidence-based pain education as well as cognitive-behavioral techniques for opioid use and OUD. Interestingly, CAPTE standards do not currently address the role of physical therapists in managing patients with OUD in the curricula of entry-level physical therapist education programs.

Purpose of the Study

New York State is the nation's fourth most populated state with 19.5 million people.²⁸ The State has one of the highest concentrations of entry-level physical therapist education programs in the United States²⁹ yet pain education in New York State DPT education programs is largely unknown. Graduates from these programs are likely to serve people with chronic pain and opioid use disorder throughout the country. Thus, this current educational pain study was developed to determine the extent of pain education content and hours in New York State entry-level DPT programs. Therefore, the aims of this investigation were to determine: 1) the learning content of pain education and faculty expertise teaching core pain content, 2) whether pain education content is sufficient to prepare physical therapists to meet the needs of contemporary pain management, and 3) whether standardization of pain education in entry level Doctor of Physical Therapy (DPT) programs is advantageous.

METHODS

A list of DPT programs (n=15) was obtained from the New York Physical Therapy Association. A pain education survey was created following good practice in conduct and reporting of surveys³⁰ and then emailed to the Directors of all accredited entry level DPT programs in New York. The department chairs were notified by the primary investigator (JT) of the intent to explore content with regard to pain education in entry-level education. Information regarding the questionnaire and an electronic link to the survey was included in the email. The survey was anonymous; no identifiable data on any individual or school were collected in this survey.

Table 1. Pain education survey results from 10 New York State entry-level DPT education programs

Pain Education Survey		
Q1: Do you have a class dedicated to pain science as part of your curriculum?		
Answer Choices	Responses	Number
Yes	40%	4
No	60%	6
Total		10
Q2: How many total hours are dedicated to pain science education in your curriculum?		
Answer Choices	Responses	Number
Less than 10 hours	60%	6
10-15 hours or equivalent to 1-credit course	20%	2
15-30 hours or equivalent to 2-credit course	10%	1
30-40 hours or equivalent to 3-credit course	10%	1
Total		10
Q3: Do you have a class dedicated to the psychosocial factors associated with pain?		
Answer Choices	Responses	Number
Yes	60%	6
No	40%	4
Total		10
Q4: How many total hours are dedicated to the biopsychosocial model of pain in your curriculum?		
Answer Choices	Responses	Number
Less than 10 hours	50%	5
10-15 hours or equivalent to 1-credit course	10%	1
15-30 hours or equivalent to 2-credit course	30%	3
30-40 hours or equivalent to 3-credit course	10%	1
Total		10
Q5: How many total hours are dedicated to specific cognitive-behavioral techniques to treat pain such as mindfulness, relaxation, visualization, CBT, or graded exposure?		
Answer Choices	Responses	Number
Less than 10 hours	30%	3
10-15 hours or equivalent to 1-credit course	40%	4
15-30 hours or equivalent to 2-credit course	20%	2
30-40 hours or equivalent to 3-credit course	0%	1
Total		10
Q6. Have members of your faculty received advanced training in pain science education or psychological informed physical therapy?		
Answer Choices	Responses	Number
Yes	70%	7
No	30%	3
Total		10
Q7. What is the primary challenge or barrier to adding pain science education and psychologically informed care to the physical therapy curriculum?		
Three themes developed from respondents including:		
1. Potential lack of faculty knowledge and time		
2. Challenges finding space in an already heavy curriculum		
3. Specific pain content is not part of NPTE exam		

Survey Instrument

The survey (Table 1) was developed by the authors, physical therapists, and with input of pain experts from interdisciplinary fields. The study investigators had extensive experience in clinical practice, education, and research relative to pain management. In addition, CAPTE accreditation standards, IASP Pain Curricula for Physical Therapists, and standards specifically developed for rehabilitation specialists were reviewed (Table 2).^{22,15,27} Reflecting on these three evidence-based resources, the authors identified seven key domains. These domains were utilized to create the survey. The final survey consisted of a total of 7 questions. Six questions were objective and measurable, close-ended multiple-choice questions and one question was open-ended to allow

directors to freely share their perspective.²⁶ The following subject areas were surveyed: 1) pain education (a cognitive intervention), 2) pain science education (educating professionals on the neurobiological mechanisms), 3) psychosocial factors, 4) biopsychosocial model of pain, 5) cognitive-behavioral techniques for pain treatment, 6) advanced faculty training in pain science education or psychologically informed physical therapy, and 7) the primary challenge or barrier to adding pain education and psychologically informed care to the physical therapy curriculum. Survey questions also evaluated the amount of time (10-40 hours) dedicated to pain related content.

Table 2. Summary of Learning Objectives/Core Principles from IASP, JDR, and CAPTE

IASP	JDR	CAPTE
Understand and explain the biopsychosocial model and its relevance to pain, one's response to pain, and the impact of pain on one's life.	Demonstrate an understanding and be prepared to teach patients and the community about contemporary, evidence-based pain science.	The physical therapist professional curriculum includes content and learning experiences in the biological, physical, behavioral, and movement sciences necessary for entry level practice. Topics covered include anatomy, physiology, genetics, exercise science, biomechanics, kinesiology, neuroscience, pathology, pharmacology, diagnostic imaging, histology, nutrition, and psychosocial aspects of health and disability.
Apply knowledge of basic science of pain to person-centered assessment and management of pain.	Demonstrate an understanding and be prepared to teach patients and the community about contemporary, evidence-based substance abuse and OUD screening tools.	Select, and competently administer, tests and measures appropriate to the patient's age, diagnosis, and health status including, but not limited to, those that assess pain.
Promote health and wellbeing through reducing the impact of pain and disability.	Effectively and efficiently treat individuals with painful conditions with movement-based intervention strategies.	Provide physical therapy services that address primary, secondary, and tertiary prevention, health promotion, and wellness to individuals, groups, and communities.
Assess or measure the biological, physical, and psychosocial factors that contribute to pain, impairment, and disability using valid and reliable assessment tools.	Use contemporary, evidence-based opioid and/or substance abuse screening tools in practice and appropriately refer patients to additional healthcare providers.	Select, and competently administer, tests and measures appropriate to the patient's age, diagnosis, and health status including, but not limited to, those that assess pain.
Identify professional, system, and community barriers to effective pain assessment and management.	Demonstrate an understanding of the role of the U.S. health system in the opioid epidemic, including the system's role in over-prescription of opioids.	Establish a safe and effective plan of care in collaboration with appropriate stakeholders, including patients/clients, family members, payors, other professionals, and other appropriate individuals.
Develop an evidence-based management program in collaboration with the client/patient, directed at modifying pain and encouraging helpful behaviors, promoting tissue healing, improving function, reducing disability, and facilitating recovery.	Educate patients, other healthcare professionals and the public regarding the role of physical therapy as a non-pharmacologic intervention strategy for acute and chronic painful conditions that can be used in place of opioids.	The physical therapist professional curriculum includes content and learning experiences in communication, ethics and values, management, finance, teaching and learning, law, clinical reasoning, evidence-based practice, and applied statistics.
Implement management that includes patient education, active approaches such as functionally oriented behavioral-movement reeducation approaches and exercises, passive approaches such as manual therapy (where indicated) and avoiding	Effectively and efficiently treat individuals with painful conditions with movement-based strategies.	Competently perform physical therapy interventions to achieve patient/client goals and outcomes. Interventions include functional training ..., motor function training, manual therapy techniques, therapeutic exercise....

erroneous and potentially catastrophic rationales such as “realignment,” “stabilizing,” or “correcting”) and the application of electro-physical agents as indicated.		
Demonstrate an awareness of their scope of practice to evaluate and manage patients experiencing pain using evidence-based treatment and management.	Use contemporary, evidence-based opioid and/or substance abuse screening to 90% in practice and appropriately refer patients to additional healthcare practitioners.	Determine when patients need further examination or consultation by a physical therapist or referral to another health care professional
Demonstrate awareness of other professionals’ skills and competencies to enable appropriate and timely collaboration and on referral.	Identify the practitioners involved in the treatment of individuals with painful conditions and in OUD prevention.	Participate in patient-centered interprofessional collaborative practice.
Communicate appropriate information to other health professionals involved in providing patient care to optimize interdisciplinary management, including medical and surgical, behavioral and psychological, or pharmacological approaches.	Demonstrate the ability to work on an interprofessional team to address the multi-dimensional nature of pain and to develop programs to prevent OUD.	Courses within the curriculum include content designed to prepare program students to: communicate effectively with all stakeholders, including patient/clients, family members, caregivers, practitioners, interprofessional team members, consumers, payers, and policymakers. Participate in patient-centered interprofessional collaborative practice.
Recognize individuals who are at risk for under-treatment of their pain (e.g., individuals who are unable to self-report pain, neonates, and cognitively impaired individuals or populations where care disparities exist.	Demonstrate an understanding of the social determinants of health (e.g., socioeconomic status, race, ethnicity, gender) and their impact on individuals at risk for living with OUD.	Manage the delivery of the plan of care that is consistent with professional obligations, interprofessional collaborations, and administrative policies and procedures of the practice environment. Assess health care policies and their potential impact on the healthcare of environment and practice.
Reflect critically on effective ways to work with and improve care for people with pain.	Demonstrate the ability to work on an interprofessional team to address the multi-dimensional nature of pain and to develop programs to prevent OUD.	Participate in patient-centered interprofessional collaborative practice.
Regularly update personal knowledge of pain science and evidence-based pain management.	N/A	Courses within the curriculum include content designed to prepare program students to: access and critically analyze scientific literature.
Practice in accordance with an ethical code that recognizes human rights, diversity, and the requirement to “do no harm.”	N/A	Courses within the curriculum include content designed to prepare program students to: practice in a manner consistent with the APTA Code of Ethics, implement, in response to an ethical situation, a plan of action that demonstrates sound moral reasoning congruent with core professional ethics and values.

Abbreviations: IASP = International Association of Pain; CAPTE = Commission on Accreditation of Physical Therapy Education; JDR = Journal of Disability and Rehabilitation

Data Analysis:

The data from the survey was analyzed quantitatively and descriptively in Excel. Quantitative data from close-ended questions 1-6 were converted into a percentage value. Qualitative data which address barriers to adding pain education and psychologically informed care to the physical therapy curriculum question number 7 was used to identify recurring themes, language, and opinions. The data from question 7 transcribed by the authors with checks for reliability and data accuracy.

RESULTS

The overall survey response was 66%, with 10 of the 15 Program Directors responding to the survey. The questions from the survey and the results are described in Table 1. Sixty percent of the programs reported they do not have a class dedicated to pain science as part of the curriculum. For programs that included pain science education training in the curriculum, 40% reporting between 10-30 hours of instruction and 60% reporting less than 10 hours of instruction. Sixty percent of the program directors reported having a class or lectures dedicated to the psychosocial factors of pain as part of the curriculum. For training in the biopsychosocial model of pain 50% reported less than 10 hours in the curriculum. All academic programs included cognitive-behavioral techniques in the curricula. Thirty percent of the respondent's reported less than 10 hours of total content and 70% reported between 10-30 hours of total content. Regarding faculty training, 70% of the program directors reported faculty had received advanced training in pain science education and/or psychologically informed practice. Three distinct barriers to the implementation of additional pain education curricula were reported. These barriers included (1) a lack of time for implementation, (2) challenges in finding space in an already dense physical therapy curriculum, and (3) pain content was not part of the National Physical Therapy Examination (NPTE) questions.

DISCUSSION

Our study demonstrates the biopsychosocial model of pain, foundational pain education, and cognitive-behavioral techniques for pain management are part of entry-level DPT education in New York State. The description of time allocated to pain education activities described in this survey (10-30 hours) were higher than reported by Hoeger Bement²⁵ in 2014 (e.g. mean of 3.2 hours of pain education).²² Furthermore, despite the barriers of time and a dense DPT curriculum, educators in the State of New York demonstrate advanced training and recognize the importance of improving pain curricula to assure entry-level physical therapists and are proficient in applying a biopsychosocial approach to pain management. New York State DPT programs have stayed current with advancing curricular changes to incorporate of pain education and cognitive-behavioral technique, both of which fit into the paradigm shift described by Keefe³¹ as psychologically informed practice. This also fits with recent Delphi study³² where the necessary psychological components for chronic pain management were identified as strategies to promote physical activity, pain education, and cognitive approaches. Based on current survey data from New York State programs, elements of biopsychosocial pain management, including pain education and cognitive behavioral techniques, are now part of entry-level education.

Despite the implementation of pain education and biopsychosocial principles into entry-level physical therapist practice, there is a gap on agreed upon elements of pain content and curricular hours that entry-level physical therapist education programs should dedicate to pain education. The lack of specific standards for pain education may prevent entry-level physical therapist education programs from implementing significant changes. A 2016 systematic review by Hall³³ reported 16 to 72 hours of education regarding pain was sufficient to enable physical therapists to successfully deliver effective cognitive-behavioral interventions. One physical therapist-led training on pain coping skills, resulted in excellent adherence and patient outcomes with 150 hours of training.³⁴ This time intensive approach may or may not be feasible to implement within a Doctor of Physical Therapy curricula.^{22,23}

Based on a combination of evidence and current survey data, the following recommendations could improve pain education in entry-level physical therapist education programs: 1) Program faculty should review IASP and/or other guidelines and remove outdated content based on a narrow biomechanical and pathology-based approach, and add updated biopsychosocial oriented training; 2) A dedicated pain education course or content of 20 hours or more should be embedded into the curriculum; 3) A dedicated course on cognitive-behavioral techniques and/or psychologically informed care should be created or 20 hours of content should be embedded into the curriculum; 4) Best practice recommendations to maintain fidelity of pain instruction should include a systematic approach with the use of a training manual, practice, and mentorship from experienced practitioners;³⁵ 5) Educational content should be developed to screen for and provide education on opioid use and OUD; and (6) CAPTE accreditation standards should be updated to ensure that physical therapist education programs provide accurate pain education and training.

Specific CAPTE accreditation updates and additions may include: a) Adding cognitive behavior techniques to the content and learning experiences in Standard 7A, b) Adding psychosocial tests and measures of pain appropriate to the patient's age, diagnosis and health status as part of standard 7D19, c) Ensuring clinical sites have sufficient training in pain education, screening of OUD, and cognitive-behavioral techniques to prepare students for their roles and responsibilities as physical therapists (Standard 8F and

Standard 7D16). The integration of these recommendations for physical therapist education programs would create consistency across the State of New York, and the nation. Table 2 provides a summary of available learning objectives and principles.

Limitations

One limitation of this study is that findings from New York State may not represent all CAPTE accredited programs. The terms pain science (educating professionals on the neurobiological mechanisms) and pain education (a cognitive approach delivered by professionals to reconceptualize pain from a biomedical cause to a biopsychosocial phenomenon) need to be clarified and defined as confusion amongst the terms may impact data and outcomes. In addition, a variety of techniques for promoting behavior change and pain self-management have been recommended for physical therapists.³⁶ These techniques and methods include Cognitive Behavioral Therapy, Motivational Interviewing, Mindfulness-Based Stress Reduction, Mindfulness, Cognitive Functional Therapy and Acceptance Commitment Therapy and were not specifically assessed. The optimal training of biopsychosocial skills for physical therapists may be best enhanced by understanding behavioral change processes instead of learning specific methods. Another limitation is the opinions of physical therapy faculty, many of whom do not practice clinically or practice minimally, may not be the best sample to survey with regard to whether or not current curricula content is sufficient to prepare clinicians for entry-level practice. Future surveys could ask faculty members whether they are aware of recommendations and further explore what is included in the programs. In addition, surveys could include a clinician's perceptions of preparedness to treat pain, in particular new graduate physical therapists.

CONCLUSION/RECOMMENDATIONS

All accredited DPT programs included educational content about pain however the breadth and depth of content varied greatly from 10-40 hours depending on the content. The faculty is prepared with advanced training in pain education and/or psychologically informed practice, however limitations in time, density of the curricula and a lack of pain questioning on the NPTE exam create significant barriers to improving pain education in entry level DPT educational programs. Standardization of pain education within DPT programs may help better align graduates with the public health demands of holistic and nonpharmacologic pain care.

Findings from the New York survey serve as a reference to improve pain education within DPT entry level curricula. With an aim to improve professional competencies of physical therapists to effectively treat chronic pain, it may be necessary to create new "gold educational standards." These gold standards should include (a) strategies to promote physical activity and other lifestyle interventions; (b) evidence-based cognitive processes of change known to impact pain and disability outcomes; (c) cognitive-behavioral techniques with empirically demonstrated links to behavior change; (d) information delivered in the context of physical therapist education and practice; and (e) pain education and treatment sensitive to the needs of people living with pain.

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