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### Traditional Chinese Medicine: A Survey to Assess Inclusion in DPT Curricula in the United States

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# **Traditional Chinese Medicine: A Survey to Assess Inclusion in DPT Curricula in the United States**

by

**Michael Erickson**

**Paul Nasri**

**David Perrotto**

A capstone project submitted to the Graduate Faculty in Physical Therapy in partial fulfillment  
of the requirements for the degree of Doctor of Physical Therapy (DPT),

The City University of New York

2016

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This manuscript has been read and accepted for the Graduate Faculty in Physical Therapy in satisfaction of the capstone project requirement for the degree of DPT.

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## ABSTRACT

### **Traditional Chinese Medicine: A Survey to Assess Inclusion in DPT Curricula in the United States**

by

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The objective of this study is to assess the current level of inclusion of Traditional Chinese Medicine (TCM) in Doctor of Physical Therapy curricula in the United States. This survey provides self-reported data regarding the challenges associated with incorporating TCM into the curriculum. All 228 CAPTE (Commission on Accreditation in Physical Therapy Education) accredited Doctor of Physical Therapy (DPT) programs were included in this survey instrument. A College of Staten Island (CSI) Human & Animal Protection Office (HARPPPO) approved survey was e-mailed to the chairperson of each DPT program and respondent data was stored via a secure Survey Monkey® online database. Returned surveys were analyzed descriptively to characterize tendencies and variability. Data were summarized in a frequency distribution for each category. A qualitative analysis was completed for any explanatory data. Ninety DPT programs (39%) responded to the survey instrument. Findings suggest that 58% of responding programs expose their students to TCM. Most commonly included TCM techniques were: tai chi (54%), acupuncture (45%), and acupressure (44%). Forty-nine percent of respondents claim that time restrictions act as the greatest barrier to the incorporation of TCM in the curriculum. These

findings suggest that the majority of physical therapy students are exposed to TCM, in one form or another. Program chairpersons and faculty believe the inclusion of TCM can assist their students in treating patients with a variety of diagnoses and conditions. Thirty-eight percent of respondents agree that TCM can/does positively contribute to their DPT curriculum and to the overall education of their students. It is suggested that more time is dedicated to introducing TCM topics in order for students to have the ability to communicate with other disciplines and patients about such treatment techniques. Students should also have a greater knowledge base such that they are able to utilize a greater variety of evidence-based techniques in clinical practice.

Acknowledgments: We would like to thank all survey respondents for their time and insight to their Doctor of Physical Therapy (DPT) curricula.

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## **Introduction**

Traditional Chinese Medicine (TCM) is an ancient practice that addresses illness through not only the biological symptoms of an individual, but through a comprehensive understanding of the individual. The belief is that body, mind and spirit are interconnected as one. *Qi* is the energy that flows through every living being; a vital energy that is pertinent to one's health and success (Shi, 2012). According to Chinese tradition, *qi* is divided into five elements: gold, wood, water, fire and earth. It is also divided into Yin and Yang; two opposite yet interconnected forces that promote balance and quality of life. Yin and Yang must be able to flow in harmony with one another to achieve health. If the free flow of *Qi* and blood is obstructed, adverse health problems are believed to present themselves (Cai, 2004). The role of Traditional Chinese Medicine practices is to correct the blockage of *qi*, allowing the patient to be free of undesirable symptoms. All TCM therapies for pain and arthritis are based on the principles of eliminating cold and damp *qi*, breaking *qi* blockage, and supplying the affected areas with a healthy and balanced *qi* (Chen, 2006).

Evidence-based research is a main source of updated information for medical practitioners. Recent decades have brought about a plethora of literature in relation to Traditional Chinese Medicine (Ferreira, 2013). Many forms of Traditional Chinese Medicine are practiced in both Eastern and Western cultures. Some treatments include moxibustion, herbal therapy, tuina, qigong, tai chi, and most noteworthy, acupuncture and acupressure. Angelica sinensis (AS) has been clinically used for its therapeutic effect on skin trauma and wound healing capability by regulating cell growth, mobility and metabolism (Hsiao, 2012). Qigong involves energy exercises that integrate adjustments of body posture, breathing, and mind status into one (Chen, 2006). Many common Western practices such as Yoga, Reiki, meditation, and deep breathing



exercises can be labeled as qigong due to their similar principles and theory. Tai Chi, which is an extension of qigong, has been studied in patients with Parkinson's disease (PD). In 2012, Li et al. found that postural stability was most improved by tai chi exercise when compared to resistance training or stretching. Strength and gait was more favorable in the tai chi group compared to the stretching group, and stride length and functional reach scores were in favor of the tai chi group when compared to the resistance group. This carries significance because many patients are labeled as "fall risks" and tai chi played a significant role in improving balance and decreasing the risk of falls (Li et al, 2012).

Acupuncture recognizes a network of channels along the body referred to as the Meridian system (Kang, 2009). This system is noted as carrying *qi* and blood which supply organs, joints, tendons and bones. This practice includes the insertion of fine needles into special points along the Meridians that will remove the blockage of *qi*, therefore curing the disease (Cai, 2004). These points are better referred to as acupoints. Acupuncture has been shown to treat a variety of musculoskeletal disorders. These results can be explained by the acupuncture analgesia mechanism; an intricate mechanism that involves the release of endorphins along with the activation of their receptors. This mechanism is hypothesized to function through immune, hormonal, and nervous systems. It is purported that acupuncture stimulation activates A- $\delta$  and C afferent fibers in muscle, causing signals to be transmitted to the spinal cord which stimulates local release of enkephalin and dynorphin (Wang, 2007). Endogenous opiates are released from the pituitary gland into the plasma, resulting in sufficient analgesia in the central nervous system (Lin, 2008). It is also suggested that acupuncture stimulates nerve fibers in the muscle, which send impulses to the spinal cord and activate centers in the spinal cord, midbrain, and hypothalamus (Pomeranz, 2001).

Despite the dispute on the actual neuro-hormonal pathway of acupuncture, there is significant evidence of pain reduction and improved function in the treatment of a variety of conditions and impairments ranging from osteoarthritis to vomiting (Park et al, 2013). Lathia et al. demonstrated that acupuncture treatment resulted in significantly improved Shoulder Pain and Disability Index (SPADI) scores and a significant reduction in pain in patients with chronic shoulder pain, when compared to a control group. Similar to chronic shoulder pain, Johansson et al. (2005) found that acupuncture with home exercise was a more effective treatment strategy for reducing pain and other disability outcome measures than ultrasound with home exercise. In addition to the previous study, many studies show great efficacy of acupuncture when combined with conventional physical therapy. Combination of acupuncture and physical therapy showed significant differences in pain reduction, range of motion, and quality of life for patient with adhesive capsulitis when compared to acupuncture only and physical therapy only groups (Ma et al. 2006). According to the Chartered Society of Physiotherapy (CSP), physical therapists are increasingly using acupuncture as a supplementary or exclusive treatment for a variety of painful conditions (McDonough, 2005). Exclusive use of one treatment is rarely a solution to all problems, but an inclusion of acupuncture / acupressure may assist the patient in returning to functional life activities sooner. Therefore, the best clinical effects can be expected when incorporating acupuncture into the treatment plan. Ma et al. reports that *“future health policy should focus on the combination of Western and Chinese medicine treatment, for this will benefit not only the research, but also the public who is able to receive more convenient and effective treatment.”* Not only can acupuncture be an effective treatment technique, especially when combined with physical therapy, it has benefits when used as a preventive tool as well. Shih C-C et al. (2014) displayed that traumatic brain injury victims (whom are at an increased risk of

stroke) that were treated with acupuncture post injury showed significant reduction in the likelihood of having a stroke as compared to their those who did not receive acupuncture.

A national survey in 2002, providing information from more than 31,000 adults, found that 36% of respondents had used CAM in the previous 12 months (Barnes et al, 2004). Findings from the National Health Interview Survey in 2002 suggest that over 8 million Americans are lifetime users of acupuncture, and over 2 million have used acupuncture over the last 12 months. Seven of the top 10 conditions for the use of acupuncture include pain/musculoskeletal complaints. Back pain was the most common condition cited by respondents (34.0%), followed by joint pain (16.0%), neck pain (13.6%), severe headache/migraine (9.9%) and recurring pain (8.1%). The majority of respondents (57.4%) agreed with the statement that acupuncture (used as a complementary medicine) along with conventional medical treatment would help them most. The majority of survey respondents (56.8%) also reported that they had discussed the use of acupuncture with a conventional medical provider (Burke et al, 2006). Similarly, a random-household telephone survey of 831 participants in 1997 found that 79% of the respondents agreed that using both conventional and alternative therapies is better than using either one alone for their problems (Eisenberg et. al, 2001). This speaks to the prevalence of CAM, especially acupuncture, in the United States.

Acupressure focuses on Meridian points as well, but does not require any drugs or tools. This technique is performed with the hands or fingers; a practice in which pressure is applied to painful sites, inducing an effect similar to acupuncture. The exact point for acupuncture is required but in the case of acupressure, it is not. According to Pascal's Principle, acupressure provided to the surrounding area of a painful point can be effective in restoring physiological functions (Shin et al, 2007). In a study by Chen, fourteen Meridian points were treated in patients

with hemiplegia. This intervention lead to statistically significant improvements in upper extremity function (grip power, range of motion, shoulder pain), decreased post-stroke related depression, and the ability to perform activities of daily living. Another study suggests that acupressure is more effective than physical therapy in alleviating chronic low back pain. This was assessed through pain visual analogue scale, core outcome measures, Roland and Morris disability questionnaire, and Oswestry disability questionnaire (Hseih, 2006).

Many studies also investigate the use of electrical stimulation, specifically at acupoints. One such study compared acupoint electrical stimulation to a sham acupoint condition in post-surgical patients, and found that patients experienced less pain severity, pain frequency, pain impact on daily activities and pain during sleep in the acupoint electrical stimulation group (Chen, 2010). This helps to validate the analgesic effect of stimulation at acupoints and once again demonstrates a combination of Eastern and Western techniques that is beneficial to patients.

Two of the less often referenced TCM techniques in the West include cupping and gua sha therapy. Cupping is an ancient form of myofascial decompression in which cups are used to create suction over the skin. The two main classes of cupping are wet and dry, and there are many subcategories and varying techniques within those classes. Cupping is used to treat a variety of chronic conditions, and is most commonly used to assist in treating chronic low back pain. In a systematic review of the literature from 1980 to 2013, Huang et al. found that cupping was an effective technique for: pain reduction, improving quality of life, minimizing risk of treatment (due to its non-invasive nature) in patients with chronic low back pain. Gua sha is a technique which employs the use of a smooth edged tool to lightly scrape the skin, causing intentional bruising and subcutaneous bleeding. The purpose of this instrument assisted soft

tissue mobilization technique is to stimulate blood flow to the injured tissue. Gua sha is traditionally used in chronic conditions. Braun et al. (2011) investigated the short-term effectiveness of gua sha for the treatment of symptomatic patients with chronic neck pain. A significant reduction in pain (as assessed by visual analog scale), and significant improvements in quality of life and Neck Disability Index (NDI) scores were found in those who were treated with one session of gua sha compared to a control group treated with a thermal heating pad.

Pain is the most frequent symptom for which patients seek healthcare (Scudds, 2001). It is also the most common symptom reported by patients who are referred for physical therapy. Therefore, it can be stated that education on pain and pain management are an integral part of any physical therapist's education. In response to a survey however, only 33% of physical therapists stated that they believed they were receiving adequate entry-level pain education (Wolff et al, 1991). Practicing physical therapists also displayed a lack of interest in working with patients who present with chronic pain. Wolff et al. state that this is problematic because a vast number of patients have recurring issues that eventually become chronic. They believe that pain-related disability is frequently mismanaged in the healthcare system. According to the researchers, the most commonly cited reasons for this mismanagement are the negative attitudes of a healthcare practitioner, and a lack of knowledge about pain and the person with that pain. These negative thoughts have the ability to influence the expectation of the patient, and the treatment outcome. Traditional Chinese Medicine focuses on treatment of the individual as a whole, not just on the disease, injury, or disorder the individual presents with. This suggests that an optimistic attitude is critical in order for desirable outcomes to be reached. This promotes a more supportive environment for the patient. A role is also played by the patient in many of the chronic injury cases. According to complementary alternative medicine providers, the “fix me”

approach to therapy must be abandoned. This approach disengages the patient from their role in the rehabilitation process. The provider is responsible for educating the patient on how he/she will be involved in the process (Schafer et al, 2012). The focus of TCM includes an active role in this process (Shi, 2012). This concept empowers the patient, making them aware of the significant role that they play throughout their recovery process.

Cultural competence has played a major role in the revamping of physical therapy curricula around the United States. In order to educate culturally competent students, programs are advised to “*provide experiences that: 1. Immerse students in another culture, 2. Teach students about different cultures, demonstrating this knowledge in conversation and 3. Engage students in dialogue to understand the meaning connected to the group’s cultural artifacts.*” (Romanello, 2007). This is a valid argument which supports the idea that Traditional Chinese Medicine should be introduced to entry-level physical therapy students. In 2000, Black stated physical therapist education programs were inadequately addressing the development of cultural competency in their curricula. The authors believe that TCM is an appropriate means to satisfying that need in the curricula of physical therapy programs.

A survey of health educators in the United States found that a large majority agree or strongly agree that they should be able to discuss commonly used complementary and alternative (CAM) methods with their clients (84.37%). They also believe that CAM should be included in the professional health education curriculum (82.23%), and that CAM is important to them as professional health educators (75.80%). When asked if conventional medicine could benefit from ideas and methods of CAM, 91.60% either agreed or strongly agreed. However, only 7.98% agreed or strongly agreed with the statement, “I believe that most health educators are knowledgeable about CAM” (Johnson et. al, 2010). A wide gap in education exists when nearly

92% of health educators believe that healthcare should integrate CAM therapies and conventional therapies, but only 8% believe that most health educators are knowledgeable on the subject matter of CAM.

It is not known how much time or content is devoted to pain within physical therapy curricula. The education on TCM within physical therapy curricula is also unknown at the present time. In 2009, it was found that 82% of physical therapy programs in the United States included some form of complementary and alternative medicine in their curriculum (Geigle & Galantino, 2009). The most commonly included CAM content included, in descending order, were: manipulative and body-based methods, alternative medical systems and biologically based therapies. This study was a broad overview of CAM as a whole, which included some TCM components. However, TCM as the main area of interest has never been investigated before in Doctor of Physical Therapy (DPT) curricula in the United States.

Wetzel et. al, 1998 found that 64% of medical programs (MD) in the United States either offered an elective course in complementary and alternative medicine or included these topics in required courses. A total of 123 courses were reported, with 68% of those courses being standalone electives, 31% as part of required courses, and 1% as part of an elective course. In another study, CAM course directors at US medical schools (MD) were sent questionnaires about the inclusion of CAM topics in their courses (Brokaw et al, 2002). The topics taught most often were acupuncture (76.7%), and herbs and botanicals (69.9%). A similar study focused on the status of CAM in the osteopathic medical school (DO) system (Saxon et al, 2004). These researchers found that acupuncture, and herbs and botanical were taught most often in the DO programs (68% for each). Sixty-four percent of the courses were required and twenty-eight percent were elective course, with the remaining courses listed as “unspecified.” According to

their findings, 72% of the CAM instructors were CAM practitioners themselves. However, few of these CAM instructors (12%) taught their courses from an evidence-based perspective.

The objective of this study is to assess the current level of inclusion of Traditional Chinese Medicine (TCM) in Doctor of Physical Therapy (DPT) curricula in the United States. The authors investigate which topics are being taught, in which courses they are being taught and to what extent, who teaches those courses and what are their qualifications, the competency level of the physical therapy students in utilizing these techniques, the barriers associated with inclusion of TCM practices, and future plans for inclusion. Based on the evidence supporting its efficacy, it would be difficult for the researchers to understand its lack of inclusion into entry-level DPT curricula. The interest and efficacy are apparent, but the question of why it may not be taught more often requires further investigation.

## **Methods**

After obtaining an Institutional Review Board (IRB) letter of exemption from the College of Staten Island Human & Animal Research Protection Program Office (HAARPO), an online survey instrument was created using SurveyMonkey®. The layout of the survey consisted of a brief introduction which included: a definition of TCM from the National Institutes of Health (NIH), acknowledgment of IRB approval, contact information of the research group, confidentiality assurance, and 27 questions assessing the inclusion of TCM in the DPT curriculum. The survey consisted of a combination of fill in and multiple choice questions. The first two questions were to gather information on the institution and role of the person filling out the survey. The following 25 questions were aimed at gathering quantitative and qualitative data on TCM inclusion in each program. Upon completion of the survey, the faculty member



completing the survey clicked on the “Done” tab and all information was securely stored on the SurveyMonkey® website. The responses were only viewable and accessible to members of the research group. Respondents were not required to complete all questions in order to submit the survey. They were provided the freedom to skip questions if they chose to do so. This was done as a means of increasing compliance and completion rates.

The subjects for the survey instrument were all 228 of *The Commission on Accreditation in Physical Therapy Education (CAPTE)* DPT programs in the United States. All contact information was gathered from the CAPTE website. The email address of each DPT program chair was gathered from CAPTE and cross-checked with each institution's website. This was done to assess for discrepancies in contact information, and to ensure that the CAPTE listed chairperson had not recently changed. Originally, 218 DPT program chairs were contacted for responses; however, ten newly accredited programs were established during the period of data collection. All program chairs for newly accredited programs were contacted, and their data was included if they completed the survey instrument.

Once all of the contact information was gathered, the first of two emails were sent to the chairperson in April 2015. The first email served to introduce the purpose of the survey and to act as a reminder that the following day another email would be sent with the link to the survey instrument. The second email was sent the next day with a link to the actual survey instrument. The chairperson was asked to forward the survey instrument to the person most knowledgeable about the inclusion of Traditional Chinese Medicine in the DPT curriculum. This could be any faculty member, adjunct professor, invited guest lecturer, TCM expert/clinician, or the chairperson him/herself.

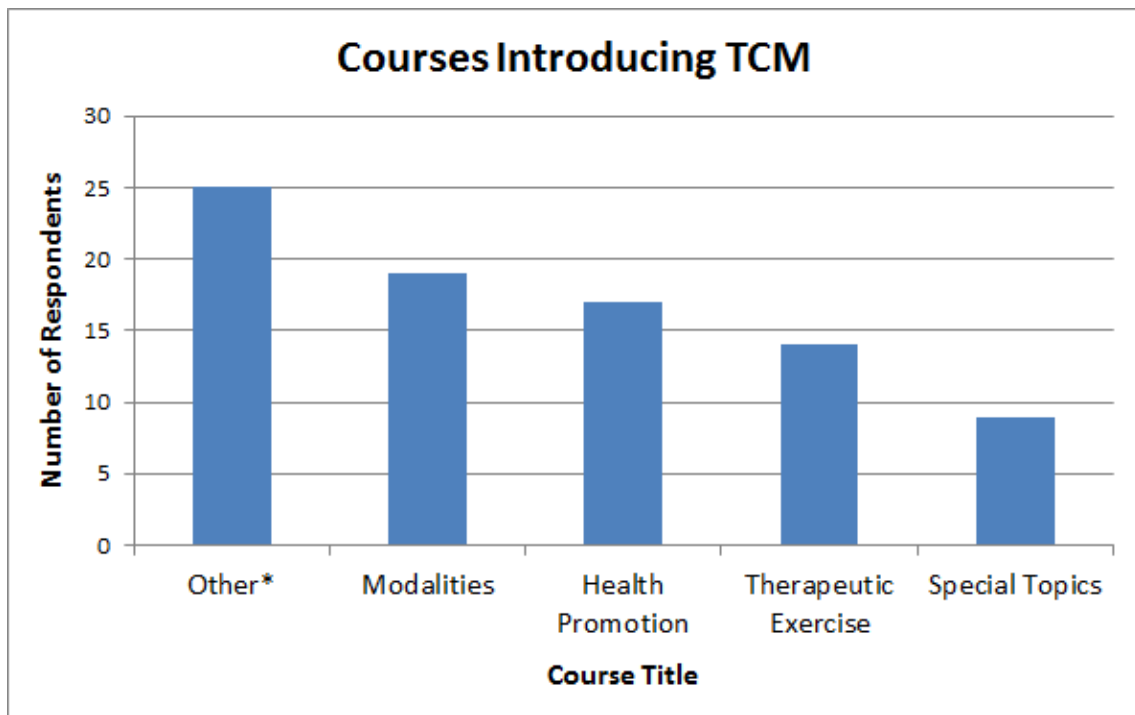
In June 2015, the same two emails (in the same sequence) were sent to nonresponding chairpersons. This process was repeated for a third and final time in September 2015. In October 2015, all chairpersons of the remaining non responding programs were contacted directly via phone call. If the chairperson was unavailable, a message was left via voicemail or with a secretary, informing them that an email would be sent to them with a link to the survey instrument. After all responses were collected and analyzed, responding chairpersons were sent a “thank you” email, thanking them for their participation.

## **Results**

Thirty-nine percent (90 of 228) of all Commission on Accreditation in Physical Therapy Education (CAPTE) accredited Doctor of Physical Therapy (DPT) programs responded to this survey instrument. Eighty-seven percent of all respondents were program chairs, twelve percent were full-time faculty members, and one respondent was an assistant program director. Fifty-eight percent of the respondent’s state that their DPT program introduces/exposes their students to Traditional Chinese Medicine (TCM). Nine programs have a mandatory course that pertains to TCM and two programs offer a course(s) as an elective(s) to their students. The remaining programs who introduce their students to TCM topics do so within the scope of another course.

“Modalities” was the course most often reported to include TCM related topics (19 responses). This was followed by: Health Promotion and Prevention (17), Therapeutic Exercise (14), and Special Topics (9). Twenty-five respondents selected the “other” option and referred to some of the following courses: Contemporary Issues (4), Complementary and Alternative Medicine (4), Balance (2), Psychosocial Issues (2), Orthopedics (2), Introduction to TCM (1), and Applied TCM (1). These results can be seen in *Figure 1*. Tai chi is the most commonly

covered TCM topic in the curriculum (54% of those who include TCM in their curriculum include tai chi). This is followed by: acupuncture (45%), acupressure (44%), acupoint electrical stimulation (25%), TCM philosophy (19%), qigong (18%), herbal medicine (18%), cupping (14%), tui na (4%) (see *Figure 2*). Other notable responses that were not included on the researcher's list of topics were: gua sha tools (2), moxibustion (1), and tongue and pulse examination (1).



*Figure 1. Courses that introduce DPT students to TCM. \*Some others included: Contemporary Issues (4), Complementary and Alternative Medicine (4), Balance (2), Psychosocial Issues (2), Orthopedics (2), Intro to TCM (1), Applied TCM (1)*

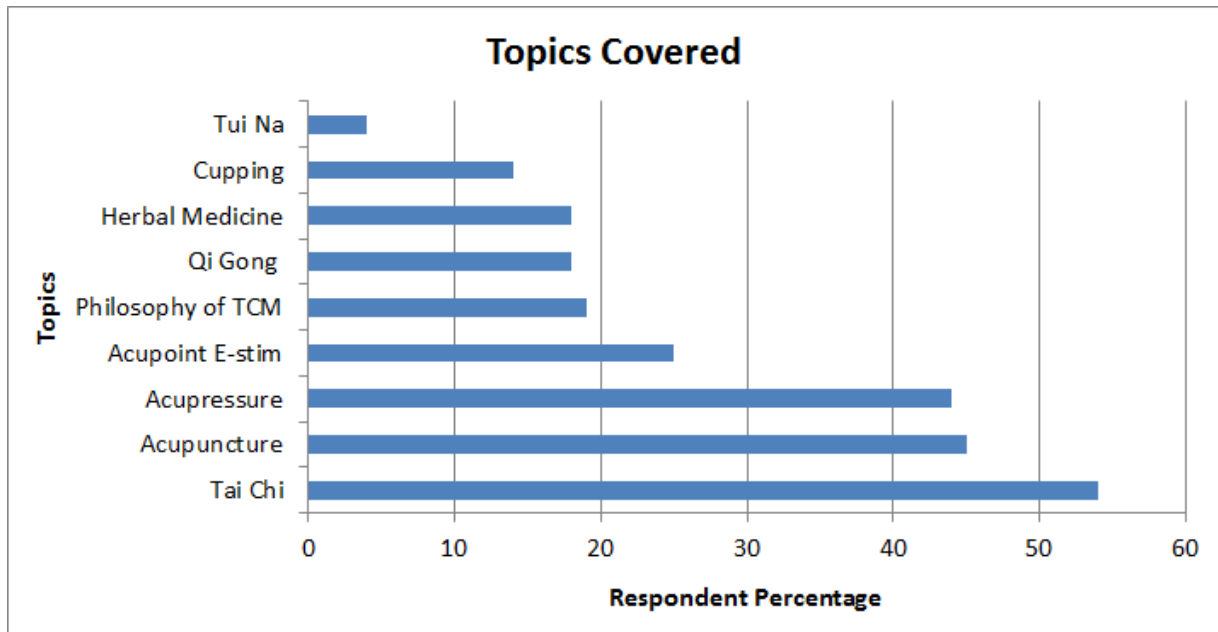


Figure 2. Topics that are discussed within the DPT curriculum. Others included: gua sha (2), moxibustion (1), tongue & pulse examination (1), shiatsu (1)

Twenty-eight of the responding programs who include TCM in their curriculum also include a lab component in their curriculum. Tai chi is the most common topic introduced in the lab setting. Eighteen of the twenty-eight respondents who include a lab component in their curriculum include tai chi. Other commonly taught topics in the lab setting are: acupoint electrical stimulation (10), acupressure (9), qigong (7), acupuncture (6), cupping (4), tui na (3). Of those programs that include a lab component, sixty-two percent believe that their students would be able to perform these manual skills with supervision and verbal cueing. Twenty percent believe that their students would be unable to perform these manual skills, and eighteen percent believe that their students would be able to perform these skills independently. Only one program offers their students an option to seek a certification that pertains to TCM.

The TCM instruction is most often delivered by a full-time faculty member (52% of the time). Adjunct lecturers (15%), invited guest lecturers (15%), and clinicians with TCM expertise

(7%) also deliver this material to students. Two programs reported that their own students present to classmates about TCM related topics. This is done in a problem-based learning setting in which the students conduct a review of the literature and present their findings via group presentations. According to the respondents of this survey instrument, only eight of the TCM instructors hold a TCM relevant certification. Nine of the respondents are uncertain as to whether or not the instructor holds any relevant certification, and the remaining respondents suggest that the instructor does not hold any relevant TCM certification. Three of the instructors are Certified Acupuncturists, three hold a Doctor of Acupuncture and Oriental Medicine (DAOM) degree, two have a tai chi specific certification, and one possesses a certificate in “Complementary Medicine and Wellness.” It is worth mentioning that three instructors are medical doctors (MD) from China.

In a “select all that apply” question, the most frequently selected response for the lack of inclusion of TCM in the curriculum was time restrictions (56%). Other common responses included: lack of research to support this practice (47%), lack of expertise on the subject matter (47%), and lack of insurance coverage (42%). Only two respondents cited a lack of patient willingness to accept alternative medicine techniques as a reason for exclusion of TCM in their curriculum. Other respondents referenced that TCM skills: are not entry level appropriate, are not within the PT scope of practice (state specific), are not included in the practice guidelines for PT, are rarely practiced in the clinical setting, and are not reflected in CAPTE criteria for accreditation. When the participants in this survey instrument were specifically asked which of these challenges acted as the single largest barrier to inclusion, “time restrictions” was most frequently selected (49%). Fourteen percent cited the lack of research to be the primary reason

for exclusion, followed by lack of expertise (13%), a lack of interest in incorporating TCM (10%), and lack of insurance coverage (6%).

Respondents believe that the inclusion of TCM in their curriculum will enhance the ability of their students to treat patients with many different pathologies and clinical diagnoses. Respondents were provided with the following statement: *The inclusion of TCM in your curriculum will enhance the ability of your students to treat patients with the following pathologies/clinical diagnoses.* Most commonly selected were headaches (47%), myofascial pain syndrome (45%), and chronic low back pain (45%). A comprehensive review of these responses can be viewed in *Table 1*. It is worth noting that nine respondents stated they did not know which conditions could better be treated with the complementary utilization of TCM techniques. Respondents reported that they did not have the background or knowledge of the evidence to answer this question. Of the DPT programs that do not currently include TCM in their curriculum, only five plan to include it in the near future. The remaining majority do not plan to include TCM in their curriculum in the near future.

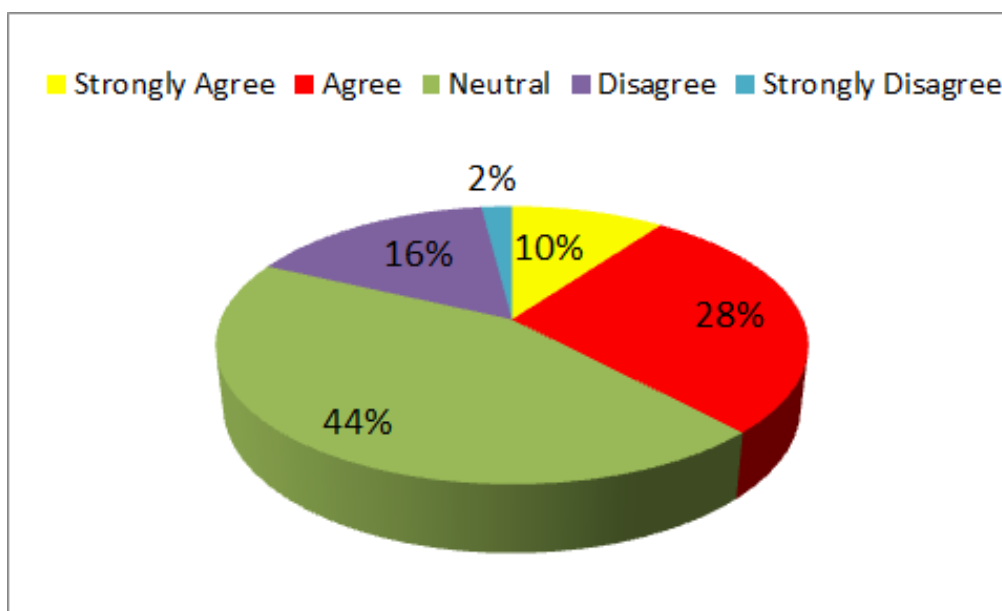
*Table 1. Pathologies & clinical diagnoses that students would be more equipped to treat because/if TCM was included within the DPT curriculum.*

TCM Inclusion & Increased Student Ability to Treat Patients			
Headaches/Migraines	35 (47%)	Gait Pathology	14 (19%)
Myofascial Pain Syndrome	34 (45%)	TMJ Pain	14 (19%)
Chronic Low Back Pain	34 (45%)	Post-stroke	13 (17%)
Balance Impairments	25 (33%)	Phantom Limb Pain	12 (16%)

Fibromyalgia	25 (33%)	Frozen Shoulder	12 (16%)
CRPS	22 (29%)	Rheumatoid Arthritis	11 (15%)
Osteoarthritis	21 (28%)	Parkinson's Disease	11 (15%)

Thirty-eight percent of respondents either agree or strongly agree that TCM education can/does positively contribute to their physical therapy curriculum and to the overall education of their students. Forty-four percent are neutral about this comment, and 17% either disagree or strongly disagree with the above statement (see *Figure 3*).

### TCM Positively Contributes to our Curriculum and to the Overall Education of our Students



*Figure 3. Respondent beliefs about whether or not TCM positively contributes to DPT curriculum and overall student education.*

## **Discussion:**

Geigle & Galantino (2009) found that 82% of survey respondents included some form of CAM material in their physical therapy curriculum. The most commonly included CAM content included, in descending order, were: manipulative and body-based methods, alternative medical systems and biologically based therapies. The current study found that 58% of DPT programs in the United States included some form of TCM in their curriculum. The most commonly cited topics were (in descending order): tai chi, acupuncture, acupressure, acupoint electrical stimulation. The remainder of the list can be referenced in the results section. Geigle & Galantino found that the top three reasons for difficulty to include CAM in PT curricula were: time restrictions (50%), lack of evidence supporting CAM practices (48%), and trouble locating qualified CAM presenters (12%). The current study produced similar findings, with time restrictions cited as the biggest obstacle to the incorporation of TCM by 49% of respondents. A secondary reason for exclusion of TCM from the curriculum is the believed lack of research to support these practices. The third factor for exclusion relates to the lack of expertise on the subject matter. These also match the findings of Geigle & Galantino.

Acupuncture and herbs and botanicals are taught most frequently in the osteopathic school curriculum (68% of all osteopathic schools teach acupuncture, and 68% teach herbs and botanicals) (Saxon et. al, 2004). These findings are not consistent with the findings of the current study, as acupuncture is taught in 45% of DPT programs and herbal medicine is only taught in 18% of DPT programs. The vast majority of osteopathic schools introduce their students to CAM (18 out of 19 programs). According to the current study, 51 out of 90 DPT programs introduce their students to TCM. Findings from the osteopathic school questionnaire suggest that 64% of the responding programs include a mandatory course related to CAM. Twenty-eight percent of



the responding programs offer an elective course that pertains to CAM. The current study found that 9 DPT programs include a mandatory TCM related course in their curriculum (10%). Only 2 programs offer a TCM elective to their students. Most of the CAM instructors in osteopathic schools (72%) are also CAM practitioners. The current study suggests that 52% of the TCM educators in DPT programs are full-time faculty members, and only 7% are clinicians with TCM expertise. The findings between DPT and osteopathic education (in relation to CAM/TCM training) are vastly different.

Some researchers have suggested that CAM education be provided to health educators by offering continuing education and professional development opportunities (Johnson, 2008; Patterson, 2000). The integration of CAM into current health education curriculum has also been suggested. This is the method which the authors of this study believe will adequately prepare future healthcare educators and professionals.

Sierpina et. al (2007) suggests that the most significant barriers to CAM inclusion are: resistance by faculty, the curriculum being perceived as too full, presenting CAM in an evidence-based way, providing useful, reliable resources and developing assessment tools.

The authors believe that there are several simple, yet effective ways to implement TCM into the physical therapy curriculum. As reported by two programs in the survey instrument, student led literature reviews and group discussions can be a means to exposing students to the efficacy of TCM. This strategy is consistent with the American Physical Therapy Association (APTA) Vision 2020, allowing students to focus on research and evidence-based practice. The authors of this study believe that DPT programs should begin exposing their students to the most easily applicable TCM techniques first. For example, tai chi and qigong are more easily taught

and implemented, whereas gua sha tools require much more exposure and training in a lab setting. Another strategy is to target qualified TCM practitioners for guest lectures and demonstrations. According to the findings of the present study, 52% of the TCM related material that is taught in DPT curricula is taught by a full-time faculty member. The qualifications of these full-time faculty members are unknown. It is preferred that a faculty member with TCM background/knowledge educate DPT students about TCM practices and techniques. However, the availability of such faculty may be limited, and invited guest lecturers may be a more appropriate alternative. The availability of such guest lecturers will likely be dependent on the geographical location of each DPT program.

The inclusion of an experiential component would also be advantageous to the students, as they would be able to gain a deeper understanding by observing a TCM practitioner/expert in clinical practice. This would allow the students to better understand how the clinician establishes clinical rationale for treatment interventions. This also provides the students an opportunity to communicate with alternative healthcare professionals. Interdisciplinary communication is key when focusing on patient care. It promotes the development of more culturally sensitive and competent practitioners. Again, the ability to find these TCM practitioners is dependent on geographical location and TCM prevalence in that region.

Another way to incorporate TCM into the curriculum is by developing role-play conversations between a student physical therapist and a pretend patient. These exercises will better train students on how to talk to patients about their prospective use of TCM techniques. If the therapist is familiar with such techniques and its efficacy for certain conditions, then he/she can make a more informed clinical decision when providing that patient with guidance to seek or not seek the alternative treatment. If the therapist is trained and competent in the TCM

technique(s), then he/she may choose to utilize those interventions in his/her physical therapy practice, provided those interventions are within the scope of physical therapy practice. This type of communication with the patient can also encourage more culturally competent physical therapists who respect and value alternative treatment methods, and who are informed enough to know which methods the literature supports/does not support.

The Association of American Medical Colleges (AAMC) cites the importance of physicians being “sufficiently knowledgeable about both traditional and nontraditional modes of care to provide intelligent guidance to their patients.” In a survey about the use of acupuncture, 56.8% of respondents who had received acupuncture stated that they had mentioned its use to a conventional medical provider (Burke et al, 2006). As autonomous practitioners with direct access to patients, physical therapists will be required to have conversations with those patients who inquire about such alternative practices.

### **Limitations:**

All 228 DPT programs in the United States were contacted, but only 90 responses were received. This 39% response rate may not be representative of all 228 DPT programs. In 2009, Geigle & Galantino included all 196 physical therapy programs, with a response rate of 47% (92 respondents). Thirty-two new programs have been accredited since Geigle & Galantino completed their study of CAM in physical therapy education. The quantity of responses is comparable (90 in the present study versus 92 in the study by Geigle & Galantino), but the response rates differ slightly (39% in the present study versus 47% in the study carried out by Geigle & Galantino).

Another limitation of the current study may be the individual completing the survey instrument. The researchers e-mailed each program chair, asking the chair to forward the survey to the individual most knowledgeable about the inclusion of TCM within the DPT curriculum. This could be a faculty member, adjunct professor, guest lecturer, TCM expert/clinician, or the chairperson him/herself. According to the findings of this survey instrument, 77 of the 90 respondents (roughly 87%) were program chairs. It may be possible that the program chairs decided to complete the survey instrument themselves due to the challenges associated with identifying the most appropriate individual to complete the survey. It is also possible that those program chairs believe they are the most knowledgeable about the inclusion of TCM within their respective DPT curriculum. There is no way to measure whether or not the program chair of each individual program is the most knowledgeable about TCM education in the DPT curriculum. However, it did appear as though survey respondents lacked the appropriate background to fully respond to each question. When asked which topics were covered in TCM related lectures, most responded appropriately to the question. A few respondents chose the “other” option and reported that dry needling, yoga, and shiatsu were a part of their curriculum. These techniques are not categorized under Traditional Chinese Medicine (dry needling is a Western practice, yoga was developed in India, and shiatsu has Japanese origins). The survey asked participants if the inclusion of TCM in their curriculum would enhance the ability of their students to treat patients with several different pathologies/conditions. A list of pathologies and conditions were listed and respondents could “select all that apply.” Nine respondents selected the “other” option, stating that they did not have the background, references, or evidence of the efficacy of TCM to be able to answer this question. This suggests that the respondents are not familiar with the current evidence that supports the use of TCM techniques for various conditions commonly treated by

physical therapists. Forty-seven percent of survey respondents cited that a lack of research supporting TCM practices was one of the reasons for excluding TCM in the DPT curriculum. Fourteen percent stated that the lack of research acted as the single biggest obstacle to the incorporation of TCM in the curriculum. Contrary to those beliefs, there is a plethora of literature that exists, supporting a variety of TCM practices that are used to treat conditions seen in a physical therapy setting (as can be reviewed in the introduction of this research paper). However, physical therapist educators do not appear to be familiar with the current evidence associated with the efficacy of TCM practices.

In 1998, Wetzel et al. created a survey instrument to investigate the courses involving CAM at United States medical schools. Their survey was addressed to the highest-ranking individual listed at each medical school who appeared to be responsible for the curriculum. According to the researchers, this was typically an individual with one of the following titles: associate dean for academic affairs, associate dean for medical education, or assistant dean for curriculum. Based on the research the authors completed of each DPT program website, not each program had somebody with one of these titles or roles. The authors decided to contact program chairs based on the strategy of Geigle & Galantino. However, Geigle & Galantino did not request that the program chair forward the survey to the person most knowledgeable about the inclusion of CAM within the physical therapy program.

Future studies should better attempt to seek out the individual most knowledgeable about the inclusion of TCM within the curriculum. This may be accomplished by contacting each program chair by phone and inquiring about which individual would be most appropriate to complete a survey instrument related to this topic.

The definition of Traditional Chinese Medicine displayed on the survey instrument could have acted as a limitation to this survey study. The researchers of the present study used the definition provided by the National Institute of Health (NIH): “*Traditional Chinese Medicine (TCM) originated in ancient China and has evolved over thousands of years. TCM practitioners use herbal medicines and various mind and body practices, such as acupuncture and tai chi, to treat or prevent health problems.*” A more detailed explanation for those not familiar with all the practices associated with TCM may have better educated the respondent on its use for commonly treated conditions. However, the researchers in this study did not want to bias any respondents with too much information about TCM, and therefore provided only a vague definition as created by the NIH.

Respondents had the ability to skip questions whenever they chose throughout the survey instrument. This was done in order to increase compliance and completion rates. It is a limitation to this study because not all questions received 90 responses as a result. There were also some inconsistencies in the responses. Some participants did not seem to understand the nature of each question, providing inconsistent answers at times. For example, many respondents stated that they did not introduce their student to TCM practices, yet reported that specific topics were taught in their curriculum. Therefore, the percentage of programs that introduce their students to TCM practices is likely higher than the figure reported.

### **Future Research Studies:**

This survey instrument provides an introductory understanding of Traditional Chinese Medicine in DPT curricula. Future studies should explore phone interviews as a means of better understanding the reasoning behind time restrictions and lack of availability of TCM experts.

Inconsistent answers and misunderstood questions can be ruled out this way, although it is a much more time consuming process. Future studies should also survey current, licensed physical therapists to discover whether or not (and to what extent) patients are inquiring about TCM practices while on a physical therapy program. Future studies can survey patients about their willingness and interest in receiving TCM treatment techniques. This can make a stronger case for why physical therapists should be informed about these techniques. Physical therapists should be able to utilize the techniques if and when it is appropriate, based on patient presentation.

Surveying physical therapy students about their level of interest in learning about TCM techniques may also lead to findings that promote the inclusion of a TCM related elective. A survey of 3<sup>rd</sup> year medical students at the University of Texas Medical Branch found that 85% of those students agree that they should learn to communicate with their patients about alternative therapies. Eighty-five percent also believe that they should be learning the material from a CAM practitioner. Ninety percent of these students consider CAM a suitable medical school topic (Frye et al, 2006). At a large, public medical school in the Midwest, first semester medical students were given an anonymous questionnaire asking them about alternative medicine and medical school coverage of this topic. Researchers found that 84% reported knowledge on CAM would be important to them as future physicians. Furthermore, 72% reported that they wanted exposure to alternative medicine during their medical training, but only 6% anticipated that they would receive adequate exposure to these alternative medicine practices (Greiner et al, 2000). The level of interest to learn about CAM by medical students is apparent, but to the knowledge of the authors, nobody has investigated the interest level of DPT students on this topic.

Another time consuming, yet promising, strategy would be to hold focus groups with physical therapy students, practicing physical therapists, patients (or a combination of any of those three) to become more familiar with their attitudes towards TCM.

**Conclusion:**

The authors of this study believe that DPT students should be exposed to TCM practices and techniques. Physical therapy programs can utilize some or all of the suggested strategies to dedicate time to TCM education in the curriculum. This will lead to more effective communication between peers, colleagues, and patients. Physical therapists will likely encounter direct access patients (or referred patients) who will ask them about the efficacy of various TCM techniques. It is important that the physical therapist understands these techniques in order to better serve a diverse patient population that may be interested in a complementary or alternative TCM treatment method. Physical therapists can continue to build and foster relationships with alternative medicine practitioners, and both can work together for the betterment of the patient. In addition, these relationships with other healthcare providers and patients are supported by the American Physical Therapy Association (APTA) Operational Plan on Cultural Competence. Adding these techniques to the physical therapist's skill set will expand his/her ability to treat patients who present with commonly seen conditions in the physical therapy setting. Many of these techniques are easy to incorporate into clinical practice with the proper training (i.e. tai chi, qigong, acupuncture).

Unlike what was noted in the osteopathic medical schools, physical therapy programs must introduce these techniques from an evidence-based perspective, focusing on the methods that have been shown to elicit the greatest results. It is crucial that educational content in the



DPT curriculum stay consistent with the APTA Vision 2020 in order to support clinical decision making that is based on scientific rationale. Physical therapists should continue to be the practitioners of choice for the diagnosis of, interventions for, and prevention of impairments, functional limitations, and disabilities related to movement, function and health (APTA Vision 2020). Adding more tools to the physical therapist's skill set should assist in their access, marketability, and competency in treating a patient population that is trending towards the use of Eastern medicine practices as a complement to Western medical practices.

## APPENDIX

### Traditional Chinese Medicine: A Survey to Assess Inclusion in DPT Curricula in the United States

College of Staten Island, CUNY - Doctor of Physical Therapy (DPT)

The National Institutes of Health (NIH) defines Traditional Chinese Medicine as follows:

“Traditional Chinese Medicine (TCM) originated in ancient China and has evolved over thousands of years. TCM practitioners use herbal medicines and various mind and body practices, such as acupuncture and tai chi, to treat or prevent health problems.”

The following survey instrument was developed by student physical therapists- Michael Erickson, Paul Nasri and David Perrotto, under the guidance of advisor Dr. Jeffrey Rothman, PT, Ed.D. It has been approved through the College of Staten Island (CSI) Human & Animal Research Protection Program Office (HARPPPO).

The survey is 25 questions, and should take approximately 10 minutes to complete.

Please note that all of your answers will remain confidential. Disclosure of information provided will only be seen by research team members.

**Chairperson:** Thank you for participating in our survey. We appreciate your time. If you have any questions, you may direct them to the following e-mail address:  
csi.dpt.tcm.research@gmail.com

**Name of Institution:**

**What is the role of the person completing this survey?**

- Department Chair / Program Director
- Full-time Faculty Member
- Adjunct Lecturer
- Invited Guest Speaker / Lecturer
- Other (please specify)

**Does your program introduce / expose its students to Traditional Chinese Medicine (TCM)?**

- Yes
- No

**Do you offer a mandatory course or an elective course on TCM?**

- Mandatory
- Elective
- Neither

**Is Traditional Chinese Medicine included within the scope of a particular course(s)?**

- Yes
- No

**Which course(s) introduce(s) your students to Traditional Chinese Medicine practices?  
(Select all that apply)**

- Therapeutic Exercise
- Modalities
- Special Topics
- Health Promotion & Prevention
- None of the courses introduce these practices
- Other (please specify)

**How much time is dedicated to TCM education?**

- As a part of a single lecture
- As a part of multiple lectures
- Has its own lecture
- Multiple lectures are dedicated to TCM
- Time is dedicated outside of the regularly structured class hours
- No time is dedicated to TCM education

**What topic(s) are covered in the lecture(s)? (Select all that apply)**

- Acupuncture
- Acupressure
- Acupoint Electrical Stimulation
- Qigong
- Tai Chi
- Cupping
- Herbal Medicine
- Tui Na Massage

- Philosophy of TCM
- Not Applicable
- Other (please specify)

**Is there a lab component to the TCM course / lecture?**

- Yes
- No
- Not Applicable

**If yes, which topic(s) is/are covered in the lab? (Select all that apply)**

- Acupuncture
- Acupressure
- Acupoint Electrical Stimulation
- Qigong
- Tai Chi
- Cupping
- Tui Na Massage
- Not Applicable
- Other (please specify)

**How competent do you believe your students are after completing these lab sessions?**

- Unable to perform the manual skills
- Able to perform the manual skills, with supervision and verbal cueing
- Able to perform the manual skills, independently
- Not Applicable

**Do you believe your students will be able to use these skills in clinical practice?**

- Yes
- No
- Not Applicable

**If no, why not?**

- Not a standard clinical practice

- Not well-trained in the techniques
- Students not interested in applying these techniques
- Not Applicable
- Other (please specify)

**Does your program offer any certifications that pertain to TCM practices? (qigong, tai chi, acupuncture, etc.)**

- Yes
- No

**If yes, which certification(s) are offered to your students?**

**Who delivers the TCM instruction to the students? (Select all that apply)**

- Full-time Faculty Member
- Adjunct Lecturer
- Invited Guest Lecturer
- Clinician with Traditional Chinese Medicine expertise
- None
- Other (please specify)

**Does / do the instructor(s) hold any TCM relevant certifications?**

- Yes
- No
- Not sure / uncertain
- Not Applicable

**If yes, which title(s) does / do the instructor(s) hold? (Select all that apply)**

- Certified Acupuncturist (CA)
- Chinese Herbalist (CH)
- Diplomate in Asian Body Work
- Diplomate in Acupuncture
- Diplomate in Chinese Herbalism
- Diplomate in Oriental Medicine

- Doctor of Acupuncture and Oriental Medicine (DAOM)
- Doctor of Oriental Medicine (DOM)
- Don't know / uncertain
- Not Applicable
- Other (please specify)

**Does the TCM instructor utilize these methods in the clinical setting? (is the knowledge applied in practice?)**

- Yes
- No
- Not sure / uncertain
- Not Applicable

**If TCM is not included (or is, but less than desired), why? (Select all that apply)**

- Time Restrictions
- Lack of research to support this practice
- Lack of expertise on the subject matter
- Lack of teaching resources (no qualified TCM educators available)
- Not applicable enough in clinical practice (lack of insurance coverage)
- Lack of patient willingness to accept alternative medicine techniques
- Other (please specify)

**Which of the following acts as the biggest obstacle to the incorporation of TCM in the curriculum?**

(Drop down list with the same responses as the question above). Respondent was asked to pick one. Included was “No interest in incorporating TCM in the curriculum.”

**The inclusion of TCM in your curriculum will enhance the ability of your students to treat patients with the following pathologies / clinical diagnoses: (Select all that apply)**

- Myofascial Pain Syndrome
- Post-stroke
- Complex Regional Pain Syndrome (CRPS)
- Headaches / Migraines
- Sleeping Disorders

- Rheumatoid Arthritis (RA)
- Osteoarthritis (OA)
- Chronic Low Back Pain
- Phantom Limb Pain
- Gait Pathology / Abnormalities
- Balance Impairments
- Fibromyalgia
- Frozen Shoulder
- Temporomandibular Joint (TMJ) Pain
- Parkinson's Disease
- Scoliosis
- None of the above
- Other (please specify)

**In your clinical experience, have patients been willing to utilize Traditional Chinese Medicine practices?**

- Yes
- No
- Not Applicable

**Do you believe that your patients benefit from the utilization of Traditional Chinese Medicine practices?**

- Yes
- No
- Not Applicable

**If you do not currently include TCM in your curriculum, do you plan to in the near future?**

- Yes
- No
- Not Applicable

**If yes, why are you interested in including TCM in your curriculum? (Select all that apply)**

- Evidence based research suggests it may be an effective treatment option
- Broadening PT students' knowledge base of treatment techniques

- Interest in alternative medicine practices
- Distinguishing your curriculum
- Do not plan to include TCM
- Other (please specify)

**I believe TCM education can / does positively contribute to our physical therapy curriculum and to the overall education of our students:**

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree



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