

RESEARCH ARTICLE OPEN ACCESS

Environmental Scan of the United States Regulatory Practices of Physical Therapy Dry Needling

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ABSTRACT

Purpose: This study aimed to investigate the dry needling (DN) regulation of physical therapists across United States (US) regulatory jurisdictions and assess alignment of these regulations with identified DN regulatory recommendations.

Methods: Using Choo's modes of environmental scanning framework, we conducted a comprehensive review of DN regulations by collecting data from physical therapy jurisdictional regulatory authorities' websites and by contacting their representatives directly. Comparisons of DN regulation to documents offering DN regulation recommendations were made by collecting information on DN regulation, pre-requisites, approved courses, course criteria, instructional hours, method of registration, and continued competency.

Results: Of 56 physiotherapy jurisdictions in the United States (50 states, 1 district and 5 territories), 43 jurisdictions permit physical therapists to practice DN. Of these, 22 legislate it, 2 regulate it using DN policy, 5 have both legislation and policy, and 14 have neither. Additionally, 5 prohibit the practice and 8 are silent on the topic. Comparisons of jurisdictional DN regulations to documents presenting regulation recommendations highlight gaps in regulation across jurisdictions. Jurisdictions have multiple and inconsistent requirements, including 24 jurisdictions having a course approval process, 22 requiring specific course content for DN courses, 21 requiring a minimum duration of DN instruction, 11 requiring clinical experience prior to practicing DN, 7 having an attestation form for DN, 4 reporting a registration or rostering system of physical therapists practicing DN and 1 mandating continued competency education for DN.

Conclusion: This environmental scan highlights the heterogeneity and gaps in DN regulations across US physical therapy regulatory jurisdictions. Our findings suggest that national regulatory guidelines may help reduce heterogeneity across jurisdictions by ensuring a minimal standard of competency, specifically from a safety perspective.

1 | Introduction

The International Acupuncture Association of Physical Therapist (IAAPT), a subgroup of World Physiotherapy affiliated with the World Health Organization, defines dry needling (DN) as “rapid, short-term needling to altered or dysfunctional tissues in order to improve or restore function” (International Acupuncture Association of Physical Therapists). As DN uses acupuncture needles to puncture the skin, the two are often confused. However, DN can be practiced independently from acupuncture

as it does not use the meridian system, or meridian points (International Acupuncture Association of Physical Therapists). Acupuncturists learn to locate a complex set of meridian points which are needled at a precise depth and direction (Zhou et al. 2015). These points can be targeted in different combinations to treat a larger scope of illness and disorders than DN (Zhou et al. 2015). DN relies on palpation of myofascial trigger points and their treatments focus almost exclusively on myofascial pain and dysfunction (McAfee et al. 2022b). For a more in-depth discussion on the similarities and differences between

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acupuncture and DN, the reader is directed to pre-existing literature (Zhou et al. 2015; Fan et al. 2017; Ijaz and Boon 2019; McAphee et al. 2022a).

Although DN is typically considered a safe practice in the hands of a competent practitioner (Dommerholt et al. 2015), as with other practices used to treat myofascial pain (Moore et al. 1999; Els et al. 2017; Dowell et al. 2022), serious adverse events have been documented (Valdes 2019; Cummings et al. 2014; Halle and Halle 2016; Skorupska 2019; McCutcheon and Yelland 2011). Due to the paucity of literature on DN adverse event frequency within physical therapy practice, inferences are often made from acupuncture studies because of their common use of filiform needles (Fan et al. 2017). Globally, serious adverse events secondary to DN have been reported to include pneumothorax (Valdes 2019; Halle and Halle 2016; McCutcheon and Yelland 2011; White 2004; Gattie et al. 2020), nerve injury (Valdes 2019; Halle and Halle 2016; Skorupska 2019; Gattie et al. 2020; Boyce et al. 2020), cardiac tamponade (Valdes 2019; Halle and Halle 2016), organ punctures (Valdes 2019; Skorupska 2019; Boyce et al. 2020), blood vessels injuries (Valdes 2019; White 2004; Gattie et al. 2020; Boyce et al. 2020) and infection (Valdes 2019; Skorupska 2019; Gattie et al. 2020; Boyce et al. 2020). Although serious DN adverse events are reported as rare (Boyce et al. 2020), many authors believe they are underreported (Valdes 2019; White 2004; Boyce et al. 2020) due to lack of clear definitions or recognition of adverse events by patients or practitioners (Valdes 2019), lack of standardized reporting methods (Valdes 2019; Boyce et al. 2020; Kearns et al. 2023), or due to fear of reprimand (Valdes 2019; White 2004; Boyce et al. 2020). Furthermore, studies reporting low risk of serious adverse events may do so because the denominator in risk calculations often includes treatments that were not done around areas where serious adverse events may occur (Valdes 2019; White 2004). For example, studies of acupuncture or dry needling on the lower extremity, where no risk of causing a pneumothorax exists, are often included in frequency calculations of pneumothorax secondary to needling.

Recently gaining popularity in the physical therapy profession (Valdes 2019; Halle and Halle 2016; McCutcheon and Yelland 2011; Gattie et al. 2020; Zhou et al. 2015; Dommerholt 2011; Ijaz et al. 2021; Matthews et al. 2021), a variety of DN courses have become available to address the increasing demand for DN training (Valdes 2019). However, due to a concern of a lack of consistent DN regulation over practice and education (Valdes 2019; Ijaz et al. 2021), it is unknown if current DN courses are sufficiently ensuring competency. With an identified lack of agreement on DN training requirements for physical therapists (Ijaz et al. 2021), calls have been made to review DN practices and educational standards (Gattie et al. 2020; Health Quality Council of Alberta). In 2015, Zhou et al. reported that “current training of DN for physical therapists in the United States is done only through continuing education or certificate programs, which are not strictly regulated and have few (if any) standards that need to be complied with” (Zhou et al. 2015). A more recent review of US DN courses reported instruction duration categories ranging from 0 to 20 h to more than 100 h (Gattie et al. 2020). Additionally, courses also differ in terminology

(Health Quality Council of Alberta), treatment philosophies, techniques, target tissues and examination methods (Gattie et al. 2020). Considering the relatively new addition of DN to the profession of physiotherapy, the risk of adverse events and the apparent variability in training, oversight is needed.

The United States (US) uses statutes (practice acts) to define professional scopes of practice which are enforced by licensure law. However, practice acts may be ambiguous and often do not keep up with advances in education, research and technology (American Physical Therapy Association n.d.). As a result, interpretation of the law falls to State regulatory authorities who develop rules and regulations for a particular practice (American Physical Therapy Association n.d.). As each jurisdiction is regulated independently, DN regulation can vary between them. An “Analysis of Competencies for Dry Needling by Physical Therapists” published in 2015 by the Federation of State Boards of Physical Therapy (FSBPT) reviewed the competencies needed for the safe and effective practice of DN and identified that 86% of competencies were being met in entry-to-practice education for physical therapists (Caramagno et al. 2015), whereas the remaining 14% needed to be covered by DN courses (Caramagno et al. 2015). The remaining competencies include surface anatomy as it pertains to underlying structures, physiological responses to DN, procedures related to secondary DN physiological and emotional complications, theoretical basis for pain science, DN and for combining DN with other interventions, DN secondary effect/complications on other systems, contraindications/precautions and factors influencing safety and injury prevention. Additional psychomotor skills needed to be covered in courses include standard needling handling, personal protection procedures and techniques, DN palpation techniques and needle insertion techniques. However, to what extent each state regulatory authority ensures these remaining competencies are met is unclear and a search for DN regulation revealed no prior scans or reviews. This justified undertaking an environmental scan aiming to compare the physical therapy jurisdiction DN regulations. Additionally, we chose to compare jurisdictional DN regulatory practices to regulation recommendations previously identified for Canada (Health Quality Council of Alberta; College of Physical Therapists of British Columbia 2020), as the FSBPT reported on competencies (Caramagno et al. 2015) and not regulation, and the US regulatory practices appeared sufficiently similar to those in Canada. This study aimed to identify and compare the dry needling (DN) regulation of physical therapists across United States (US) regulatory jurisdictions and assess alignment of these regulations with identified DN regulatory recommendations.

2 | Methods

2.1 | Study Design

Our study’s framework was modeled after Choo’s environmental scanning methodology (Choo 2001) as it is clear and could be adapted for our purpose. Choo notes that the choice of methods of scanning from his framework differ depending on beliefs about the analyzability of external environments and the extent to which the environment may be engaged for analysis

(Choo 2001). Of Choo's four scanning methods, we identified conditioned viewing and searching as applicable to our study as the regulatory environment was deemed analyzable and there is pre-existing literature describing regulations. Choo's remaining scanning methods, unidirectional viewing and enacting were not utilized as both use scanning methods for environments that are deemed unanalyzable.

2.2 | Developing an Extraction Table

Choo describes conditioned viewing as the use of existing knowledge about the environment to focus the scanning and action taking activities (Choo 2001). This was achieved by completing a literature and web-based search for regulations pertaining to DN in the United States. On October 25th, 2023, a Google search with the following syntax was used to find information to plan data extraction: physio* and ((dry needling) or (intramuscular stimulation)) and (rostering or regulations or guidelines or standards). This produced the following DN national guidelines: the United States (Caramagno et al. 2015), Ireland (Guidelines for Dry Needling Practice 2012), Australia (Australian Society of Acupuncture Physiotherapists 2016), New Zealand (Physiotherapy Acupuncture Association of New Zealand 2023), Switzerland (Association Suisse de Dry Needling 2022) and South Africa (South African Society of Dry Needling 2017). Also found were the Health Quality Council of Alberta's (HQCA) summary on the safe practice of dry needling in Alberta (Health Quality Council of Alberta), the College of Physical Therapists of British Columbia's (CPTBC) dry needling policy review (College of Physical Therapists of British Columbia 2020), the United Kingdom's Chartered Society of Physiotherapy position statement on DN (The Chartered Society of Physiotherapy 2023), a narrative review on DN (Dunning et al. 2014) and a Trigger Point Dry Needling Safety Guideline (McEvoy 2016). These documents cited two additional policies, the International Acupuncture Association of Physical Therapists guidelines for safe acupuncture and dry needling practice (International Acupuncture Association of Physical Therapists) and the World Health Organization benchmark for the training of acupuncture (Geneva: World Health Organization 2020), which were retrieved.

As the CPTBC's policy review and the HQCA's summary were identified as documents providing regulatory recommendations, these documents were used in conjunction with the other literature to inform extraction categories. Collectively, the recommendations put forth by these documents are as follows: (1) That courses are evaluated for DN safety, (2) the regulatory authority maintains a list of approved courses, (3) physical therapists have a minimum number of practice years prior to taking a DN course, (4) that continuing competency for DN be mandated, (5) that a standardized reporting system for serious adverse events be provided by the regulatory authority, and (6) that consolidated and complete DN information be provided to patients to improve informed consent (Health Quality Council of Alberta; College of Physical Therapists of British Columbia 2020). Based on this literature, the following data extraction categories were identified: DN regulation, DN licencing pre-requisites, approved courses, course criteria, instructional hours, method of registration and continued competency.

2.3 | Extracting Regulatory Information

Secondly, we used Choo's searching strategy to actively find information from a web-based environment to update and combine publicly available information (Choo 2001). This extraction form was piloted with three regulatory authorities websites (State of Alabama Board of Physical Therapy n.d.; Arkansas Department of Health n.d.; Arizona State Board of Physical Therapy n.d.). Regulatory information found on websites, or lack thereof, helped to inform data extraction from websites and follow-up survey questions for regulatory authorities. Continued competency and rostering or registration practices were added to the extraction table as this was not noted on regulatory authorities' websites. One PhD student, a registered physiotherapist, an experienced DN practitioner and an instructor populated the extraction table by reviewing each US physical therapy regulatory authority's website and by email contact with each authority. The websites of each regulatory authority in the United States were identified initially by the American Physical Therapy Association's webpage identifying all the jurisdictions allowing physical therapists to dry needle (Total Motion Physical Therapy Inc 2023) and contact information from a FSBPT web page listing all of the US physical therapy licensing authorities (Federation of State Boards of Physical Therapy 2024). These were confirmed by doing an independent web search using a Google search engine and inputting each state name followed by 'Board of physical therapy'. The information retrieved was independently reviewed by a second reviewer to ensure accuracy. Consensus discussions between reviewers occurred when either no information pertaining to DN could be found or when discrepancies in information extracted by the first and second reviewers were noted. Ultimately, the first and second reviewers came to consensus on all jurisdictions.

Jurisdictions were organized into the following three categories and follow-up questions were developed for each category: jurisdictions with no approved DN courses, jurisdictions with approved DN courses but no listed required course content, jurisdictions with approved DN courses and listed required course content. Specific clarification questions were developed for Massachusetts, Michigan, and Pennsylvania to reconcile discrepancies between their regulatory authority and Association website as to DN approval in their jurisdiction. Emails with questions were sent out to each regulatory authority on December 20, 2024 with reminders and follow up questions sent until March 01, 2025, allowing until October 22, 2025 to complete data collection. Thirteen regulatory authorities responded to all questions, thirteen had limited response, fifteen responded but provided no further information (twelve referred back to publicly available documents on their websites and three had automated responses) and two did not respond.

2.4 | Data Synthesis

For each category in the extraction table, a description of the data was provided for each US jurisdiction regulating DN for physical therapists. Our initial intent was to compare each authority's regulation of DN to the recommendations set forth in the FSBPT's Analysis of Competencies for Dry Needling by Physical Therapists (Caramagno et al. 2015). However, the

authorities' websites were not clear to what extent they adhered to the FSBPT's recommendations and the FSBPT's recommendations are not specifically DN regulation guidance. Therefore, the extracted information was compared to recommendations relevant to DN regulation from the CPTBC's Dry Needling Summary Policy Review (College of Physical Therapists of British Columbia 2020) and the Health Quality Council of Alberta's (HQCA) summary report on the safe practice of dry needling (Health Quality Council of Alberta). These documents were selected as reference for comparisons due to their focus on DN safety, their comprehensive analysis of DN practice and regulation, as well as to align with a previous study comparing these documents to regulation in Canada (Crocker and Parent, *forthcoming*).

3 | Results

There currently exists much heterogeneity in the regulation of DN amongst US physical therapy jurisdictions. Of the 56 jurisdictions, 43 allowed DN by physical therapists. The following reporting will only be of those 43 jurisdictions allowing DN. DN is regulated by legislation in 51% of jurisdictions (Arizona State Board of Physical Therapy 2021; Colorado Revised Statutes 2023; Department of Regulatory Agencies 2023; Delaware Examining Board of Physical Therapists and Athletic Trainers; F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021; State of Georgia Board of Physical Therapy 2025; Health Professional Licensing Office, Department of Public Health and Social Sciences; Illinois General Assembly 2026; Indiana Board of Physical Therapists 2019; Kansas Board of Healing Arts 2022; Louisiana Physical Therapy Board 2021; Maryland.Gov Division of State Documents *n.d.*; Bil 2020; Mississippi State Board of Physical Therapy 2024a; Nebraska Department of Health and Human Services 2020; New Jersey Board of Physical Therapy Examiners 2022; New Mexico State Physical Therapy Board 2019; South Dakota Codified Laws 2024; Tennessee Department of State Division of Publication 2016; Utah Office of Administrative Rules 2023; Utah State Legislature 2014; Virginia Law 2023; West Virginia Board of Physical Therapy 2021; Physical Therapy Board of Wyoming 2022), by policy in 5% (Maine Board of Examiners in Physical Therapy 2018; Oklahoma Medical Board), by both in 12% (Washington State Legislature 2023; Washington State Department of Health 2016; District of Columbia Municipal Regulations of Physical Therapy 2019; District of Columbia 2010; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; Health and Welfare Committee 2018; Little 2024a; Montana Board of Physical Therapy Examiners 2016; Nevada Physical Therapy Board 2019; Nevada Physical Therapy Board *n.d.*), and 33% have no legislation (Arkansas Department of Health *n.d.*; Alabama Board of Physical Therapy 2021; Alaska Department of Commerce, Community, and Economic Development 2023b; Arkansas State Board of Physical Therapy 2009; The Iowa Legislature 2024; Brinly 2023; New Hampshire Physical Therapy Governing Board 2010; New Hampshire Physical Therapy Governing Board 2023; North Carolina Board of Physical Therapy Examiners 2019; North Carolina Board of Physical Therapy and Examiners *n.d.*; North Dakota State Board of Physical Therapy 2021; Ohio Occupational Therapy and Physical Therapy and Athletic Trainers Board 2023; State of Rhode

Island Department of Health 2023; South Carolina Legislature 2018; Texas Board of Physical Therapy Examiners 2023a, 2023b; Vermont General Assembly 2023; Vermont Secretary of State Office of Professional Regulation 2013; Wisconsin Physical Therapy Examination Board 2021). Of those that permit DN but are lacking specific DN legislation or policy, 14% note that either their legislation or policy supports its use or that there is nothing in their legislation or policy that would preclude DN from physical therapy scope of practice (Alaska Board of Physical Therapists and Occupational Therapists 2023; Iowa American Physical Therapy Association 2016; Klusch 2008; Ohio Occupational Therapy Physical Therapy and Athletic Trainers Board 2015). Additionally, 17% explicitly prohibit DN by physical therapists (Physical Therapy Board of California 2018; Hawaii Board of Physical Therapy 1993; New York State Education Department Office of the Professions *n.d.*; American Physical Therapy Association 2023; Rosenblum 2017), and 28% are silent on the matter (American Samoa 2023; Connecticut 2024; Michigan Administrative Rules 2023; Minnesota Board of Physical Therapy 2018; Missouri Board of the Healing Arts 2008; Commonwealth of the Northern Mariana Islands Health Care Professions Licensing Board 2020; Puerto Rico Board of Physical Therapy 2019; Virgin Island Department of Health 2022) (Table 1).

Of the 26% of regulatory authorities requiring clinical experience prior to practicing DN, 45.5%, require a minimum of 2 years of physical therapy practice (Delaware Examining Board of Physical Therapists and Athletic Trainers; F. Legislature and Title 2023; Bil 2020; New Jersey Board of Physical Therapy Examiners 2022; Utah State Legislature 2014), 45.5% require 1 year (Health Professional Licensing Office, Department of Public Health and Social Sciences; Tennessee Department of State Division of Publication 2016; Washington State Department of Health 2016; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; North Carolina Board of Physical Therapy Examiners 2023a) and 9% requires 6 months of practice (New Mexico State Physical Therapy Board 2019) (Table 1) 5.

Among the 56% of regulatory authorities having a course approval process, 33% are from the jurisdiction regulatory authority (Delaware Examining Board of Physical Therapists and Athletic Trainers; Kansas Board of Healing Arts 2022; Louisiana Physical Therapy Board 2021; Mississippi State Board of Physical Therapy 2024a; New Jersey Board of Physical Therapy Examiners 2022; New Mexico State Physical Therapy Board 2019; South Dakota Codified Laws 2024; North Carolina Board of Physical Therapy Examiners 2023a), 50% from the American Physical Therapy Association (APTA), it's local branch, the FSBPT or the Commission on Accreditation in Physical Therapy Education (Arizona State Board of Physical Therapy 2021; F. Legislature and Title 2023; Utah Office of Administrative Rules 2023; Virginia Law 2023; Virginia Law 2024; Physical Therapy Board of Wyoming 2022; Montana Board of Physical Therapy Examiners 2016; Ohio Occupational Therapy Physical Therapy and Athletic Trainers Board 2015; Legal Information Institute 2019; Leahy 2023; Oklahoma Medical Board) and 17% from any of these options (Tennessee Department of State Division of Publication 2016; District of Columbia Municipal Regulations of Physical Therapy 2019; Nevada Physical Therapy

TABLE 1 | United States of America regulations of dry needling by jurisdiction (50 states, 1 district and 5 territories).

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering		Continued competency Requirements specific to DN
							No	Yes	
Alabama	Yes (Alabama Board of Physical Therapy 2024)	None	None (Alabama Board of Physical Therapy 2021)	None	None	None	No	No	None
Alaska	Yes (Alaska Board of Physical Therapists and Occupational Therapists 2023)	None	None (Alaska Department of Commerce, Community, and Economic Development 2023b)	None	Must include, but not be limited to, training in indications, contraindications, emergency preparedness and response, potential risks, proper hygiene, proper use and disposal of needles, and appropriate selection of clients, relevant standards of the Center for Disease control and prevention, and Occupational safety and Health Administration blood borne pathogen standards (Alaska Department of Commerce, Community, and Economic Development 2023a)	None (Alaska Department of Commerce, Community, and Economic Development 2023b)	No	No	None
America Samoa (PTs are regulated generally under the American Samoa bar association (America Samoa Bar Association 2020)	Silent	None	None (American Samoa Bar Association, 2020a, 2020b)	None	None	None	No	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	a) Didactic or self-study hours b) In person/ hands on	Minimum required course hours	Registration /Rostering		Continued competency Requirements specific to DN
								No	Yes	
Arizona	Yes	None	Legislation (Arizona State Board of Physical Therapy 2021)	Approved by APTA, FSBPT and/or CAPTE (Arizona State Board of Physical Therapy 2021) (S + F, physiotherapy seminars and Consulting (Arizona American Physical Therapy Association 2024))	Sterile needle standards: U.S. Centers for Disease control and prevention or the U.S. Occupations Safety and Health Administration. Anatomical Review, Blood Borne Pathogens contraindications and indications (Arizona State Board of Physical Therapy 2021)	a+b) 24 (Arizona State Board of Physical Therapy 2021)	A = has attestation form but no registration/ rostering system.	No	None	
Arkansas	Yes (Executive Director Nancy Worthen 2009)	None	None (Arkansas State Board of Physical Therapy 2009; Arkansas Department of Health n.d.)	None	None	None	None	No	None	
California	No (Physical Therapy Board of California 2018)	None	None	None	None	None	None	No	None	
Colorado	Yes	None	Legislation (Colorado Revised Statutes 2023; Department of Regulatory Agencies 2023)	None	Specific knowledge and psychomotor objectives, Clinical decision-making; Written and psychomotor assessment of knowledge and skills (Department of Regulatory Agencies 2023)	a) 50 h (of which b) 40 (Department of Regulatory Agencies 2023))	None	No	None	
Connecticut	Silent	None	None (Connecticut 2024)	None	None	None	None	No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	a) Didactic or self-study b) In person/hands on	Minimum required course hours	Registration /Rostering		Continued competency Requirements specific to DN
								No	Yes	
Delaware	Yes	2 years practice (Delaware Examining Board of Physical Therapists and Athletic Trainers)	Legislation: (Delaware Examining Board of Physical Therapists and Athletic Trainers)	Board approved (Delaware Examining Board of Physical Therapists and Athletic Trainers) (No DN courses could be found (Delaware Board of Physical Therapy and Athletic Trainers 2021))	DN history, current literature and evidence-based practice, anatomy and physiology, choice and operation of supplies and equipment, knowledge of technique including indications/contraindications and precautions, proper technique of tissue penetration, Hazards and complications, safe practice guidelines and generally accepted standards of practice including clean needle techniques and OSHA's bloodborne pathogen standards, post intervention care, including adverse response/emergency, successful completion of psychomotor and cognitive performance (practical and written examination), supervised training, DN program and supervision-taught by a physical therapist with qualifications of subsection (Delaware Examining Board of Physical Therapists and Athletic Trainers)	a) 54; 25 h prior to practicing (Delaware Examining Board of Physical Therapists and Athletic Trainers)	A = has attestation form but no registration/rostering system.	No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours	a) Didactic or self-study	b) In person/hands on	Registration /Rostering		Continued competency Requirements specific to DN
									No	Yes	
District of Columbia	Yes	None	Legislation (District of Columbia Municipal Regulations of Physical Therapy 2019) Policy (District of Columbia 2010)	Board or CAPTE approved (District of Columbia Municipal Regulations of Physical Therapy 2019) (Institute of advanced musculoskeletal treatments (District of Columbia Board of Physical Therapy 2020))	None	None	None	None	No	Yes	A = has attestation form but no registration/rostering system.
Florida	Yes	2 years (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)	Legislation (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)	APTA, state APTA chapter or FSBPT approved (F. Legislature and Title 2023) (Myopain seminars, select medical, SFE, Florida Physical Therapy Association 2004))	Theory of DN, selection and safe handling of needles/relevant equipment and instruction on proper biohazardous waste management, indications and contraindications, Psychomotor skills, Postintervention care, including adverse responses/record-keeping, and reporting obligations. (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)	a+b) 50 (minimum of 25 supervised DN sessions) (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)			A (124)		None
Georgia	Yes	None	Legislation (Georgia Rules and Regulations 2020)	None (Georgia Rules and Regulations 2020)	Proof of OSHA blood born pathogens standards completion (Georgia Rules and Regulations 2020)	a) 50 (180)			A (125)		None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering		Continued competency Requirements specific to DN
							No	Yes	
Guam	Yes	1 year (Health Professional Licensing Office, Department of Public Health and Social Sciences)	Legislation (Health Professional Licensing Office, Department of Public Health and Social Sciences)	None	Musculoskeletal and neuromuscular system, the anatomical basis of pain mechanisms, chronic pain and referred pain, myofascial trigger point therapy and universal precautions, intramuscular manual therapy technique, Indications and contraindications, Documentation of intramuscular therapy, Management of adverse effects, practical psychomotor properties, The Occupational safety and Health Administrations blood born Pathogens standard. (Health professional licensing Office et al.)	a) 50 (30 specific to DN) b) 54 + 200 supervised treatment sessions (Health Professional Licensing Office, Department of Public Health and Social Sciences)	No	A = has attestation form but no registration/rostering system.	None
Hawaii	No	None	Legislation (Hawaii Board of Physical Therapy 1993)	None	None	None	No	None	None
Idaho	Yes	1 year of practice (Physical Therapy Licensure Board Division of Occupational And Professional Licensures 2023)	Legislation (Physical Therapy Licensure Board Division of Occupational And Professional Licensures 2023; Health and Welfare	None (Little 2024b)*2 Recommended sources for CEU: American physical therapy association (APTA) or any of its sections or local	Instruction + training on indications/contraindications, safe needling technique, and blood borne pathogens; successful completion of an assessment of	a) 27, of which b) 16 (Physical Therapy Licensure Board Division of Occupational And Professional Licensures 2023)	A (Idaho Physical Therapy Licensure Board 2025)	None	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering	
							No	Yes
			Committee 2018) Policy (Little 2024a)	chapters; CAPTE; the National Athletic trainers association; an accredited college or university; or activities otherwise germane to the physical therapy profession. (Little 2024b)	proficiency in dry needling, including a practical skill demonstration (Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023)		A = has attestation form but no registration/rostering system.	Continued competency requirements specific to DN
Illinois	Yes	None	Legislation (Illinois General Assembly 2026)	None	1. Musculoskeletal and neuromuscular systems, anatomical basis of pain mechanisms, chronic pain and referred pain, 2. Specific instruction to intramuscular stimulation (Illinois General Assembly 2026)	a) 50 h in category 1, 30 h in category 2. b) 54 h of practicum and 200 supervised treatment sessions (Illinois General Assembly 2026)	No	None
Indiana	Yes	None	Legislation (Indiana Board of Physical Therapists 2019)	Courses approved by APTA, local APTA, FSBPT or organizations affiliated with the above (Legal Information Institute 2019) (Body one physical therapy, Hendricks regional Health (Indiana American Physical Therapy Association 2024))	Theory Practice Technique (Indiana Board of Physical Therapists 2024)	a) 50 h of which b) 40 (Indiana Board of Physical Therapists 2019)	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering		Continued competency Requirements specific to DN
							No	Yes	
Iowa	Yes (Iowa Board of Physical and Occupational Therapy 2016)	None	None (The Iowa Legislature 2024)	None	None	None	No	No	None
Kansas	Yes	None	Legislation (Kansas Board of Healing Arts 2022)	Board approved course (Kansas Board of Healing Arts 2022) (No courses could be found)	Anatomical review, Indications/contraindications, Evidence-based theory Sterile needle procedures: (The U.S. centers for disease control and prevention; or the U.S. occupational safety and health administration; blood-borne pathogens) Postintervention care, adverse response and emergency response, assessment of technique and psychomotor skills (Kansas Board of Healing Arts 2022)	b) 200 supervised treatment sessions (Kansas Board of Healing Arts 2022)	No	No	None
Kentucky	Yes (Klusich 2008)	None	None (Brinly 2023)	No	None	None	No	No	None
Louisiana	Yes	None	Legislation (Louisiana Physical Therapy Board 2021)	Board approved (Louisiana Physical Therapy Board 2021) (DNP, EIM, Fran U DPT program, IDNI, IAS + + BS, MSDN Ed., PT solutions, RHPT and Ed., select medical OP, SMI, S + F, summit	None	a+b) 25 (Louisiana Physical Therapy Board 2021)	No	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration /Rostering		Continued competency requirements specific to DN
							No	Yes	
Maine	Yes	None	Policy (Maine Board of Examiners in Physical Therapy 2018)	professional Ed., ICE, TMR (Louisiana Physical Therapy Board 2024))	Board strongly recommends that licensees assess their knowledge, abilities and skill levels prior to performing dry needling. Licensees should determine whether it is necessary for them to obtain post-graduate education, knowledge and training in the following areas before engaging in dry needling (Maine Board of Examiners in Physical Therapy 2018)	None	No	None	
Maryland	Yes	None	Legislation (Maryland.Gov Division of State Documents n.d.)	APTA, state APTA chapter, or FSBPT approved (Maryland Division of State Documents n.d.) (S + F, dr. Ma's systematic DN, AAMT, ATI, IAMT, integrative DN, EIM, myopain seminars (American Physical Therapy Association Maryland 2021))	DN theory, application, technique, indications/contraindications; infection control: The Occupational safety and Health Administration's Bloodborne Pathogen Protocol, safe handling of needles; emergency preparedness/response procedures, Appropriate documentation (Maryland Division of State Documents n.d.)	a) 80 h of which b) 40 (Maryland Division of State Documents n.d.)	A (Maryland Department of Health n.d.)	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/ hands on	Registration /Rostering		Continued competency requirements specific to DN
							No	Yes	
Massachusetts	Yes (Bil 2020)	Min 2 years (Bil 2020)	Legislation (Bil 2020)	None as per Board. The local APTA notes courses are: APTA or state APTA chapter or FSBPT approved (Leahy 2023) (No DN courses listed (I. American Physical Therapy Association and Indiana 2024))	None	a) 24 (per APTA) (Leahy 2023) 500 didactic hours and 150 clinical hours (Bil 2020)	No	No	None
Michigan	Silent	None	None (Michigan Administrative Rules 2023)	None	None	None	No	No	None
Minnesota	Silent	None	None (Minnesota Board of Physical Therapy 2018)	None	None	None	No	No	None
Mississippi	Yes	None	Legislation (Mississippi State Board of Physical Therapy 2024a)	Board approved (Mississippi State Board of Physical Therapy 2024a) (AAMT, Kineticore, EMI, IAMT, integrative DN institute, DOUBLE E PT education, US Air Force, the Army medical Department Center and school,	None	a+b) 50 (Mississippi State Board of Physical Therapy 2024a)	Yes (Mississippi State Board of Physical Therapy 2024a)	Yes (Mississippi State Board of Physical Therapy 2024a)	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration /Rostering		Continued competency Requirements specific to DN
							No	Yes	
Missouri	Silent	None	None (Missouri Board of the Healing Arts 2008)	RHPT + ED, Mississippi DN Education, TMR, Bench mark rehab institute, medical minds in motion, upstream rehab institute, university of Augustine for Health sciences, S + F, elite continuing Education, PT solutions physical therapy, IMIT. (Mississippi state Board of physical therapy n.d.)	None	None	No	Yes	None
Montana	Yes	None	Legislation (Montana Board of Physical Therapy Examiners 2016) Policy—refers to APTA or FSBPT guidelines (Montana Board of Physical Therapy Examiners 2016)	Must meet APTA or FSBPT standards for continuing competency (Montana Board of Physical Therapy Examiners 2016) (No DN courses listed (Montana American Physical Therapy Association 2024))	Indications/ contraindications, potential risks, proper hygiene, proper use and disposal of needles, Appropriate client selection (Montana Board of Physical Therapy Examiners 2016)	None	No	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours		Registration /Rostering		Continued competency requirements specific to DN
						a) Didactic or self-study	b) In person/hands on	No	Yes	
Nebraska	Yes	None	Legislation (Nebraska Department of Health and Human Services 2020)	Complete a pre-service or in-service training (Nebraska Department of Health and Human Services 2020)	Pertinent anatomy and physiology, choice and operation of equipment, knowledge of test indications, proper technique of tissue penetration, sterile methods, hazards, and complications, post -test care, knowledge in test interpretation (Nebraska Department of Health and Human Services 2020)	None	None	No	No	None
Nevada	Yes (Nevada State Board of Physical Therapy Examiners 2012)	None	Legislation (Nevada Physical Therapy Board 2019) Policy (Nevada physical T and herapy Board)	Board, APTA or CAPTE approved (Nevada Physical Therapy Board 2019) (TMR, AAMT, submit professional Education, S + F, Pure Performance rehab (Nevada Physical Therapy Board 2024))	Standards: Centers for Disease control and prevention of the United States Department of Health and Human services or the Occupational safety and Health Administration of the United States Department of labor, anatomy relevant to dry needling, control of blood-borne pathogens; and, indications/ contraindications (Nevada Physical Therapy Board 2019)	a) 150 total	a) 25 h from a post grad course (Nevada Physical Therapy Board 2019; Nevada physical T and herapy Board)	Yes (Nevada Physical Therapy Board 2019)	Yes	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	a) Didactic or self-study hours	b) In person/hands on	Minimum required course hours	Registration /Rostering		Continued competency requirements specific to DN
									No	Yes	
New Hampshire	Yes as per APTA(106)	None	None (New Hampshire Physical Therapy Governing Board 2010; New Hampshire Physical Therapy Governing Board 2023)	None	None	None	None	A = has attestation form but no registration/rostering system.	No	None	
New Jersey	Yes	2 years (within New Jersey) (New Jersey Board of Physical Therapy Examiners 2022)	Legislation (New Jersey Board of Physical Therapy Examiners 2022) (AAMT, EIM, IAMT, institute of Orthopedic & sports manual therapy, integrative Dry Needling institute, IAS + BS, S + F Myopain seminars, select medical, The institute of clinical excellence TMR (New Jersey Board of Physical Therapy Examiners 2026))	Board approved (New Jersey Board of Physical Therapy Examiners 2022)	History and current literature review of dry needling and evidence-based practice, pertinent anatomy/physiology, covers the choice and operation of dry needling supplies/equipment, dry needling technique, indications, contraindications, precautions, risks, complications of dry needling, safe practice guidelines/standards of practice (including clean needle techniques and the Occupational safety and Health Administration's bloodborne pathogens standard), knowledge of post-intervention care, adverse response, emergency, proper documentation (New Jersey Board of Physical Therapy Examiners 2022)	a) 80 h with b) 40 practical with a physical therapist who has a min of 5 years DN experience) (New Jersey Board of Physical Therapy Examiners 2022)	No	Yes—10 credits in DN in each biennial license renewal period (New Jersey Board of Physical Therapy Examiners 2022)	No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering		Continued competency Requirements specific to DN
							No	Yes	
New Mexico	Yes	6 months (New Mexico State Physical Therapy Board 2019)	Legislation (New Mexico State Physical Therapy Board 2019)	Board approved courses (New Mexico State Physical Therapy Board 2019) DN courses from these Board approved providers: Allied Health, Great lakes seminars, PESI, inc APTA geriatrics, Hanger clinic, CIAO, Cincinnati Sports medicine, Flex therapists, GMP Fitness, IAHE, IAOM, UNM lend, maitland, great seminars and Books, great seminars online, med Bridge (New Mexico Regulation and licencing Department n.d.)	Indications/contraindications/potential risks, proper hygiene, proper use and disposal of needles, and Appropriate selection of clients (New Mexico State Physical Therapy Board 2019).	a) 24 (61)	No	None	
New York	No (per APTA (American Physical Therapy Association 2023))	None	None (New York State Education Department Office of the Professions n.d.)	None	None	No	No	None	
North Carolina	Yes (North Carolina Board of Physical Therapy Examiners 2023a)	Min 1 year (North Carolina Board of Physical Therapy Examiners 2023a)	None (North Carolina Board of Physical Therapy Examiners 2019; NCAC 48G-0105-0112)	Board: Approved providers in accordance with 21	None	a+b) 50 h in person: 50% practical (North Carolina Board of Physical Therapy	No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration /Rostering		Continued competency Requirements specific to DN
							No	Yes	
North Dakota	Yes (North Dakota Board of Physical Therapy 2022)	None	North Carolina Board of Physical Therapy and Examiners n.d.)	or Formal education, training, and mentorship that is equivalent to the above. (North Carolina Board of Physical Therapy Examiners 2023a)	Must have completed education in DN demonstrating competence (North Dakota Board of Physical Therapy 2022) Dakota Board of Physical Therapy 2022)	No	No	None	
Northern Mariana Islands	Silent	None	None (Commonwealth of the Northern Mariana Islands Health Care Professions Licensing Board 2020)	Physical Therapy 2022)	None	No	No	No	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering		Continued competency Requirements specific to DN
							No	Yes	
Ohio	Yes (Ohio Occupational Therapy Physical and Athletic Trainers Board 2015)	None	None (Ohio Occupational Therapy and Physical Therapy and Athletic Trainers Board 2023)	Local APTA (Ohio Occupational Therapy and Physical Therapy and Athletic Trainers Board 2015) (AAAMT, DNP, IAMT, S + F, Summit professional Education ICE, TMR, seminars (Ohio Physical Therapy Association 2024))	None	No	No	No	No
Oklahoma	Yes, but silent as per APTA (American Physical Therapy Association 2023)	None	Policy (Caramagno et al. 2015; Oklahoma medical Board)	Board approved provider (Oklahoma Medical Board n.d.); Any agency or board responsible for licensing individuals to practice physical therapy in the United States or Canada, APTA, state APTA chapters, FSBPT and any accrediting subsidiary, IACET, PT and PTA programs approved by an agency recognized by either the U.S. Department of Education or the Council on Postsecondary	None	No	No	No	No

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration /Rostering		Continued competency Requirements specific to DN
							No	Yes	
Oregon	No (Rosenblum 2017)	None	None	Accreditation (Allied Health Education, IAMT, integrative DN institute, OrthoEd, physical therapy central, summit professional Education, TMR, valir Outpatient Clinics (Oklahoma Medical Board 2022))	None	No	No	No	No
Pennsylvania	No (Pennsylvania State Board of Physical Therapy 2011)	None	None	None	None	No	No	No	No
Puerto Rico	Silent	None	None (Puerto Rico Board of Physical Therapy 2019)	None	None	None	No	No	None
Rhode Island	Yes (Rhode Island Board of Physical Therapy Minutes of Meeting 2012)	None	None (State of Rhode Island Department of Health 2023)	None	None	No	No	No	None
South Carolina	Yes (South Carolina Board of Physical Therapy Examiners 2022)	None	None (South Carolina Legislature 2018; South Carolina Board of Physical Therapy Examiners 1976)	None	None	None	No	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	a) Didactic or self-study hours	b) In person/ hands on	Minimum required course hours	Registration /Rostering		Continued competency requirements specific to DN
									No	Yes	
South Dakota	Yes	None	Legislation (South Dakota Codified Laws 2024)	Board approved courses (South Dakota Codified Laws 2024) (No courses found)	None		None		A (South Dakota Board of Physical Therapy n.d.)	None	
Tennessee	Yes	1 year practice (Tennessee Department of State Division of Publication 2016)	Legislation (Tennessee Department of State Division of Publication 2016)	Courses must be Board (or Board consultant) approved (Tennessee Department of State Division of Publication 2016) All courses are approved through TN -APTA (Tennessee Board Manager 2024) mary Bennett Board manager Feb 15, 2024) (IAS + BS IAMT McMinville physical therapy Physio seminars and Consulting. Integrative DN, michael Bourassa, S + F, IAMT (Tennessee American Physical Therapy Association 2023))	Technique, indications/ contraindications, documentation, management of adverse effects, practical psychomotor competency, Occupational safety and Health Administration's Bloodborne Pathogens Protocol. (Tennessee Department of State Division of Publication 2016)	a+b) 50 (typically satisfied in PT school)	a) 24 specific to DN (Tennessee Department of State Division of Publication 2016)		No	None	
Texas	Yes (Texas Board of Physical Therapy Examiners 2016)	None	None (Texas Board of Physical Therapy Examiners 2023 ; Texas Board of Physical and Therapy Examiners 2023)	None	None				No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours a) Didactic or self-study b) In person/hands on	Registration/Rostering No Yes A = has attestation form but no registration/rostering system.	Continued competency requirements specific to DN
Utah	Yes	2 years (Utah State Legislature 2014)	Legislation (Utah Office of Administrative Rules 2023; Utah State Legislature 2014)	Courses approved by the APTA (or a chapter thereof) or FSPT (Utah Office of Administrative Rules 2023) (could not find courses)	None	a) 300 of which b) 54 + a log of 250 myofascial trigger point sessions (Utah State Legislature 2014)	A, yes (Utah State Legislature 2014)	None
Vermont	Yes (Tredeau 2024)	None	None (Vermont General Assembly 2023; Vermont Secretary of State Office of Professional Regulation 2013)	Any agency or board responsible for licensing individuals to practice physical therapy in the United States or Canada, APTA, state chapters of APTA, including any sections, credentialled residencies and fellowships and physical therapist and physical therapist assistant programs approved by an agency recognized by either the U.S. Department of Education or the Council on Postsecondary Accreditation, FSBPT (Vermont Secretary of State and Office of Professional Regulation 2024)	None	None	No	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN Yes (Virginia Law 2023)	Pre-requisites None	DN regulated by legislation or policy* Legislation (Virginia Law 2023)	Courses approved by (available courses) Course approved by a sponsor listed in subsection B of 18VAC112-20-131 (includes APTA, local APTA, local, state, or federal government agencies, regionally accredited colleges and universities, Health care organizations accredited by a national accrediting organization granted authority by the Centers for medicare and medicaid services to assure compliance with medicare with medicare conditions of participation, the American medical association—category I continuing medical Education course, the National Athletic trainers' association FSBPT, the National strength and conditioning association, providers	Required course content Emergency preparedness/response, contraindications/ precautions, secondary effects/complications, palpation and needle techniques, and physiological responses. (Virginia Law 2023)	Minimum required course hours a) Didactic or self- study b) In person/ hands on		Registration /Rostering No Yes A = has attestation form but no registration/ rostering system.		Continued competency Requirements specific to DN
						None	No	No	None	
Virginia	Yes (Virginia Law 2023)	None	Legislation (Virginia Law 2023)	Course approved by a sponsor listed in subsection B of 18VAC112-20-131 (includes APTA, local APTA, local, state, or federal government agencies, regionally accredited colleges and universities, Health care organizations accredited by a national accrediting organization granted authority by the Centers for medicare and medicaid services to assure compliance with medicare with medicare conditions of participation, the American medical association—category I continuing medical Education course, the National Athletic trainers' association FSBPT, the National strength and conditioning association, providers	Emergency preparedness/response, contraindications/ precautions, secondary effects/complications, palpation and needle techniques, and physiological responses. (Virginia Law 2023)	None	None	No	None	

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours	a) Didactic or self-study	b) In person/hands on	Registration/Rostering	Continued competency Requirements specific to DN
Virgin Islands	Silent	None	None (Virgin Island Department of Health 2022; Legislature of the Virgin Islands 2017)	approved by other state licensing boards for physical therapy (any course appearing in this document) Virginia Law (2023)	None	None	None	None	No	None
Washington	Yes	1 year (Washington State Legislature 2023)	Legislation (Washington State Legislature 2023) Policy—sunrise (Washington State Department of Health 2016)	None	Anatomy/physiology, Anatomical basis of pain mechanisms, chronic pain, and referred pain, trigger point evaluation/management, universal precautions, Preparedness/response to unexpected and adverse events, intramuscular needling technique, indications/contraindications, documentation and informed consent, Management of adverse effects, practical psychomotor competency, Occupational safety and health administration's	a) 100 b) 75 + 150 treatment sessions (Washington State Legislature 2023)	A, yes (Department of Health and Board of Physical Therapy 2024)	None	Yes	None

(Continues)

TABLE 1 | (Continued)

State	Allow DN	Pre-requisites	DN regulated by legislation or policy*	Courses approved by (available courses)	Required course content	Minimum required course hours	Registration /Rostering		Continued competency requirements specific to DN
							No	Yes	
West Virginia	Yes	None	Legislation (West Virginia Board of Physical Therapy 2021)	None	bloodborne pathogens protocol. (Washington State Legislature 2023)		A = has attestation form but no registration/rostering system.	None	
Wisconsin	Yes (per APTA) (American Physical Therapy Association 2023)	None	None (Wisconsin Physical Therapy Examination Board 2021)	None	None	a) Didactic or self-study		None	
Wyoming	Yes	None	Legislation (Physical Therapy Board of Wyoming 2022)	Courses approved by the state board of PT, the APTA, or the FSBPT (Physical Therapy Board of Wyoming 2022) (No courses found)	Indications/contraindications, potential risks, proper hygiene, proper use and disposal of needles, and appropriate selection of clients. (Physical Therapy Board of Wyoming 2022)	b) In person/ hands on	No	None	

Abbreviations: AAMT, American Academy of Manipulative Therapy (also known as the Spinal Manipulation Institute and the Dry Needling Institute); APTA, American Physical Therapy Association; ATI, Assessment Technologies Inc; CAPTE, Commission on Accreditation in Physical Therapy Examination; CIAO, Career Improvement and Advancement Opportunities; DNP, Dry Needling Pro; EMI, Evidence In Motion, Fran UDPT program, Franciscan University Doctor of Physical Therapy Program; FSBPT, Federation of State Boards of Physical Therapy; GMP Fitness, Gina M. Piazza Fitness; IACET, International Association for Continuing Education and Training; IAHE, International Alliance of Healthcare Educators; IAMT, Institute of Advanced Musculoskeletal Treatment; IAOM, International Academy of Orthopedic Medicine; IAS + BS, Intricate Art Spine and Body Solutions; ICE, Institute of Clinical Excellence; IDNI, Integrative Dry Needling Institute, IMIT, Institute of Manual and Integrative Therapy; PESTI Inc. Professional Education Systems Institute; Policy*, refers to any policy, standards or guidelines that are not legislated; PT Solutions, Physical Therapy Solutions; PT, Physical Therapy; PTA, Physical Therapy Assistant; RHPT + Ed., Revolution Human Physical Therapy and Education; S + F, Structure and Function; SMI, Spinal Manipulation Institute; TMR, Total Motion Release; TN-APTA, Tennessee American Physical Therapy Association; UNM Lend, University of New Mexico Leadership Education in Neurodevelopmental and Related Disabilities.

Board 2019; Vermont Secretary of State and Office of Professional Regulation 2024) (Table 1).

Specific course content for DN courses is required in 51% of regulatory authorities (Arizona State Board of Physical Therapy 2021; Department of Regulatory Agencies 2023; Delaware Examining Board of Physical Therapists and Athletic Trainers; Florida Department of Health and Board of Physical Therapy Practice 2021; State of Georgia Board of Physical Therapy 2025; Health Professional Licensing Office, Department of Public Health and Social Sciences; Illinois General Assembly 2026; Indiana Board of Physical Therapists 2019; Kansas Board of Healing Arts 2022; Maryland.Gov Division of State Documents n.d.; Mississippi State Board of Physical Therapy 2024a; New Mexico State Physical Therapy Board 2019; South Dakota Codified Laws 2024; Tennessee Department of State Division of Publication 2016; Utah State Legislature 2014; Physical Therapy Board of Wyoming 2022; Oklahoma Medical Board; Washington State Legislature 2023; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; Montana Board of Physical Therapy Examiners 2016; Nevada Physical Therapy Board 2019; Alaska Department of Commerce, Community, and Economic Development 2023a; Indiana Board of Physical Therapists 2024) (Table 1). Indications and contraindications to DN were the most commonly reported required course content, followed by sterile needle/infection control methods and adverse event/post-intervention care (Table 1). Other commonly reported content was anatomy review, equipment selection and biohazard waste management as well as proper needling technique (Table 1).

Of the 49% of regulatory authorities requiring a minimum duration of DN instruction, 24% require under 50 h of instruction (Arizona State Board of Physical Therapy 2021; Louisiana Physical Therapy Board 2021; New Mexico State Physical Therapy Board 2019; Physical Therapy Board of Wyoming 2022; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023), 48% require 50 or more but less than 100 h (Department of Regulatory Agencies 2023; Delaware Examining Board of Physical Therapists and Athletic Trainers; Florida Department of Health and Board of Physical Therapy Practice 2021; State of Georgia Board of Physical Therapy 2025; Indiana Board of Physical Therapists 2019; Mississippi State Board of Physical Therapy 2024a; New Jersey Board of Physical Therapy Examiners 2022; Tennessee Department of State Division of Publication 2016; North Carolina Board of Physical Therapy Examiners 2023a; Maryland Division of State Documents n.d.) and 29% require a minimum of or greater than 100 h (Health Professional Licensing Office, Department of Public Health and Social Sciences; Illinois General Assembly 2026; Bil 2020; Utah State Legislature 2014; Washington State Legislature 2023; Nevada Physical Therapy Board n.d.) (Table 1). Additionally, 81% require a minimum of in-person instructional hours (Arizona State Board of Physical Therapy 2021; Department of Regulatory Agencies 2023; Florida Department of Health and Board of Physical Therapy Practice 2021; Health Professional Licensing Office, Department of Public Health and Social Sciences; Illinois General Assembly 2026; Indiana Board of Physical Therapists 2019; Louisiana Physical Therapy Board 2021; Bil 2020; Mississippi State Board of Physical Therapy 2024a; New Jersey Board of Physical

Therapy Examiners 2022; Tennessee Department of State Division of Publication 2016; Utah State Legislature 2014; Physical Therapy Board of Wyoming 2022; Washington State Legislature 2023; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; North Carolina Board of Physical Therapy Examiners 2023a; Leahy 2023; Maryland Division of State Documents n.d.) (Table 1).

While 16% of the regulatory authorities have attestation forms for DN (Florida Board of Physical Therapy 2020; Georgia State Board and of Physical Therapy 2018; Idaho Physical Therapy Licensure Board 2025; Maryland Department of Health n.d.; South Dakota Board of Physical Therapy n.d.; State of Utah, Department of Commerce, Division of Occupational and Professional Licensing 2021), only 9% maintain a registration or rostering list of physical therapists allowed to practice DN (Mississippi State Board of Physical Therapy 2024a; Utah State Legislature 2014; Nevada Physical Therapy Board 2019; Department of Health and Board of Physical Therapy 2024). While Mississippi and Nevada do not have attestation forms, they do require that proof of course completion be submitted (Mississippi State Board of Physical Therapy 2024a; Nevada Physical Therapy Board 2019). Additionally, only one (2%) of the regulatory authorities requires continued competency specifically related to DN (New Jersey Board of Physical Therapy Examiners 2022) (Table 1).

3.1 | Comparison to Regulation Recommendations Documents

None of the regulatory authorities matched all 6 recommendations from the CPTBC's DN regulatory document and the HQCA's report on safe DN (Health Quality Council of Alberta; College of Physical Therapists of British Columbia 2020). Five percent (F. Legislature and Title 2023; New Jersey Board of Physical Therapy Examiners 2022) met 4 of the 6 recommendations, whereas 7% (Delaware Examining Board of Physical Therapists and Athletic Trainers; New Mexico State Physical Therapy Board 2019; Tennessee Department of State Division of Publication 2016) met 3 recommendations. Twenty-eight percent (Arizona State Board of Physical Therapy 2021; Health Professional Licensing Office, Department of Public Health and Social Sciences; Nebraska Department of Health and Human Services 2020; Utah State Legislature 2014; Virginia Law 2023; Washington State Legislature 2023; Little 2024a; Montana Board of Physical Therapy Examiners 2016; Nevada Physical Therapy Board 2019; North Carolina Board of Physical Therapy Examiners n.d.; Maryland Division of State Documents n.d.; Kansas Board of Healing Arts 2016) met 2 recommendations and 23% (Indiana Board of Physical Therapists 2019; Louisiana Physical Therapy Board 2021; Bil 2020; South Dakota Codified Laws 2024; Physical Therapy Board of Wyoming 2022; District of Columbia Municipal Regulations of Physical Therapy 2019; Ohio Occupational Therapy and Physical Therapy and Athletic Trainers Board 2023; Alaska Department of Commerce, Community, and Economic Development 2023a; Mississippi State Board of Physical Therapy 2024b; Oklahoma Medical Board 2021) met 1 recommendation (Table 2).

Forty percent of the regulatory authorities mandated that courses cover DN safety content (Arizona State Board of

TABLE 2 | State Board comparison to published DN regulatory recommendations.

State	Course evaluation for DN safety	Maintain a list of approved courses A (association) B (board)	Minimum number of years of practice prior to DN	Continuing competency for DN	Standardized reporting system for serious DN adverse events	Consolidated and complete DN information for patients to improve informed consent	Total compliance score/6
Alabama							0
Alaska	Yes (Alaska Department of Commerce, Community, and Economic Development 2023a)						1
American Samoa							0
Arizona	Yes (Arizona State Board of Physical Therapy 2021)	yes(A) (Arizona American Physical Therapy Association 2024)					2
Arkansas							0
California							0
Colorado							0
Connecticut							0
Delaware	Yes (Delaware Examining Board of Physical Therapists and Athletic trainers)	yes(B) (Delaware Examining Board of Physical Therapists and Athletic Trainers) (No courses currently listed)	2 years (Delaware Examining Board of Physical Therapists and Athletic trainers)				3
District of Columbia		yes(B) (District of Columbia Municipal Regulations of Physical Therapy 2019)					1
Florida	Yes (Florida Department of Health and Board of Physical Therapy Practice 2021)	yes(A) (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)	2 years (F. Legislature and Title 2023; Florida Department of Health and Board of Physical Therapy Practice 2021)		Yes (Florida Board of Physical Therapy 2020)		3

(Continues)

TABLE 2 | (Continued)

State	Course evaluation for DN safety	Maintain a list of approved courses A (association) B (board)	Minimum number of years of practice prior to DN	Continuing competency for DN	Standardized reporting system for serious DN adverse events	Consolidated and complete DN information for patients to improve informed consent	Total compliance score/6
Georgia							0
Guam	Yes (Health Professional Licensing Office, Department of Public Health and Social Sciences)	1 year (Health Professional Licensing Office, Department of Public Health and Social Sciences)					2
Hawaii							0
Idaho	Yes (Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023)	1 year (Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023)					2
Illinois							0
Indiana		yes(A) (Legal Information Institute 2019)					1
Iowa							0
Kansas	Yes (Kansas Board of Healing Arts 2022)	yes(B) (Kansas Board of Healing Arts 2022) (No courses currently listed)					2
Kentucky							0
Louisiana		yes(B) (Louisiana Physical Therapy Board 2021)					1
Maine							0
Maryland	Yes (Maryland Division of State Documents n.d.)	yes(A) (American Physical Therapy Association Maryland 2021)					2

(Continues)

TABLE 2 | (Continued)

State	Course evaluation for DN safety	Maintain a list of approved courses A (association) B (board)	Minimum number of years of practice prior to DN	Continuing competency for DN	Standardized reporting system for serious DN adverse events	Consolidated and complete DN information for patients to improve informed consent	Total compliance score/6
Massachusetts			2 years (Bil 2020)		Reports that any significant injury must be reported and documented with the Department of public Health, but does not have a standardized method of reporting DN adverse events.		2
Michigan							0
Minnesota							0
Mississippi		yes(B) (Mississippi State Board of Physical Therapy 2024a)					1
Missouri							0
Montana	Yes (Montana Board of Physical Therapy Examiners 2016)	yes(A) (Montana Board of Physical Therapy Examiners 2016)					2
Nebraska	Yes (Nebraska Department of Health and Human Services 2020)	Yes (B) (Nevada Physical Therapy Board 2024)					2
Nevada	Yes (Nevada Physical Therapy Board 2019)	yes (both) (Nevada Physical Therapy Board 2019)					2
New Hampshire							0
New Jersey	Yes (New Jersey Board of Physical Therapy Examiners 2022)	yes(B) (New Jersey Board of Physical Therapy Examiners 2022)	2 years (New Jersey Board of Physical Therapy Examiners 2022)	Yes 10 credits (New Jersey Board of Physical Therapy Examiners 2022)			4
New Mexico	Yes (New Mexico State Physical Therapy Board 2019)	yes(B) (New Mexico State Physical Therapy Board 2019)	6 months (New Mexico State Physical Therapy Board 2019)				3

(Continues)

TABLE 2 | (Continued)

State	Course evaluation for DN safety	Maintain a list of approved courses A (association) B (board)	Minimum number of years of practice prior to DN	Continuing competency for DN	Standardized reporting system for serious DN adverse events	Consolidated and complete DN information for patients to improve informed consent	Total compliance score/6
New York							0
North Carolina		yes(B) (North Carolina Board of Physical Therapy Examiners 2023a)	1 year (North Carolina Board of Physical Therapy Examiners 2023a)				2
North Dakota							0
Northern Mariana Islands							0
Ohio		yes(A) (Ohio Physical Therapy Association 2024)					1
Oklahoma		yes (A and B) (Oklahoma Medical Board)					1
Oregon							0
Pennsylvania							0
Puerto Rico							0
Rhode Island							0
South Carolina							0
South Dakota		yes(B) (South Dakota Codified Laws 2024)					1
Tennessee	Yes (Tennessee Department of State Division of Publication 2016)	yes (A or B) (Tennessee Department of State Division of Publication 2016)	1 year (Tennessee Department of State Division of Publication 2016)				3
Texas							0
Utah		yes(A) (Utah Office of Administrative Rules 2023) (cannot find courses)	2 years (Utah Office of Administrative Rules 2023)				2

(Continues)

TABLE 2 | (Continued)

State	Course evaluation for DN safety	Maintain a list of approved courses A (association) B (board)	Minimum number of years of practice prior to DN	Continuing competency for DN	Standardized reporting system for serious DN adverse events	Consolidated and complete DN information for patients to improve informed consent	Total compliance score/6
Vermont							0
Virginia	Yes (Virginia Law 2023)	yes (A or B) (Virginia Law 2023)					2
Virgin Islands							0
Washington	Yes (Washington State Legislature 2023)		1 year (Washington State Legislature 2023)				2
West Virginia							0
Wisconsin							0
Wyoming	Yes (Physical Therapy Board of Wyoming 2022)						1

Physical Therapy 2021; Delaware Examining Board of Physical Therapists and Athletic Trainers; Florida Department of Health and Board of Physical Therapy Practice 2021; Health Professional Licensing Office, Department of Public Health and Social Sciences; Kansas Board of Healing Arts 2022; Nebraska Department of Health and Human Services 2020; New Jersey Board of Physical Therapy Examiners 2022; New Mexico State Physical Therapy Board 2019; Tennessee Department of State Division of Publication 2016; Virginia Law 2023; Physical Therapy Board of Wyoming 2022; Washington State Legislature 2023; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; Montana Board of Physical Therapy Examiners 2016; Nevada Physical Therapy Board 2019; Alaska Board of Physical Therapists and Occupational Therapists 2023; Maryland Division of State Documents n.d.), however there was discrepancy in what was covered. For example, 21% were clear that courses must follow either the US Occupational Safety and Health Administration's Blood Born Pathogens Standards or the US Center for Disease Control and Prevention Standards (Arizona State Board of Physical Therapy 2021; Delaware Examining Board of Physical Therapists and Athletic Trainers; Health Professional Licensing Office, Department of Public Health and Social Sciences; Kansas Board of Healing Arts 2022; New Jersey Board of Physical Therapy Examiners 2022; Tennessee Department of State Division of Publication 2016; Washington State Legislature 2023; Nevada Physical Therapy Board 2019; Maryland Division of State Documents n.d.), whereas 19% did not mandate standards or simply stated that sterile methods or proper hygiene must be used (Florida Department of Health and Board of Physical Therapy Practice 2021; Nebraska Department of Health and Human Services 2020; New Mexico State Physical Therapy Board 2019; Virginia Law 2023; Physical Therapy Board of Wyoming 2022; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; Montana Board of Physical Therapy Examiners 2016; Alaska Board of Physical Therapists and Occupational Therapists 2023).

Although 53% of regulatory authorities indicate that courses must be approved either by the Board, the APTA, it's local chapter, the FSBPT or CAPT (Arizona State Board of Physical Therapy 2021; Delaware Examining Board of Physical Therapists and Athletic Trainers; F. Legislature and Title 2023; Kansas Board of Healing Arts 2022; Louisiana Physical Therapy Board 2021; Mississippi State Board of Physical Therapy 2024a; New Jersey Board of Physical Therapy Examiners 2022; New Mexico State Physical Therapy Board 2019; South Dakota Codified Laws 2024; Tennessee Department of State Division of Publication 2016; Utah Office of Administrative Rules 2023; Virginia Law 2023; Physical Therapy Board of Wyoming 2022; District of Columbia Municipal Regulations of Physical Therapy 2019; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023 Montana Board of Physical Therapy Examiners 2016; Nevada Physical Therapy Board 2019; North Carolina Board of Physical Therapy Examiners 2023a; Legal Information Institute 2019; Leahy 2023; Oklahoma Medical Board n.d.; Maryland Division of State Documents n.d.; Ohio Physical Therapy Association 2024; Virginia Law 2024), approved course lists could only be found for 33% of jurisdictions (Ohio Physical Therapy

Association 2024; Virginia Law 2024; Arizona American Physical Therapy Association 2024; District of Columbia Board of Physical Therapy 2020; Florida Physical Therapy Association 2004; I. American Physical Therapy Association and Indiana 2024; Louisiana Physical Therapy Board 2024; American Physical Therapy Association Maryland 2021; Mississippi State Board of Physical Therapy n.d.; American Physical Therapy Association Nebraska 2024; Nevada Physical Therapy Board 2024; New Jersey Board of Physical Therapy 2022; Oklahoma Medical Board 2022; Tennessee American Physical Therapy Association 2023) (Table 2).

There also exists heterogeneity in the requirement of DN prerequisite years of practice ranging from 6 months (2%) (New Mexico State Physical Therapy Board 2019), 1 year (12%) (Health Professional Licensing Office, Department of Public Health and Social Sciences; Tennessee Department of State Division of Publication 2016; Washington State Legislature 2023; Physical Therapy Licensure Board Division of Occupational And Professional Licenses 2023; North Carolina Board of Physical Therapy Examiners 2023b) or 2 years (9%) (Delaware Examining Board of Physical Therapists and Athletic Trainers; Florida Department of Health and Board of Physical Therapy Practice 2021; Bil 2020; Utah State Legislature 2014) (Table 2).

Currently, only 2% of jurisdictions require continued competency in DN(60), 2% have a standardized reporting system for serious DN adverse events (Florida Department of Health and Board of Physical Therapy Practice 2021) and 0% provide consolidated DN information for patients to assist with informed consent (Table 2).

4 | Discussion

As no reviews of DN regulations could be found for direct comparison, other restricted practices such as spinal manipulation were investigated and found to have similar jurisdictional regulatory practices (Dunning et al. 2015; American Physical Therapy Association 2013; Tennessee American Physical Therapy Association 2016). With a longer history in physical therapy practice (Paris 2000), manipulation has been established as part of entry level education and standard of practice for physical therapists in the United States (Matthews et al. 2021; Bialosky et al. 2012; American Physical Therapy Association 2001). Although both practices share similar jurisdictional regulation, due to its more recent development within the profession, DN appears to have less consistent regulation compared to manipulatory practices. Similar to the controversy over appropriation of practices that manipulation by physical therapists has raised (and continues to) with the chiropractic profession (Dunning et al. 2015), the use of filiform needles by physical therapists has raised similar concerns with the acupuncture profession (Fan et al. 2017, 2016, 2020). This may be one reason why some States have not adopted DN within the scope of physical therapists (Maritato 2024).

Although there is no national practice act governing DN in the United States, a set of DN competency guidelines has been developed by the FSBPT (Caramagno et al. 2015). These competencies, if covered in mandated course content, could help

inform regulation. Regulatory authorities could cover the 14% of DN competencies identified by the FSBPT as remaining after formal physical therapy education (Table 3) into recommendations for the regulation of DN simply by changing the wording of the competencies. For example, competency number 11, manage needle removal complications (Caramagno et al. 2015), could be re-phrased as “must demonstrate knowledge of how to manage needle removal complications.” Ensuring that these statements are reflected in DN regulation would assist DN course providers in ensuring that all necessary competencies (as per the FSBPT Table 3) are taught in their courses. Not all competencies are reflected in any jurisdictional DN regulation or policy, leaving course content mostly up to the discretion of the provider.

Currently, 22 jurisdictions have mandated DN course content. While 23 regulatory authorities have a process for approving DN courses, only 14 of these have mandated course content, whereas 9 do not. The remaining 6 jurisdictions having regulated course content do not approve courses. Additionally, mandated course content for DN training varies between jurisdictions and is not necessarily comprehensive enough to ensure complete coverage of all DN competencies.

Providing clear definitions of competency and safety for course content is a step towards clear guidance; however, the course content currently recommended is often vaguely defined, leaving much interpretation to those providing the course instruction. For example, most authorities mandating safety content indicated that pertinent anatomy must be covered (Arizona State Board of Physical Therapy 2021; Delaware Examining Board of Physical Therapists and Athletic Trainers; Kansas Board of Healing Arts 2022; Nebraska Department of Health and Human Services 2020; New Jersey Board of Physical Therapy Examiners 2022; Washington State Legislature 2023; Nevada Physical Therapy Board 2019) (Table 2). However, there is no specification of what is considered pertinent anatomy and of how comprehensive instruction is ensured. The duration of DN instruction to achieve competency is also contentious, with critics of physical therapists practicing DN often citing course brevity as a safety concern (Zhou et al. 2015; Fan et al. 2016). The FSBPT has addressed this concern by clearly identifying that only 14% of DN competencies need to be addressed in post-graduate educational courses beyond the content already covered in entry-to physical therapy training, thus justifying course brevity. Still, there is no consensus on the minimum duration required to cover this remaining 14% of required DN competencies, nor how much of the DN education should be practical, hands-on education. DN Course duration recommendations derived from other national DN guidelines range from 12 to 80 h (International Acupuncture Association of Physical Therapists; Guidelines for Dry Needling Practice 2012; Australian Society of Acupuncture Physiotherapists 2016; Physiotherapy Acupuncture Association of New Zealand 2023; Association Suisse de Dry Needling 2022; South African Society of Physiotherapy 2017) and the CPTBC's recommendation of 100 h course duration is based on the acupuncture profession references (Tanchak 2020). Ultimately, course duration should be long enough to cover the remaining DN competencies not covered in entry to practice programs, yet brief enough to avoid unnecessary burdening of teaching staff and trainees.

TABLE 3 | DN competencies obtained through Dry Needling courses.

Category	Dry needling specific knowledge
Anatomy and physiotherapy	1. Surface anatomy as it relates to underlying tissues, organs, and other structures, including variations in form, proportion, and anatomical landmarks emergency preparedness and response
Emergency preparedness and/or response	1. Procedures related to secondary physiological effects or complications associated with dry needling (e.g., shock, vasovagal) 2. Procedures related to secondary emotional effects or complications associated with dry needling (e.g., claustrophobia, anxiety, agitation) 3. Standards for needle handling (e.g., hand hygiene, application of single-use needles) safety and protection
Safety and protection	1. Factors influencing safety and injury prevention 2. Personal protection procedures and techniques as related to dry needling (e.g., positioning self to access treatment area, use of personal protective equipment) 3. Theoretical basis for dry needling (e.g., applications for rehabilitation, health promotion, fitness and wellness, performance) 4. Theoretical basis for combining dry needling with other interventions 5. Secondary effects or complications associated with dry needling on other systems (e.g., gastrointestinal, cardiovascular/pulmonary, musculoskeletal) 6. Theoretical basis of pain sciences, including anatomy, physiology, pathophysiology, and relation to body structures and function 7. Contraindications and precautions related to dry needling (e.g., age, allergies, diseases/conditions) 8. Palpation techniques as related to dry needling 9. Needle insertion techniques 10. Needle manipulation techniques 11. Physiological responses to dry needling 12. Solid filament needles (e.g., physical characteristics)
Physical therapy skills and Abilities	1. The psychomotor skills needed to handle needles and palpate tissues require specialized training

Some jurisdictions require prerequisite clinical experience prior to practicing advanced techniques such as DN. This is supported by evidence-based practice models suggesting that advanced practices need to factor clinical experience with patient factors as well as best research evidence to ensure proper decision making (Sackett 2000). Arguments exist in favor of a minimum clinical practice experience prior to learning advanced techniques (Leonardsen 2023; Delavari et al. 2022). Clinical practice likely contributes to improved palpation skills (Anders et al. 2010), refined clinical decision making (Banning 2008; Zhao et al. 2025) and experience managing patient responses to treatment (Zhao et al. 2025). However, it may be argued that due to post-graduation knowledge decay (Tunney 2003; Sundarya et al. 2019; Royal et al. 2016; Liu and Phelps 2020), recent graduates may have superior anatomy knowledge recall, which may improve DN accuracy despite their lack of clinical experience. Currently, it is unclear whether having up-to-date anatomy knowledge adequately compensates for lack of experience and there is no agreed upon amount of experience that equates to competency.

National DN guidelines have recommend using continued competency, a measure enacted by regulatory bodies to promote a minimum level of professional knowledge. Multiple national guidelines recommended that DN continued competency entails

a minimum of DN (or acupuncture) related education hours every 2–3 years, including a practical component (International Acupuncture Association of Physical Therapists; Guidelines for Dry Needling Practice 2012; Australian Society of Acupuncture Physiotherapists 2016; South African Society of Dry Needling 2017). Although continuing competency has been recommended to maintain safe practice of DN (Health Quality Council of Alberta; College of Physical Therapists of British Columbia 2020), currently only one jurisdiction mandates this (New Jersey Board of Physical Therapy Examiners 2022). Although few jurisdictions employ a DN registration or rostering system, such a system would not only reflect the jurisdictions approval of a practice but also provide the public a resource to identify practitioners who have been certified to provide this service. However, caution is needed with a registration system as being rostered to practice DN does not necessarily equate to competency. Zhou et al. (2015) notes that “besides the establishment of a regulatory body to accredit DN courses, so that standards are set to guarantee patient safety and optimal outcomes, needling practice per se and the use of DN to treat patients should require formal and comprehensive education and training” (Zhou et al. 2015). However, there exists much debate as to what constitutes physical therapy DN competency (Zhou et al. 2015; Ijaz and Boon 2019; Fan et al. 2020). Current debate includes sufficient training hours (Ijaz and

Boon 2019; Fan et al. 2020), course standards (Zhou et al. 2015; Fan et al. 2020), treatment rationale, needling techniques and training requirements (Health Quality Council of Alberta) as well as evaluation methods (Zhou et al. 2015). The FSBPT has addressed this debate by outlining the competencies needed for physical therapists to practice DN in the United States. Specifically, it states that 86% of these competencies are met in entry-to-practice education for physical therapists in the United States of America. However, to what extent the jurisdictions regulating the practice of DN ensure that course providers cover the remaining 14% of these competencies remain unclear. Comparisons of the FSBPT's report to two Canadian documents making DN regulation recommendations were difficult because the FSBPT identifies specific practitioner competencies, but does not make regulation recommendations. However, the education tasks (#16, #17, #18) (Caramagno et al. 2015) identified by the FSBPT (Caramagno et al. 2015) would satisfy the recommendation by the Canadian documents to consolidate DN information for patients to improve informed consent. In addition, if jurisdictional regulatory authorities ensured that all of the safety knowledge and tasks identified by the FSBPT were covered in DN course content, then the recommendation that regulators review the safety content of courses made by the Canadian documents would be fulfilled. No further comparisons could be made. Additionally, a separate literature review on international and professional association DN guidelines and Australian DN course providers (Firth et al. 2020a, 2020b) was informative and had overlap with both the FSBPT report as well as the Canadian documents; however, it did not comment on regulations.

To summarize, 71% of US jurisdictions and 100% of Canadian jurisdictions allow physical therapists to practice DN. Of those jurisdictions allowing DN, US regulation of DN is accomplished in 54% cases by legislation, 5% cases by policy, 12% cases by both and 34% cases have no regulation. Comparatively, regulation in Canada is accomplished 15% by legislation, 8% by policy, 54% by both and 15% by no regulation. Pre-requisites are needed in 27% of US jurisdictions and in 23% of Canadian jurisdictions. Course approvals are noted in 59% of US jurisdictions and in 23% of Canadian jurisdictions. Specific required course content is listed in 54% of US jurisdictions and in 69% of Canadian jurisdictions. Minimum course duration is listed in 51% of US jurisdictions with 24% of this being less than 50 h, 48% between 50 and 100 h and 29% over 100 h duration. In Canada, 23% of jurisdictions mandate minimum course duration, with 33% being between 50 and 100 h and 67% greater than or equal to 100 h. Continuing competency is mandated in 2% US jurisdictions and none in Canada. Finally, a rostering or registration system for DN is in place in 10% of US jurisdictions and in 69% of Canadian jurisdictions.

4.1 | Limitations

We identified DN regulation from publicly available information and by contacting each jurisdiction regulatory authority individually and are therefore reliant on the availability of public content and responses. As 2 States failed to respond, 13 responded but did not provide any additional information beyond what was already publicly available and four refused

based on legal justifications, there may be information missing from this environmental scan. Still, this scan outlines that in some jurisdictions it may be difficult for physical therapists to know if and how they can practice DN. Notably, this scan represents a snapshot up to October 2024 and is subject to change. As a comparison of the FSBPT's analysis of DN competencies was not relevant to compare to our Environmental Scan on US DN regulatory practices, our extraction table review was related to two Canadian documents making regulatory recommendations (Health Quality Council of Alberta; College of Physical Therapists of British Columbia 2020). Canada was chosen as a regulatory comparator as the structure of DN practice and DN educators have significant overlap (Ijaz and Boon 2019). Further regulation gaps may have been identified by considering other national guidelines (Guidelines for Dry Needling Practice 2012; Australian Society of Acupuncture Physiotherapists 2016; Physiotherapy Acupuncture Association of New Zealand 2023; Association Suisse de Dry Needling 2022; South African Society of Physiotherapy 2017; Fung et al. 2025). Two tables were published in our Canadian environmental scan (Crocker and Parent, [forthcoming](#)) comparing seven relevant national DN guidelines located by using references found in the available literature as well as conducting a specific search for international and national guidelines using the following syntax: ((international OR national) AND ((dry needling) OR (intramuscular stimulation)) AND (guidelines OR standards OR policy)) in PubMed and EMBASE as well as with a Google search engine. The World Health Organization's acupuncture guidelines appeared in both searches; however, they were not incorporated into these comparison tables as they did not provide any guidance specifically to the practice of DN (Geneva: World Health Organization 2020). Similarly, our objective limited the extracted information specifically to physical therapy DN regulations even if similar or different to their practice of acupuncture as defined by their jurisdictional regulation.

5 | Conclusion

The present environmental scan, which documents important heterogeneity in the regulation of DN, should not be interpreted as criticism of DN regulations implemented by the US jurisdictional regulatory authority of physical therapy. Each regulatory authority has its own regulatory process and as DN is fast evolving, many boards may still be adjusting to this new practice.

Similar to our comparison of Canadian regulatory jurisdictions (Crocker and Parent, [forthcoming](#)), the majority of US regulatory jurisdictions fall short of the recommendations put forth by the CPTBC and HQCA documents. Of the 43 regulatory US jurisdictions identified allowing DN by physical therapists, 5% met 4 of the 6 recommendations, 7% met 3, 28% met 2 and 23% met 1 recommendation. However, the FSBPT has clearly stated the recommended competencies needed for physical therapists to practice DN safely and effectively. These competencies could be reflected more clearly in the regulations put forth by the jurisdictional regulatory authorities of physical therapy to ensure that their practitioners are held to high standards. Unfortunately, at this point there has not been empirical evidence that implementing regulation leads to improved safety.

5.1 | Implications of Physiotherapy Practice

By identifying differences and gaps in physical therapy DN regulation across the United States, we provide a document which regulatory authorities may use to address these differences and gaps if deemed necessary. By comparing regulatory practices to two Canadian documents, we highlight recommendations that may be adopted to help improve regulation. Finally, by highlighting the FSBPT's competency analysis as a potential guiding document for regulatory authorities to help with DN regulation, these authorities have an opportunity to ensure their course providers comply with these standards.

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Ethics Statement

Ethics Board review and approval was not needed for this environmental scan as only data were available to the public on the website or from each State Board staff.

Consent

No participants were recruited. The information summarized in this environmental scan is fully available to the public from websites and State Board staff.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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