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Sarah A. Robertson
Porltand State University

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Sarah Robertson

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Ralph Magnuson, DPT

Portland State University

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Dry needling is a treatment modality performed by a certified, licensed, physical therapist in the clinical setting. In this form of treatment a thin filiform needle into a trigger point within a muscle to help ease the painful constriction of the muscle. Dry needling differs from other similar treatment modalities (such as acupuncture or wet needling) in that the needle does not have any type of medication applied to it. In clinical trials Dry Needling has shown promising results, and has been proven to result in improved patient outcomes (Sánchez-Infante, et al., 2021). However as of 2021, Dry Needling is legal in only thirty-seven states in the U.S., with five states prohibiting physical therapists from performing the treatment modality, and eight states being silent in regards to it (APTA, 2021).

The purpose of my thesis is to investigate the current status of the practice of dry needling in the field of physical therapy. I have accomplished this by looking into current research on the treatment, and the patient outcomes that were observed. After that I determined the legal status of Dry Needling in each state, and why states have chosen to either prohibit, or allow the practice, and their rationale behind their decisions. Through this I present an accurate summary of the current state of Dry Needling in the United States as of 2022.

Methodology

Finding Relevant Scholarship

To find articles that are related to my topic, and that have been peer reviewed by experts within the field, I utilized physical therapy databases that screened and validated any studies that they published on their site. Examples of these types of databases are the American Physical Therapy Association's Database, and the Physiotherapy Evidence Database (PEDro). Through utilizing these websites I was able to sift through articles with more ease, and not potentially include articles that were founded on biased data, or faulty research in my thesis.

Determining State Stances

To determine the current laws and regulations that each state holds in regards to the practice of dry needling I looked at the current handbook of regulations that each state's Board of Physical Therapy has published for 2022. I then noted which states either prohibit, or allow the treatment, and determine if there were any common phrases, or rationale behind any of the decisions that they have made in regards to the practice. I also looked at the National Board of Physical Therapy's rules and regulations on Dry Needling to gain a better understanding of why they chose to allow the states to decide whether or not to allow the practice to occur within their bounds.

Compiling Data

To successfully compile, and organize data on the matter I utilized studies or systematic reviews in which the data was collected in regards to generalized forms of musculoskeletal pain, and were not specified for one specific condition (such as Ehlers-Danlos Syndrome, Diabetes

Mellitus, Sickle Cell Anemia, etc), or were a case study in which only one patient's treatment outcomes were observed. I then found general conclusions that were congruent from these studies, or systematic reviews, and stated them within my thesis.

Current Research on Dry Needling

Current Amount of Research Available on Dry Needling

In comparison to other treatment modalities (such as electrical stimulation, TENS units, ultrasound, etc) there have currently not been as many studies on the treatment modality of Dry Needling. This is in large part due to the fact that dry needling is relatively new compared to the field of physical therapy when compared to these other treatment modalities. As stated prior, to properly sift through research articles on the subject I utilized reputable physical therapy databases that allowed me to note the validity of each of the studies I looked into, and whether or not experts in the field believe that the data is unbiased.

Consensus of Studies on Dry Needling and Pain

The general consensus derived from the studies that were analyzed is that Dry Needling generally decreased pain, especially when compared to either placebo treatments, or no treatment. In one systematic review on Dry Needling it was also found that Dry Needling helped to improve side-bending range of motion, while decreasing pain (Cagnie, et al., 2015). All studies agreed that Dry Needling was most effective when used in conjunction with other treatment modalities (such as manual therapy, therapeutic exercises, etc). In the studies that considered cases of both chronic and acute pain it was found that while Dry Needling was effective at helping to manage both, it was found to be more effective in cases involving acute pain.

Safety of Dry Needling

In a research study on the adverse effects of Dry Needling within the clinical setting 20,464 Dry Needling Sessions that were conducted by 420 physical therapists were analyzed, and the adverse effects/events (both minor and major) were noted and tallied for all of the sessions. Minor adverse effects were defined as short-term, mild, non-serious events that occurred as a result of the treatment, but that posed no limitations to a patient's range of motion, or overall health and wellbeing. Examples of events or effects that would fall under this category include: bruising, bleeding, and slight discomfort or pain during or after Dry Needling treatment. Major adverse effects were defined as medium to long-term, moderate to severe events that might require further clinical attention and whose effects would last days or weeks. Examples of events or effects that would fall under this category include: infection, nerve injury, pneumothorax, or excessive symptom exacerbation.

The results of this study found that of the 20,464, 36.7% had a minor adverse event, and 0.1% had a major adverse event. The most common minor adverse events that were reported were bleeding, bruising, and pain during treatment; all of which are typical, expected responses to a needle stick. Of the major adverse events that occurred, none were life-threatening in nature, and all were able to be managed by the physical therapist (Boyce, et al., 2020).

From this study it can be concluded that Dry Needling is as safe as other current treatment modalities performed within the clinic, and that the minor adverse effects of the treatment are typical, expected responses to a needle stick. Through this research it can also be determined that the instance of major, adverse events occurring is very low, and that when those events happen they are never life-threatening in nature. Therefore by allowing the treatment

modality of Dry Needling in the physical therapy clinic, there are no further risks being posed to any of the patients due to the general nature of the treatment.

General Risk of Bias (ROB) Within Studies

Within the systematic reviews on Dry Needling two common Risks of Bias (ROBs) were noted, the first was that most treatment trials were only conducted and analyzed over a relatively short time period (three to six months), and the second was that many patients realized that they were receiving dry needling instead of a placebo or no treatment. Either of these factors could have influenced the data, and made dry needling appear to either be more effective or less effective than it actually was. When continuing to conduct research future studies should make sure to either consider these factors, or find a way to actively counter their effects.

Legislation on Dry Needling

Three Stances on Dry Needling

There are three stances that states can take on dry needling. The first is that the state can permit physical therapists within their jurisdiction to perform dry needling in the clinical setting. In this case physical therapists that are certified in the modality and hold a current licensure in the state are allowed to dry needle patients within their care. The second stance that states can take is to prohibit dry needling within their bounds, meaning that physical therapists who practice in that state are not allowed to dry needle patients (regardless of whether or not they are certified in the treatment modality). Finally, the third stance states can take is to remain silent on the issue. In "silent" states physical therapists are not allowed to dry needle their patients, and the state does not actively discuss the treatment within their legislation. They tend to follow the guideline set forth by the APTA; whatever the APTA allows or prohibits, they will allow or prohibit in regards to the issue.

States That Allow Dry Needling

There are currently thirty-seven states that allow dry needling (including the province of Washington, D.C.). These states are as follows: Alabama, Alaska, Arizona, Arkansa, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington D.C., West Virginia, and Wyoming.

States That Prohibit Dry Needling

There are currently five states that prohibit physical therapists from dry needling. These states are as follows: California, Hawaii, New York, Oregon, and Washington.

States That Are Silent in Regards to Dry Needling

There are currently eight states that are silent on the topic of dry needling. These states are as follows: Connecticut, Massachusetts, Michigan, Minnesota, Missouri, Oklahoma, Pennsylvania, and Wisconsin.

Why States Choose to Allow Dry Needling

In states that allow Dry Needling, the general consensus is that allowing physical therapists to perform dry needling will help to improve patient outcomes. This is shown by evidence on the modality, showing that Dry Needling is beneficial when performed in conjunction with other physical therapy interventions (such as therapeutic exercises, manual therapy, etc). They do this in the hopes of being on the cutting edge of medicine, so that they can provide their patients with the best care possible.

Why States Choose to Prohibit Dry Needling

In states that prohibit Dry Needling, the general consensus is that Dry Needling is outside of the physical therapist's scope of practice, and results in them performing a treatment modality reserved for the field of Acupuncture. The states qualify that Dry Needling is not a type of physical therapy intervention that they would allow their providers to administer. However these

states do recognize that there is a higher level of certification and licensure that is necessary to perform the modality on patients in the clinical setting.

A second reason that states choose to prohibit Dry Needling is that they recognize it as an invasive technique, due to the fact that the physical therapist is puncturing the patient's skin. This makes it different from other physical therapy interventions that utilize tools or machinery (such as ultrasound, electrical stimulation, etc), as the therapist is directly working on internal tissues of the body with the needle. They believe that the invasive nature of this technique makes it one that should not be performed in the clinical setting, and that only certain types of medical providers (such as nurses, medical doctors, acupuncturists, etc) should be allowed to utilize either the dry or wet needling modalities within the clinical setting.

Finally, the third reason that states prohibit Dry Needling within their bounds is that they do not believe that the currently available education for the modality is adequate. Dry Needling is a fairly new technique (developed within the past twenty years), as a result of this the education that is available for physical therapists some states believe is not up to par. They also think that the guidelines and regulations that are in place for this education have not had enough time to fully develop.

Why States Are Silent in Regards to Dry Needling

The states that have chosen to remain silent on Dry Needling tend to do so to remain as neutral as possible on the treatment modality. This allows these states the benefit of being able to not have to make a decision outright on the treatment modality, and to leave the legislation establishment to the larger governing body of the APTA.

Licensing Requirements in States That Allow Dry Needling

To make sure that all physical therapists who utilize Dry Needling as a treatment modality are of the same caliber, and can perform the treatment intervention safely, the states have strict licensing protocols in place. The first is that all physical therapists who decide to begin learning how to dry needle must have at least two years of experience as a practicing, licensed physical therapist in the state that they will be obtaining their additional certification in. This the states do to give the provider time to become familiar with the already established rules and regulations for general practice within the state, as well as to gain experience working with patients.

For therapists that meet this requirement, the next step is to take at least fifty hours of continuing education at an accredited entity that aligns with the state's guidelines for continuing education courses. These Dry Needling courses must cover the following topics: Theory of Dry Needling, Safe Needle Handling and Selection, Indications and Contraindications for Dry Needling, Psychomotor Skills needed to perform Dry Needling, and Post-Intervention Care.

Following completion of the course the physical therapist is then required to fulfill a requirement of twenty-five hours of dry needling practice, where they will be supervised by a licensed physical therapist who has at least one year of dry needling experience, and a current certification in dry needling. Once they have completed these hours, and are deemed competent by the physical therapists they trained under in the course and during the practice hours, they may apply for certification with the board of physical therapy in their state.

Conclusion

Dry needling is a relatively new treatment modality that is being implemented within the field of physical therapy. While initial results from studies on the modality have shown decreased levels of pain in patients, as well as increased range of motion. When implemented in conjunction with other treatment modalities (such as therapeutic exercise and manual therapy) the patient outcomes were shown to be further improved. In studies that considered both chronic and acute pain, it was determined that dry needling was an effective intervention in both cases, but was more effective for the management of acute pain. Through determining the risk of adverse effects from the treatment, the results showed that Dry Needling was as safe as other treatment modalities that are currently implemented within the practice of Physical Therapy. However it is important to recognize that going forward any further studies on the treatment modality should focus on longer term outcomes, as well as finding new ways to remove various risks of biases that are present within the currently available studies.

As of the publication of this thesis, there are thirty-seven states that allow the practice of dry needling, five states that prohibit the treatment modality within their bounds, and eight states that are silent in regards to Dry Needling. At this point the national, governing institution on the field of physical therapy within the United States, the APTA, has put the decision of legislating and allowing or prohibiting Dry Needling to the states.

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