

ABSTRACT

Beyond the Needle:

A Technical, Cultural, and Rhetorical Study of Acupuncture Versus Dry Needling

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This thesis analyzes the ongoing debate over the relationship between acupuncture and dry needling. This thesis first discusses the origins and techniques of acupuncture, followed by the origins and techniques associated with dry needling. I draw together the similarities between the two practices to argue that dry needling is in fact a subcategory of acupuncture, despite the American Physical Therapy Association's insistence that dry needling is not acupuncture. Next, I assess the clinical trials of both acupuncture and dry needling, which indicate that dry needling carries greater risk and less beneficial long-term health outcomes than acupuncture. While the available research suggests the efficacy of acupuncture over dry needling, I recommend further study of both practices in terms of their potential short-term and long-term efficacy. Last, I offer three possibilities for the apparent differences between the outcomes of the two practices: Americans' fear of communism, an unwillingness to reform Western education, and cross-cultural differences between the values undergirding the practices. This thesis advances the ongoing debate over the nature of dry needling vis-à-vis acupuncture by clarifying important cultural and rhetorical factors that may explain the outcome differential between two practices that, at face value, seem nearly equivalent.

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BEYOND THE NEEDLE

A Technical, Cultural, and Rhetorical Study of Acupuncture Versus Dry Needling

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INTRODUCTION

Needling Out the Issue

As dry needling has gained popularity, the debate between physical therapists and acupuncturists over whether to categorize dry needling as a subset of acupuncture has grown quite contentious.¹ Acupuncturists claim that dry needling, as it is a needling practice with clinical techniques close to that of acupuncture, is a subcategory of acupuncture.² The American Physical Therapy Association, on the other hand, claims that the foundation of dry needling is Western biomedicine, and thus not a type of acupuncture.³ In this thesis, I explain this ongoing debate through a deep look into both practices and a comparison of the techniques of both practices. I then give three potential underlying reasons for the unwillingness of the American Physical Therapy Association to define dry needling as acupuncture, providing a lens through which to look at the differences in clinical outcomes for both practices.

To frame the debate of acupuncture versus dry needling, I begin by delving into the origins and clinical techniques of acupuncture and dry needling. As an ancient practice, stemming from around 100 BC, the changing culture of China has shaped

¹ Kehua Zhou, Yan Ma, and Michael S Brogan, "Dry Needling versus Acupuncture: The Ongoing Debate," *Acupuncture in Medicine* 33, no. 6 (December 2015): 485–90, <https://doi.org/10.1136/acupmed-2015-010911>.

² Heming Zhu and Heidi Most, "Dry Needling Is One Type of Acupuncture," *Medical Acupuncture* 28, no. 4 (August 1, 2016): 184–93, <https://doi.org/10.1089/acu.2016.1187>.

³ Zhou, Ma, and Brogan, "Dry Needling versus Acupuncture."

modern day acupuncture through Taoist thought and, eventually, modern biomedicine.⁴ In Chapter 1, I examine Taoist religious and philosophical influences on acupuncture, including various techniques, as well, including *ah shi* point acupuncture, which most closely resembles dry needling.

In Chapter 2, I argue that while “dry needling” may technically emerge from Western biomedicine, specifically the use of injections for pain management, the technique is better understood as acupuncture translated into the biomedicine model.⁵ The chapter begins with a discussion of the ostensible origins of trigger point dry needling. It then turns to the clinical techniques associated with trigger point dry needling before concluding with a comparative assessment of acupuncture and dry needling.

Though the origins of both practices seem to differ slightly, the technical practice of both *ah shi* point acupuncture and trigger point dry needling are very similar. Both practices use the same tools, methods, similar needling duration, and have similar clinical uses.

Chapter 3 goes into more detail regarding these similarities, showing that regarding technique, dry needling and acupuncture are very similar, but the former is perhaps best understood as a subcategory of the latter. Chapter 3 also assesses clinical trials for both acupuncture and dry needling, looking for differences in clinical outcomes

⁴ David Ramey and Paul D. Buell, “A True History of Acupuncture,” *Focus on Alternative and Complementary Therapies* 9, no. 4 (2004): 269–73, <https://doi.org/10.1211/fact.2004.00244>. Olga M Trushina, “The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices,” *J. Pharm. Sci.* 10 (2018): 3.

⁵ David Legge, “A History of Dry Needling,” *Journal of Musculoskeletal Pain* 22, no. 3 (September 1, 2014): 301–7, <https://doi.org/10.3109/10582452.2014.883041>. Whether dry needling *actually* originates within Western biomedicine is a different matter.

between the two practices. Unfortunately, the sparsity of clinical evidence for dry needling, the confounding practice of using acupuncture trials as though they were dry needling, and the conflicting evidence of efficacy for acupuncture can neither ultimately confirm nor refute my hypothesis. More clinical trials are necessary in order to learn more about the efficacy of these practices, as well as the rhetorical and clinical implications of the Westernization of an Eastern practice.

The similarities between both practices—as well as the inclusion of acupuncture data in dry needling clinical trials—strongly suggest that dry needling and acupuncture are cut from the same cloth. Why then is the American Physical Therapy Association unwilling to define dry needling as a type of acupuncture?⁶ I propose three options, which include the American fear of communism ingrained in medicine, the unwillingness for the West to change their educational standards to those of the East, and the cross-cultural value differences between the West and the East. While teasing apart these three options may be difficult, as it is more likely that these variables all work together, it seems most likely that cross-cultural value differences have the biggest fundamental impact on the practice of dry needling vis-à-vis acupuncture. A discussion of Eastern and Western values in Chapter 4 leads me to argue that the shift in cultural values from the East to the West profoundly changes dry needling and leads to worse health outcomes for patients. This analysis serves as a continuation of the acupuncture versus dry needling

⁶ James Dunning et al., “Dry Needling: A Literature Review with Implications for Clinical Practice Guidelines,” *Physical Therapy Reviews* 19, no. 4 (August 1, 2014): 252–65, <https://doi.org/10.1179/108331913X13844245102034>.

debate, by focusing attention on the need for further investigation into the role value differences may play in the different efficacies of these seemingly similar techniques.

I now turn to an analysis of the origins and techniques of acupuncture to later compare to dry needling.

CHAPTER 1

The Tip of the Needle: The Ancient Practice of Acupuncture

Introduction

As an ancient practice originating in pre-common era China, acupuncture developed alongside Chinese culture, beliefs, and religions.¹ In its early forms, practitioners used acupuncture to treat what they believed were ailments caused by demonic influence.² Many believed that demons would invade individuals and produce “swelling.”³ These sites, and the demons within them, were thought to have caused the disease ailing the individual, and the insertion of needles was used to kill or expel the demons.⁴ However, as the Chinese culture and beliefs began to shift, the art of acupuncture took on a meaning in Taoist practice.

¹ A. White, “A Brief History of Acupuncture,” *Rheumatology* 43, no. 5 (January 27, 2004): 662–63, <https://doi.org/10.1093/rheumatology/keg005>.

² The origin of acupuncture is contested often, as some believe that acupuncture is many thousands of years old while some believe it surfaced in 2500 BCE. Determining the earliest forms of acupuncture depend on the historical text being considered and on the definition of needling. For more information, see Ramey and Buell, “A True History of Acupuncture.” In Ancient Chinese tradition, demons are spirits or souls of those who have died, such as unhappy ancestors, who could cause sickness if proper rituals and sacrifices are not done. For more information, see: “The Six Evils and Five Phases - Optimal Healing: A Guide to Traditional Chinese Medicine, 1st Edition,” accessed March 29, 2021, <https://doctorlib.info/health/guide-traditional-chinese-medicine/4.html>, Amy Olberding and P. J. Ivanhoe, eds., *Mortality in Traditional Chinese Thought*, Suny Series in Chinese Philosophy and Culture (Albany: State University of New York Press, 2011). See also, Ramey and Buell, “A True History of Acupuncture.”

³ Ramey and Buell, “A True History of Acupuncture.”

⁴ Ramey and Buell.

The Origins of Acupuncture

In order to understand the spiritual role of acupuncture, it is imperative to understand the religion and philosophy of Taoism.

Taoism: Philosophy & Religion

Early in the common era, Taoism spread about China, influencing individuals and practices alike. Taoism's emphasis on harmony and balance prompted a change in traditional Chinese medicine, and acupuncture in particular, through the Taoist view of the body and its function.⁵ In this view, the body and its organs serve as different pathways for "Qi" to circulate around the body.⁶ Qi, being one of the three main components of the cosmos, is symbolized as breath in the human and is important for proper balance within the body.⁷ Though "jing," or essence, and "shen," or spirit, are also main components of the cosmos, Qi is the focus of Traditional Chinese Medicine since Qi is believed to bring life into the body.⁸ As the life-giving substance, Taoists believe that Qi must circulate throughout the body in the correct flow.⁹ Ordered and balanced Qi

⁵ Trushina, "The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices."

⁶ Trushina.

⁷ Fabrizio Pregadio, "Religious Daoism," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Fall 2020 (Metaphysics Research Lab, Stanford University, 2020), <https://plato.stanford.edu/archives/fall2020/entries/daoism-religion/>.

⁸ Pregadio.

⁹ Trushina, "The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices."

moving throughout one's body allows the body good health and proper function without disease. When disease enters the body, the disease acts as blocks or barriers to the Qi pathways, causing a slowdown of the movement of Qi.¹⁰ This blockage causes typical symptoms of illness or ailments and inhibits the proper functioning of the body. In Taoism, it is important to have proper functioning of the body in order to use your body as an instrument for returning to the Tao,¹¹ as the Tao is considered the primordial substance from which everything is created and the goal to which one should strive to return to.¹² Traditional Chinese Medicine, and acupuncture specifically, removes the blockages in the Qi pathways and restores proper circulation of Qi throughout the body.¹³ Thus, acupuncture is used as a means to restore health and balance to an individual so that the individual can continue their movement towards the Tao.¹⁴

The ideology of Qi movement within the body also reflects the movement of Yin and Yang throughout the body, creating deeper ties between acupuncture and balance.¹⁵ In Taoist philosophy, Yin and Yang are paramount to balance within the body and within the cosmos. On the macrocosmic scale, Yin and Yang are described as, "The natural

¹⁰ Trushina.

¹¹ Pregadio, "Religious Daoism."

¹² Trushina, "The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices."

¹³ Trushina.

¹⁴ "The Tao" translates to "the way." It is central to the Taoist thought, as it guides the individual down the correct path. For more information, see Pregadio, "Religious Daoism."

¹⁵ The Yin-Yang concept originally stems from the meaning of "Yang" as "sunshine or light" and "Yin" as "the absence of sunshine or darkness." In this way, the Yin-Yang concept symbolizes harmony. For more information, see Xinyan Jiang, "Chinese Dialectical Thinking—the Yin Yang Model," *Philosophy Compass* 8, no. 5 (2013): 438–46, <https://doi.org/10.1111/phc3.12035>.

order of the universe, the foundation of all things, mother of all changes, and the root of life and death.”¹⁶ Similarly, on the microcosmic scale, Yin and Yang are used in healing as a means to correct the order within the body, as, “In healing, one must grasp the root of disharmony, which is always subject to the law of yin and yang.”¹⁷ This cosmological model of the body shows the analogous nature of the body to the world, connecting healing and acupuncture to nature and the cosmos.¹⁸

Taoist Acupuncture

Balance, harmony, connection to nature, and the Taoist view of the function of a human body wove together to create the original form of Taoist acupuncture. Through the ideology of yin and yang, as well as that of Qi, Taoist physicians created the midday-midnight method of acupuncture.¹⁹ This method adheres to the midday-midnight law, which stipulates that the flow of Qi through the organs is dependent on the time of day.²⁰ The day is split into two-hour sections based upon the 10 heavenly stems of Yin and

¹⁶ Maoshing Ni, trans., *The Yellow Emperor's Classic of Medicine* (Boston and London: Shambhala Publications, Inc., 2011), pg. 39.

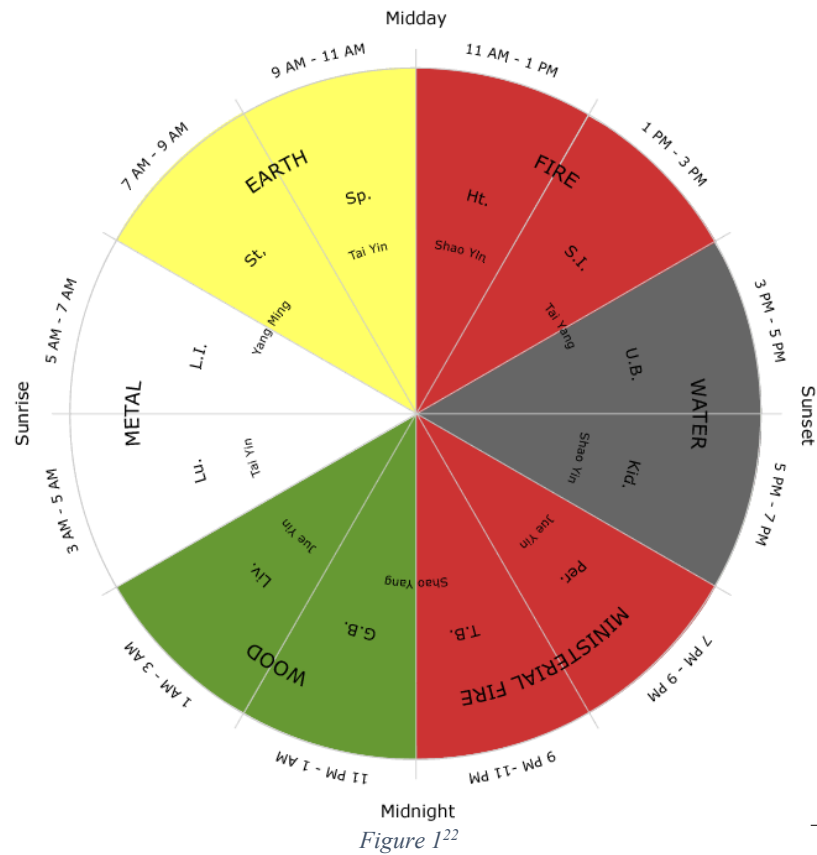
¹⁷ Ni., Pg. 39.

¹⁸ Trushina, “The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices.”

¹⁹ “A Study of Daoist Acupuncture & Moxibustion,” accessed October 27, 2020, <https://web-ebshost-com.ezproxy.baylor.edu/ehost/ebookviewer/ebook/bmXlYmtfXzExOTEwX19BTg2?sid=5ed1fa74-2ef3-42db-ab52-e4b6347ed5a6@sdv-v-sessmgr02&vid=0&format=EB&rid=1>.

²⁰ Myeong Soo Lee, Byung-Cheul Shin, and Dong-Myong Jeong, “An Exploratory Study of the Relationship between the Midday-Midnight Law and Electrical Conduction Properties of Corresponding Acupuncture Points,” *Acupuncture & Electro-Therapeutics Research* 30, no. 3–4 (2005): 201–6, <https://doi.org/10.3727/036012905815901307>.

Yang and the 12 earthly stems, creating a chart outlining when Qi will be in each internal organ, as shown below.²¹



²¹ "A Study of Daoist Acupuncture & Moxibustion."

²² "24 Hr Qi Flow Through the Acupuncture Channels," accessed November 2, 2020, <https://www.sacredlotus.com/go/acupuncture/get/24hr-qi-flow-channels>.

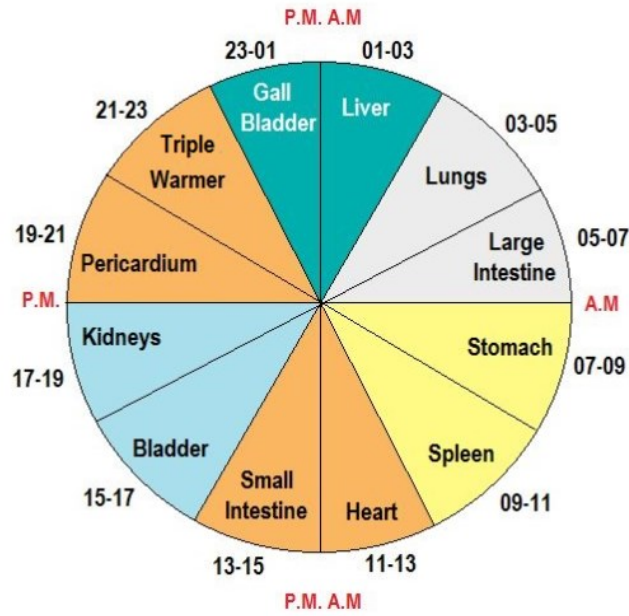


Figure 2²³

According to Taoist thought, the midday-midnight law shows the dichotomy and interdependence of the earth and the heavens, as heaven influences individuals through the ten heavenly stems and earth influences individuals through the twelve earthly stems.²⁴ The ten heavenly stems represent the movement of energy in the earth, and are shown as one of the five elements, earth, metal, fire, wood, and water.²⁵ Each of these elements have a yin and a yang stem, creating ten heavenly stems.²⁶ The twelve earthly branches describe the movement of the heavens and the subsequent effect on the energies

²³ "Why Do I Wake up at 3am?," *Acupuncture in East Sussex by Jeanie Gordon* (blog), February 8, 2019, <http://www.jgordonacupuncture.co.uk/health-issues/why-do-i-wake-up-at-3am>.

²⁴ "Theoretical-Basis-and-Concepts-V02e.Pdf," accessed November 2, 2020, <https://koch-tcm.ch/wp-content/uploads/Theoretical-Basis-and-Concepts-v02e.pdf>.

²⁵ "Theoretical-Basis-and-Concepts-V02e.Pdf."

²⁶ "A Study of Daoist Acupuncture & Moxibustion."

of heaven.²⁷ Like the ten heavenly stems, the twelve earthly stems are also connected to the elements, with fire having four cycles instead of two.²⁸ As the body reflects the world around it, the elements can each be connected to the different internal organs, as shown by the second chart above. The movement of energy through the heavens and earth is paralleled in the body through the movement of Qi through the twelve channels and subchannels, called collaterals, giving direction to Taoist physicians as to where the Qi is in the body at any given hour, and thus, where to treat at what time of day.²⁹ This method allowed physicians to identify locations at which acupuncture would be most useful for treatment of a certain ailment, restoring the proper balance of Yin and Yang through the movement of Qi at a time in which the cosmos agree with the treatment.

Since the first technique of acupuncture, many more techniques have been created by Taoist physicians. However, all forms of acupuncture greatly rely on yin and yang, as well as Qi, in order to restore health. The heavy emphasis on Yin and Yang is due to the fact that Taoism sees Yin and Yang as an important pair that complements and opposes each other. The concept is commonly woven into Taoist medicine because Taoist physicians believe that, “When yang prevails, yin is diseased.”³⁰ When yin or yang takes over more space than it is supposed to, the body is no longer in harmony, calling for

²⁷ “Theoretical-Basis-and-Concepts-V02e.Pdf.”

²⁸ “Theoretical-Basis-and-Concepts-V02e.Pdf.”

²⁹ “A Study of Daoist Acupuncture & Moxibustion.”

³⁰ Ni, *The Yellow Emperor’s Classic of Medicine*. Pg. 50.

medical intervention.³¹ This ideology is presented in *The Yellow Emperors Classic of Medicine*, where occurrence of disease and use of acupuncture is described:

The lou collaterals connect with the 365 points and correspond to the 365 days of the year. The function of the collaterals is to dispel the pathogen from the channels, and to promote the flow of the ying/nutritive and wei/defensive qi. When a pathogen attacks the body, causing the ying and the wei to stagnate, the wei qi disperses outward while the ying overflows inwardly. This causes fever and deficiency. Thus, one should sedate with acupuncture to promote flow within the collaterals.³²

Thus, the insertion of needles into the body is used to modify the internal balance, or Qi of the individual. Acupuncture heals the individual through releasing the blocks to their Qi pathway and through restoring harmony within the individual.³³

The points of insertion, though often on a meridian line, can also be points of tenderness that arise with sickness. During the Tang Dynasty, famous Chinese medical Sun Simaio introduced *ah shi* point acupuncture in his text, "*Beijin Qianjin Yaofan*."³⁴ *Ah shi* point acupuncture focuses on these tender points, as *ah shi* translates to "Oh yes!" reflecting the tenderness of the spot being needled.³⁵ While the *ah shi* points are not traditional acupuncture points, these points still help to restore balance within the body by dissolving the tenderness that disease causes.³⁶ *Ah shi* point acupuncture typically uses a

³¹ "A Study of Daoist Acupuncture & Moxibustion."

³² Ni, *The Yellow Emperor's Classic of Medicine*.

³³ White, "A Brief History of Acupuncture."

³⁴ *Beijin Qianjin Yaofan* translates to "Emergent Thousand Ducat Formulas." Zhu and Most, "Dry Needling Is One Type of Acupuncture."

³⁵ Anthony Campbell, *Acupuncture in Practice: Beyond Points and Meridians* (Edinburgh: Butterworth-Heinemann, 2001).

³⁶ Campbell.

singular needle that is inserted into the area from which pain arises.³⁷ Though *ah shi* point acupuncture is not as popular of a practice in Traditional Chinese Medicine, as the specificity of acupoints is generally followed more often than pain spots, the technique of *ah shi* point acupuncture is still learned and practiced today.³⁸

Though it may seem that seeking healing through acupuncture is an internally focused decision, acupuncture still upholds the Taoist ideas of asceticism. The Taoist virtue of *wu wei*, or non-doing, holds that one should not act out of personal interest, but does only what nature requires and focus on self-cultivation through mind-body exercises.³⁹ According to Taoist beliefs, maintaining health is not an action done in self-interest, as being healthy is not an end in itself.⁴⁰ Acupuncture merely, “Serves to ensure that the body and its parts and organs may fulfil their emblematic functions.”⁴¹ Therefore, maintaining good health is actually required in order to continue progress toward the Tao and toward balance and virtue. Additionally, the focus on mind-body practices and self-cultivation is also fulfilled in acupuncture, as acupuncture is thought of as a passive process. In acupuncture, Qi is already inside the individual and the physician does not introduce anything new into the body in order to treat the individual.⁴² The physician

³⁷ Emma M. Choi, Fang Jiang, and John C. Longhurst, “Point Specificity in Acupuncture,” *Chinese Medicine* 7, no. 1 (February 28, 2012): 4, <https://doi.org/10.1186/1749-8546-7-4>.

³⁸ Choi, Jiang, and Longhurst.

³⁹ Pregadio, “Religious Daoism.”

⁴⁰ Pregadio.

⁴¹ Pregadio.

⁴² Trushina, “The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices.”

simply redirects the Qi and helps to remove blockages. Due to this, acupuncture is thought of as the patient healing themselves, connecting acupuncture to self-cultivation.⁴³

Conclusion

In modern medicine, acupuncture has somewhat moved out of a religious and spiritual practice and is now more characterized as a medical procedure, backed by an impressive body of research.⁴⁴ The Qi pathway system, which grew to be called meridians, grew out of favor with Western practitioners, as they turned to the nervous system pathways instead.⁴⁵ However, meridians are still used a great deal in acupuncture practices, as the meridians of ancient acupuncture are quite close to the nerve pathways already.⁴⁶ Modern day acupuncture applications include a myriad of uses, including the treatment of cancer patients, for whom it has shown a possible improvement in immune system strength.⁴⁷ Additionally, breakthroughs are still being made in acupuncture practice, as evidenced by the recent use of scalp acupuncture. Through the use of scalp acupuncture, 80-90% of patients with central nervous system diseases who received the acupuncture treatment reported improvements in their condition.⁴⁸ Acupuncture's applications have vastly widened, but the practice still largely remains the same in

⁴³ Trushina.

⁴⁴ For more information on the studies surrounding acupuncture as a medical procedure, see Chapter 3 of this thesis.

⁴⁵ Jason Jishun Hao and Michele Mittelman, "Acupuncture: Past, Present, and Future," *Global Advances in Health and Medicine* 3, no. 4 (July 2014): 6–8, <https://doi.org/10.7453/gahmj.2014.042>.

⁴⁶ Hao and Mittelman.

⁴⁷ Hao and Mittelman.

⁴⁸ Hao and Mittelman.

technique and in ideals. Though now considered more scientific and less spiritual, acupuncture is nevertheless inextricably tied to Taoism, which as show above, scaffolds the entire practice. This unified approach to medicine providing a holistic healing method that may help explain its patient clinical outcomes.⁴⁹

Though the precise nature of the mechanisms behind the practice have changed over time, the holistic outlook of acupuncture, due especially to Taoist influence, provide a practice that cares for the whole patient. While the acupuncturist plays a large role in the *facilitation* of healing, the patient is ultimately healed as a result of increasing self-awareness brought about by regulating the flow of Qi. I now turn to the origins and applications of a Western intervention, which bears great resemblance to acupuncture stripped of this holistic Taoist influence: dry needling.

⁴⁹ For more on how cultural values affect the practice of acupuncture, see Chapter 4.

CHAPTER 2

The Body of the Needle: Needling in Western Society

Introduction

While traditional Chinese medicine and Taoism laid the basis for the acupuncture that we know today, Western biomedicine set the foundation for dry needling. In this chapter, I continue my exploration of the similarities between the techniques and the differences in their origins by focusing on dry needling.¹ First, I detail the origins of dry needling. Though heavily grounded and supported by the popularity of acupuncture, dry needling and trigger point theory emerged through a different avenue than acupuncture: the use of anesthetic injections.² Using injections to treat musculoskeletal pain allowed for observation and research on pain control through the use of “wet needles” and eventually “dry needles,” leading to the practice of dry needling.³

¹ Many acupuncturists contest the origins of dry needling, as it seems that acupuncture had a large hand in the creation of dry needling. However, according to Legge, Western biomedicine, through the work of Kellgren, Lewis, and Travell set the foundation for dry needling. For more information regarding the use of acupuncture in the creation of dry needling, see Legge, “A History of Dry Needling.”

² Legge.

³ Wet needles are defined as needles used to inject a substance into the body, as defined by Legge, “A History of Dry Needling.” Dry needles are defined as needles with no injectable substance. These needles, in contrast to wet needles, do not contain an anesthetic or medication of any kind, and thus, were seen as dry needles. Legge, “A History of Dry Needling.”

The Origin of Dry Needling

The Origin of Trigger Points

Before the practice of dry needling began, anesthetic injections led to the discovery of early trigger point theory. In the late 1930s, researchers John Kellgren and Sir Thomas Lewis from University College Hospital in London discovered that muscular pain is often referred and the pattern of pain is specific to the muscle.⁴ Kellgren, specifically, discovered the referred nature of pain experimentally by injecting saline solution into a patient's muscular tissue.⁵ After the injection, Kellgren found that the patient experienced muscular pain in a place far away from the saline injection site.⁶

From this experiment, Kellgren and Lewis research also found that:

- Tenderness could also be referred.
- Tenderness was not a useful diagnostic guide unless the patient winced when a tender point was palpated [now known as the jump sign or recognition of pain by patient].
- Some pain could be relieved by injecting procaine⁷ into acutely tender points which were often at some distance from the site of the pain.
- The relief obtained often far outlasted the effects of the anesthetic and in many cases could be considered permanent.⁸

From these discoveries, Lewis and Kellgren hypothesized that injecting trigger points—these being tender spots in the muscle—might provide long-term relief for the patient.

⁴ Thomas Lewis, "Study of Somatic Pain," *British Medical Journal* 1, no. 4023 (February 12, 1938): 321–25. J. H. Kellgren, "Referred Pains from Muscle," *British Medical Journal* 1, no. 4023 (February 12, 1938): 325–27.

⁵ Kellgren, "Referred Pains from Muscle."

⁶ Kellgren.

⁷ Procaine is a local anesthetic. For more information on procaine, see Tom Outland and C. R. Hanlon, "The Use of Procaine Hydrochloride as a Therapeutic Agent," *Journal of the American Medical Association* 114, no. 14 (April 6, 1940): 1330–33, <https://doi.org/10.1001/jama.1940.02810140030008>.

⁸ Legge, "A History of Dry Needling."

The Origin of Dry Needling Practice

Dry needling can trace its roots to the research of Lewis and Kellgren and their understanding of trigger points as a place in the muscle where the effects of anesthetics and local pain medication were amplified.⁹ In 1941, American researchers Brav and Sigmond published a paper that stated that simply needling the skin could relieve pain without the use of anesthetics or other analgesic medications.¹⁰ While Brav and Sigmond acknowledge that this observation has been present in acupuncture for quite a while, the clinical trials set up by Brav and Sigmond looked at the, “Efficacy of anesthetic injection and the importance of the location of the injection.”¹¹ In this study, researchers administered either a Novocain shot,¹² a saline shot, or the insertion of a dry needle into triggers points for a group of 62 individuals with sciatica or low back pain without visceral disease.¹³ While the treatment group receiving the anesthetic had the best outcome, the insertion of the dry needle had very similar, slightly worse outcomes.¹⁴ This discovery led to the eventual combination of trigger point theory and the insertion of dry needles to treat musculoskeletal pain around the 1970s.¹⁵

⁹ Lewis, “Study of Somatic Pain.” Kellgren, “Referred Pains from Muscle.”

¹⁰ A. Brav and Henry Sigmond, *The Local and Regional Injection Treatment of Low Back Pain and Sciatica**, n.d.

¹¹ Legge, “A History of Dry Needling.”

¹² Novocaine is an anesthetic that is no longer used due to the creation of lidocaine local anesthetic. For more information, see “How Long Does Novocaine Last?,” accessed March 22, 2021, <https://www.medicalnewstoday.com/articles/321880>.

¹³ Brav and Sigmond, *The Local and Regional Injection Treatment of Low Back Pain and Sciatica**.

¹⁴ Brav and Sigmond.

¹⁵ Brav and Sigmond.

With the increased globalization of China in the 1970s, the interest in acupuncture grew, leading to a landmark paper for the practice of dry needling.¹⁶ In 1979, as the use of acupuncture in pain management rose, Karel Lewit looked at the health outcomes of his patients when needling tender points with a dry needle.¹⁷ In his paper, “The Needle Effect in the Relief of Myofascial Pain,” Lewit found that inserting dry needles into tender spots relieved pain for anywhere between a few days to permanently depending on the structure that was being needled.¹⁸ The pain relief was most significant at the sites that were the most tender.¹⁹ Lewit observed the effects of what would come to be known as dry needling on myofascial trigger points, scar tissue, ligaments, nerve pathways and more, reflecting the pathways of acupuncture.²⁰ Lewit also determined the efficacy of acupuncture needles opposed to hypodermic needles, as acupuncture needles seemed to be safer and, “Produced less bleeding and bruising.”²¹ Altogether, this study described “The needle effect,” which would soon come to be known as “Dry Needling.”²²

Dry Needling Techniques

Today, the American Physical Therapy Association (APTA) recognized dry needling as, “A skilled intervention that uses a thin filiform needle to penetrate the skin

¹⁶ Legge, “A History of Dry Needling.”

¹⁷ Legge.

¹⁸ Karel Lewit, “The Needle Effect in the Relief of Myofascial Pain,” *Pain* 6, no. 1 (February 1979): 83–90, [https://doi.org/10.1016/0304-3959\(79\)90142-8](https://doi.org/10.1016/0304-3959(79)90142-8).

¹⁹ Lewit.

²⁰ Lewit.

²¹ Legge, “A History of Dry Needling.”

²² Legge.

and stimulate underlying myofascial trigger points, muscular, and connective tissues for the management of neuromusculoskeletal pain and movement impairments.”²³ Though research, such as Lewit’s study, has shown the efficacy of dry needling on connective tissue and neurological pathways, State Boards have tended to restrict dry needling by physical therapists to intramuscular modalities to keep patients safe.²⁴ Relatedly, physical therapists usually perform myofascial trigger point dry needling (MTrP-DN, TrP-DN), as this technique has been best supported by the limited research available.²⁵

Though some studies have shown the efficacy of MTrP-DN, governing bodies continue to regulate highly this somewhat controversial practice.²⁶ According to the APTA, currently only 36 states and Washington D.C. allow dry needling to be performed by physical therapists.²⁷ One of the principal arguments against TrP-DN is the lack of a standardized education for dry needling, as general physical therapy education does not include modules on the practice.²⁸ Nearly twenty years ago, the Tennessee Board of Occupational and Physical Therapy relayed their concerns this way:

In order to practice TrP-DN, physical therapists need to be able to demonstrate competence or adequate training in the technique and that they practice in a jurisdiction where TrP-DN is considered within the scope of physical therapy practice. Because dry

²³ Dunning et al., “Dry Needling.”

²⁴ Dunning et al. The safety of patients is reflected by strenuous limitations in dry needling, as there is very little intra-professional stability in determining trigger points. For more on this subject, please see chapter 3 of this thesis.

²⁵ Legge, “A History of Dry Needling.”

²⁶ Legge.

²⁷ “Dry Needling State Laws,” APTA, January 25, 2021, <https://www.apta.org/patient-care/interventions/dry-needling/laws-by-state>.

²⁸ Jan Dommerholt, Orlando Mayoral del Moral, and Christian Gröbli, “Trigger Point Dry Needling,” *Journal of Manual & Manipulative Therapy* 14, no. 4 (October 2006): 70E-87E, <https://doi.org/10.1179/jmt.2006.14.4.70E>.

needling techniques emerged empirically, different schools and conceptual models have been developed, including the radiculopathy model, the MTrP model, and the spinal segmental sensitization mode.²⁹

As there are many techniques for dry needling, and many concerns that come from incorrect dry needling, some State Boards have opted out of allowing physical therapists to perform dry needling. This is to remove physical therapists from invasive procedures that could adversely affect the nervous system, musculoskeletal system, or more of a patient who receives faulty dry needling.³⁰

Where State Boards allow physical therapists to perform dry needling, certification courses teach certain techniques.³¹ The most commonly used model of dry needling performed by physical therapists is that of the trigger point model.³² Trigger Point Dry Needling, TrP-DN, is based on myofascial trigger points, which Dr. Jan Dommerholt describes as, “Hyperirritable spots in skeletal muscle that are associated with a hypersensitive palpable nodule in a taut band.”³³

The trigger point model of dry needling expands the early trigger point theory, as the hypothesis behind trigger point stimulation in pain relief expanded. The increase in

²⁹ Dommerholt, Mayoral del Moral, and Gröbli.

³⁰ Dommerholt, Mayoral del Moral, and Gröbli.

³¹ Though there are multiple dry needling techniques, such as the spinal segmental sensitization model and the radiculopathy model, the focus of this thesis is on the techniques used specifically by physical therapists. The spinal segmental sensitization model of needling is a neural stimulation model which uses injectates. This model is not usually performed in the field of physical therapy. For more information, see Dommerholt, Mayoral del Moral, and Gröbli. The radiculopathy model is a dry needling approach created by Dr. Chan Gunn, who believes that all intramuscular pain is caused by peripheral neuropathy of radiculopathy. Gunn defines radiculopathy as, “A condition that causes disordered function in the peripheral nerve.” This model has little to no evidence substantiating its efficacy. For more information, see Dommerholt, Mayoral del Moral, and Gröbli.

³² Dommerholt, Mayoral del Moral, and Gröbli, “Trigger Point Dry Needling.”

³³ Dommerholt, Mayoral del Moral, and Gröbli.

biological knowledge led to the understanding of trigger points anatomically. Trigger point theory shows that the creation of a myofascial trigger point begins with the abnormal release of acetylcholine³⁴ from the synaptic cleft of a neuron.³⁵ This abnormal functioning causes more irregular functioning in return, as the change in release of acetylcholine causes an increased number of endplate potentials.³⁶ Because of the increase in endplate potentials, the neuron experiences a continuous depolarization, which does not allow for enough calcium ions to be taken in.³⁷ The decrease in calcium ions causes shortening of sarcomeres,³⁸ causing the muscles to contract constantly.³⁹

Researchers hypothesize that, besides the lack of calcium causing the shortening of sarcomeres, the sarcomeres might also shorten because of the lack of binding ability of myosin filaments.⁴⁰ Further, myosin filaments seem to get stuck at the same time that the

³⁴ Acetylcholine is a neurotransmitter that is largely responsible for muscular movement. For more information, see PubChem, "Acetylcholine," accessed March 25, 2021, <https://pubchem.ncbi.nlm.nih.gov/compound/187>.

³⁵ The synaptic cleft of a neuron is the space between neurons through which neurotransmitters are diffused. For more information, see Harvey Lodish et al., "Overview of Neuron Structure and Function," *Molecular Cell Biology. 4th Edition*, 2000, <https://www.ncbi.nlm.nih.gov/books/NBK21535/>. See also Giles Gyer, Jimmy Michael, and Ben Tolson, *Dry Needling For Manual Therapists: Points, Techniques and Treatments, Including Electroacupuncture and Advanced Tendon Techniques* (London and Philadelphia: Singing Dragon, 2016).

³⁶ Endplate potentials are voltages across a neuron that cause the depolarization of a neuron. For more information, see W Van der Kloot and I S Cohen, "End-Plate Potentials in a Model Muscle Fiber. Corrections for the Effects of Membrane Potential on Currents and on Channel Lifetimes.," *Biophysical Journal* 45, no. 5 (May 1984): 905–11. Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

³⁷ Gyer, Michael, and Tolson.

³⁸ Sarcomeres are the parts of a muscle fiber that are responsible for contraction of the muscle. For more information, see Eng Kuan Moo and Walter Herzog, "Single Sarcomere Contraction Dynamics in a Whole Muscle," *Scientific Reports* 8 (October 15, 2018), <https://doi.org/10.1038/s41598-018-33658-7>.

³⁹ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁴⁰ Gyer, Michael, and Tolson.

body is up taking a decreased level of calcium ions.⁴¹ The fixation of the myosin filaments prevents the sarcomeres from returning to their resting position, causing constant contraction.⁴² The shortening of the sarcomere can be seen in this diagram:

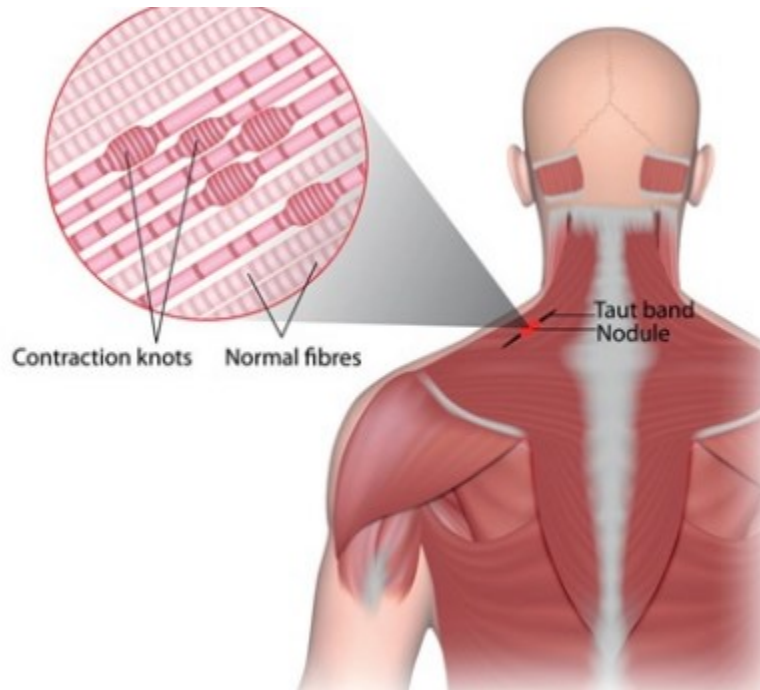


Figure 3⁴³

The consequence of a constantly contracting muscle fiber lies in that the muscle cannot accommodate the necessary supply of nutrients and oxygen, reducing the availability of ATP.⁴⁴ The decrease in ATP causes further contraction, as ATP is necessary in order to

⁴¹ Myosin filaments are part of a muscle fiber. When they overlap with actin, the muscle is able to contract. For more information, see Moo and Herzog, "Single Sarcomere Contraction Dynamics in a Whole Muscle." See also, Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁴² Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁴³ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁴⁴ ATP provides energy to cells for life sustaining processes such as muscle contraction. For more information, see Massimo Bonora et al., "ATP Synthesis and Storage," *Purinergic Signalling* 8, no. 3

break down the actin-myosin bonds needed for muscle contraction.⁴⁵ This reaction creates an energy crisis through increased and unmet demand for ATP production to break down the bonds holding the contraction.⁴⁶ The constant contraction combined with the created energy crisis causes pain, as well as stimulation of the neurons which starts this process over again exacerbating the problem.⁴⁷ When a dry needle is inserted into a trigger point, the needle causes a muscle spasm, which allows the contracted muscle to relax.⁴⁸

As previously hypothesized in the late 1900s, myofascial trigger points have a pattern of referred pain.⁴⁹ Pain management research has led to the creation of a map of the pain patterns of referred pain:⁵⁰

(September 2012): 343–57, <https://doi.org/10.1007/s11302-012-9305-8>. Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁴⁵ Gyer, Michael, and Tolson.

⁴⁶ Gyer, Michael, and Tolson.

⁴⁷ Gyer, Michael, and Tolson.

⁴⁸ Jan Dommerholt, “Dry Needling — Peripheral and Central Considerations,” *The Journal of Manual & Manipulative Therapy* 19, no. 4 (November 2011): 223–27, <https://doi.org/10.1179/106698111X13129729552065>.

⁴⁹ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁵⁰ Gyer, Michael, and Tolson.

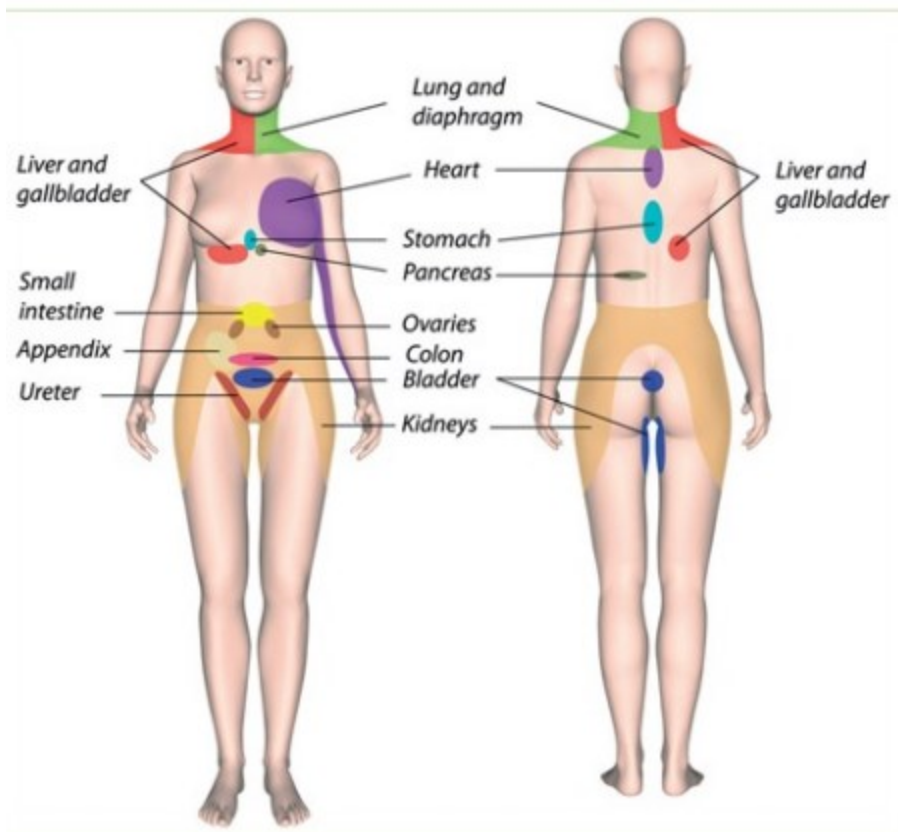


Figure 4⁵¹

Myofascial trigger points are classified as either active or latent.⁵² Active trigger points can cause spontaneous pain at either the site of the trigger point or along a referred pain pathway.⁵³ Latent trigger points, opposed to active trigger points, do not cause spontaneous pain, however, latent trigger points can still cause local or referred pain when palpated.⁵⁴ While both types of trigger points are important to treat, active trigger

⁵¹ Gyer, Michael, and Tolson.

⁵² Dommerholt, "Dry Needling — Peripheral and Central Considerations."

⁵³ Dommerholt.

⁵⁴ Dommerholt.

points typically cause more pain, as the patient could feel the pain without palpation of the point.⁵⁵ Palpation to find these trigger points can be either flat palpation, pressing fingers on a flat surface, or pincher-type palpation, using fingers as a pincher to palpate, depending on the shape of the muscle.⁵⁶

The treatment of trigger points is important because of their role in motor dysfunction. As trigger points can be caused by the overuse of a muscle, the affected muscle can become very weak and painful.⁵⁷ The range of motion of an affected muscle can be severely limited, causing a decrease in the ability to work or do activities you enjoy.⁵⁸ Because each patient may have trigger points that appear in a different location, physical therapists typically use palpation, which causes mild pain, or emphasizes pain that is already present, at the site.⁵⁹ Restricted range of motion may also allow the physical therapist to find the afflicted muscle, and thus, the trigger point.⁶⁰ Patients might also have an increase in other bodily activity surrounding the trigger point, such as vasoconstriction or hypersecretion.⁶¹ Once found, the physical therapist can determine if the trigger point is active or latent based upon the pain at the site before and after palpation.⁶² To help determine the classification of a trigger point, it might also be helpful

⁵⁵ Dommerholt.

⁵⁶ Dommerholt, Mayoral del Moral, and Gröbli, "Trigger Point Dry Needling."

⁵⁷ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁵⁸ Gyer, Michael, and Tolson.

⁵⁹ Gyer, Michael, and Tolson.

⁶⁰ Gyer, Michael, and Tolson.

⁶¹ Gyer, Michael, and Tolson.

⁶² Dommerholt, "Dry Needling — Peripheral and Central Considerations."

to ask the questions: “1. ‘Does this hurt?’ 2. ‘Is this causing pain anywhere else?’ 3. ‘Is this the pain you have been experiencing?’”⁶³

Once the physical therapists believe that they have found the trigger point, a local twitch response can confirm the location. A quick contraction of the muscle fibers of a taut band cause a local twitch response.⁶⁴ Physical therapists often see the local twitch response when the practitioner inserts the needle into the trigger point.⁶⁵ Researchers believe that the presence of a local twitch response a positive treatment outcome and effective technique.⁶⁶ The local twitch response is essential to trigger point dry needling, as it identifies the correct location of the needle which is important when needling close to internal organs or neural pathways.⁶⁷ Additionally, researchers have presented evidence suggesting that when the physical therapist elicits a local twitch response in the patient, they have better outcomes.⁶⁸

When inserting a dry needle into a trigger point, a physical therapist uses either superficial or deep technique. The superficial technique affects the primary peripheral sensory afferent neurons,⁶⁹ as the physical therapist does not insert the needle far into the

⁶³ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

⁶⁴ Gyer, Michael, and Tolson.

⁶⁵ Gyer, Michael, and Tolson.

⁶⁶ Gyer, Michael, and Tolson.

⁶⁷ Dommerholt, Mayoral del Moral, and Gröbli, “Trigger Point Dry Needling.”

⁶⁸ Dommerholt, Mayoral del Moral, and Gröbli.

⁶⁹ Primary peripheral sensory afferents carry neural information from the body to the central nervous system, the spine and brain. For more information, see J. M. Shefner, F. Buchthal, and C. Krarup, “Recurrent Potentials in Human Peripheral Sensory Nerve: Possible Evidence of Primary Afferent Depolarization of the Spinal Cord,” *Muscle & Nerve* 15, no. 12 (December 1992): 1354–63, <https://doi.org/10.1002/mus.880151211>.

muscle.⁷⁰ The deep needling technique targets the trigger point, and thus, the dysfunctional motor unit itself, as the needle is used to relieve the contracted muscle.⁷¹ There is no direct evidence that shows the optimal depth of insertion nor the optimal time of insertion.⁷²

In order to administer the dry needling procedure appropriately, the physical therapist must attend trainings and a certification course in order to locate and alleviate the trigger point correctly. Once located, the insertion of a dry needle into a trigger point helps to ease pain and muscle contraction by causing a muscle spasm that allows the muscle to relax and by encouraging muscle regeneration.⁷³ Dry needling activates the movement of satellite cells to the affected muscle, which repair and replace damaged myofibers.⁷⁴ Patients typically see the regenerative effect of dry needling in 7 to 10 days post needling procedure.⁷⁵ However, accurate needling can lead to instantaneous sarcomere relaxation, potentially leading the myofiber to fall back to its resting position.⁷⁶ In order for both responses to occur, it is helpful to move or rotate the needle around once inserted or to add electrical stimulation to the needle.⁷⁷

⁷⁰ Dommerholt, "Dry Needling — Peripheral and Central Considerations."

⁷¹ Dommerholt.

⁷² Dommerholt, Mayoral del Moral, and Gröbli, "Trigger Point Dry Needling."

⁷³ Dommerholt, Mayoral del Moral, and Gröbli.

⁷⁴ Dommerholt, Mayoral del Moral, and Gröbli.

⁷⁵ Dommerholt, Mayoral del Moral, and Gröbli.

⁷⁶ Dommerholt, Mayoral del Moral, and Gröbli.

⁷⁷ Dommerholt, Mayoral del Moral, and Gröbli.

Conclusion

We still need much more research to support the claims of the efficacy of dry needling and to improve the practice of finding trigger points.⁷⁸ The practice of dry needling, though new, takes on the established reputation of biomedicine as a legitimate practice. This being said, it is interesting that many of the primary researchers of dry needling refer to acupuncture in their trials and texts, though not surprising. Though the developers of dry needling based their hypotheses for the mechanism of action of dry needling on different biological ideas than that of acupuncture, the two practices seem quite similar. In the next chapter, I will compare acupuncture and dry needling on the basis of available clinical trials.

⁷⁸ Dommerholt, Mayoral del Moral, and Gröbli.

CHAPTER 3

The Root of the Needle: Similarities Between Acupuncture and Dry Needling

Introduction

Now that I have explained the origins and techniques of both acupuncture and dry needling, we are in a better position to compare the implementation and efficacy of the two practices. Acupuncturists suggest that dry needling is a type of acupuncture, while the American Physical Therapy Association is adamant that dry needling is not acupuncture.¹ However, as I argue below, a comparison of the two practices and the outcomes of their respective clinical trials suggests that dry needling does indeed derive from acupuncture, but that it seems to be less efficacious.² If correct, the obvious question is “Why?” (on which see Chapter 4).³

I begin with the similarities between these two practices.

Similarities of Acupuncture and Dry Needling

Nomenclature matters, and the name “dry needling” implies dependence upon acupuncture in that traditional practitioners used the folk name “dry needling” to refer to

¹ Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

² Comparisons between the two practices are often quite thorny, as information on the practices can be different depending on the source, causing a potential limitation to the argument presented. Moreover, existing clinical trials for dry needling are confounded by researchers’ reliance on data from acupuncture research. For more information, see Sonja Ristevski, “Research Studies Show Dry Needling Has No Long-Term Benefits,” *Healthy But Smart*, May 25, 2017, <https://healthybutsmart.com/dry-needling-therapy/>.

³ If dry needling is, in fact, a type of (less efficacious) acupuncture, the American Physical Therapy Association (APTA) would need to reform significantly their standards for curricula and continuing education (on which see Conclusion below).

acupuncture as early as the 1900s.⁴ Traditional practitioners used the folk name to differentiate acupuncture needles from western injection needles after the introduction of Western biomedicine to the East.⁵ Beyond the names, the basic techniques, the needles used, the location of points on the body to be needled, and the overall biomedical understanding of the human body overlap in important ways that suggest dependence.⁶

First, the basic techniques of these needling practices are roughly equivalent. Both acupuncture and dry needling require the insertion of needles into the skin, and often muscle, at designated areas in order to treat a patient.⁷ With this in mind, many argue that dry needling is a subcategory of Western medical acupuncture.⁸ Both practices use a deep needling technique in which the practitioner inserts the needle into a designated area.⁹ In

⁴ Arthur Yin Fan and Hongjian He, “Dry Needling Is Acupuncture,” n.d., 2.

⁵ Fan and He.

⁶ Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

⁷ So, from the beginning, dry needling would fit very nicely into the overall umbrella of acupuncture, which is generally defined as the use of needles to prick the skin and tissue in order to treat a patient. See Fan and He, “Dry Needling Is Acupuncture.” The needles that are typically used for both practices are solid filiform needles, which are commonly referred to as acupuncture needles. See Dommerholt, “Dry Needling — Peripheral and Central Considerations.” In its infancy, dry needling practitioners used hypodermic needles, or hollow needles, instead of solid filiform needles. However, in Lewit’s study on dry needling efficacy for musculoskeletal pain management, Lewit suggested that acupuncture needles are safer for the patients, as they cause less bruising and bleeding. Now, both acupuncturists and dry needling practitioners use acupuncture needles in their practice. See Lewit, “The Needle Effect in the Relief of Myofascial Pain.” Cf. Zhu and Most, “Dry Needling Is One Type of Acupuncture.”

⁸ Acupuncture performed in the West is typically called Western medical acupuncture, as acupuncture has now added modern biomedical understandings of the human body to the Traditional Chinese Medicine practices and understandings of meridians and Qi pathways. For more information, see Fan and He, “Dry Needling Is Acupuncture.” Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

⁹ Arthur Yin Fan, Jun Xu, and Yong-Ming Li, “Evidence and Expert Opinions: Dry Needling versus Acupuncture (II) : The American Alliance for Professional Acupuncture Safety (AAPAS) White Paper 2016,” *Chinese Journal of Integrative Medicine* 23, no. 2 (February 2017): 83–90, <https://doi.org/10.1007/s11655-017-2800-6>. Some dry needling practitioners use superficial needling techniques, in which only the skin is needled. The superficial needling practice, however, is not as

both practices, whether dealing with trigger points or *ah shi* points, practitioners often manipulate the needle within the patient in circular or vertical movements in order to relax the muscle surrounding the trigger point or *ah shi* point.¹⁰ They also follow similar rules on how long the needles should be inserted.¹¹ Thus, the basic technique of dry needling does not stray from the definition of acupuncture, performing the same techniques as acupuncture with the same tools.

Second, beyond the equipment and the techniques, the anatomical targets of each practice significantly overlap, suggesting a relationship between dry needling and acupuncture. “Trigger points” correspond more than loosely to *ah shi* points, or acupoints. While Travell and Simons may have coined the term “trigger point,” acupuncturists have long worked with most of these points as acupoints.¹² In fact, most trigger points correspond to pre-designated acupoints.¹³ For example, Melzack et. al., in the first evidence-based study comparing the location of trigger points and acupoints, found that out of 56 trigger points studied, all 56 were within 3 cm of an acupoint.¹⁴ Additionally, Melzack et. al. found that 71% of the trigger points had matching pain

common as deep needling and it still involves the insertion of a needle into the patient. On the variation of practices within dry needling, see Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

¹⁰ Fan, Xu, and Li, “Evidence and Expert Opinions.”

¹¹ As per dry needling guidelines, the needles typically stay inserted for 10 to 30 minutes. Similarly, acupuncturists typically leave the needles inserted for at least 20 minutes. Dunning et al., “Dry Needling.” “Acupuncture: Where to Place the Needles and for How Long - Anthony Campbell, 1999,” accessed April 1, 2021, <https://journals.sagepub.com/doi/10.1136/aim.17.2.113>.

¹² Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

¹³ Gyer, Michael, and Tolson.

¹⁴ Fan, Xu, and Li, “Evidence and Expert Opinions.”

indications with the closest acupoint, showing that both trigger points and acupoints operate using the same biological process.¹⁵ In another study, Zhou et. Al. found that trigger points are synonymous with *ah shi* points, as they both are found in the same way and produce the same sensitive response.¹⁶ In their analysis, Fan et. Al. clearly state, that trigger points are, by definition “part of tender points in muscle bellies [and] considered part of *ah shi* points.” They conclude that, “TrPs *completely* fall within *ah shi* points category” (emphasis mine).¹⁷

Third, muscle twitch response in dry needling and the *de Qi* response in acupuncture likewise correspond.¹⁸ Both reactions are local muscle twitches, and both are used to predict the procedure’s efficacy.¹⁹ In acupuncture, the *de Qi* response is foundational, as it determines the therapeutic effectiveness of the practice.²⁰ Similarly, studies show that the twitch response in dry needling is necessary for positive health outcomes from the needling.²¹ That both responses involve the same biological mechanisms and carry the same significance, strongly suggests that the reactions themselves, like the techniques that cause them, are similar, if not identical.

¹⁵ Fan, Xu, and Li.

¹⁶ Fan, Xu, and Li.

¹⁷ Fan, Xu, and Li. Pg. 85-86. Furthermore, the National Commission for the Certification of Acupuncture and Oriental Medicine found that in practice, 82% of acupuncturists use what dry needling practitioners call trigger point needling (Fan, Xu, and Li.).

¹⁸ Since trigger points and *ah shi* points overlap substantially, this should not be surprising. As earlier defined, both the *de Qi* response and the twitch response are muscle spasms caused by the needling of a taut band within the muscle. Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

¹⁹ Zhou, Ma, and Brogan.

²⁰ Zhou, Ma, and Brogan.

²¹ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*.

Fourth, both needling practices stimulate similar clinical outcomes related to pain management. Acupuncture and dry needling are mostly practiced to reduce musculoskeletal pain in patients.²² Using both needling techniques for disorders of the musculoskeletal system shows that acupuncture and dry needling techniques should cause the same clinical outcome as well.²³ This is because both practices stimulate the same biological reaction.²⁴ Proposed mechanisms of action do diverge from each other, in that dry needling is articulated from a biomedical vantage point and acupuncture is often understood from a Taoist perspective, focused on fixing Qi pathways. However, both dry needling and acupuncture seem to work due to the same biological reaction of releasing muscle tension and bringing increased blood flow to the area, which reduces pain.²⁵

Though the techniques, tools, and clinical applications of both dry needling and acupuncture are similar, showing that dry needling should be a subcategory of acupuncture, the APTA believes the two practices differ substantially. If this is the case,

²² Zhou, Ma, and Brogan, "Dry Needling versus Acupuncture."

²³ Zhou, Ma, and Brogan.

²⁴ Fan, Xu, and Li, "Evidence and Expert Opinions."

²⁵ Gyer, Michael, and Tolson, *Dry Needling for Manual Therapists*. Though there is much similarity in the musculoskeletal uses of dry needling and acupuncture, acupuncture can also be used to treat neurological disorders and gastrointestinal disorders. In contrast, the American Physical Therapy Association restricted the use of dry needling to only musculoskeletal disorders. Though acupuncture is most generally used for reducing musculoskeletal pain, the broader range of possible acupuncture treatments suggests that dry needling fits into acupuncture as a subcategory. See "Dry Needling State Laws." On acupuncture for the treatment of neurological disorders and gastrointestinal disorders, see Zhou, Ma, and Brogan, "Dry Needling versus Acupuncture."

we ought to expect differences between clinical trials of each practice, which would need to be explained (on which see Chapter 4).

Clinical Trials

Though acupuncture has an extensive body of research, much more is still needed, as the clinical trials available today seem to have some conflicting evidence as to the efficacy of acupuncture.

Acupuncture Clinical Trials

The extensive body of research around acupuncture is evident through a search on PubMed, which produces more than 5330 articles when one searches for “acupuncture clinical trial.”²⁶ Based upon this solid clinical data, the World Health Organization recommends acupuncture for the treatment of 107 different diseases.²⁷ Many of these treatments surround pain management, as researchers have linked an immediate increase in adenosine in the surrounding area after acupuncture.²⁸ Because adenosine is involved in both pain modulation and sourcing energy for muscles, acupuncture provides pain relief to a muscle, increases strength of a muscle, and increases the range of motion for joints.²⁹ Though much of acupuncture research shows promising results, more research into individual diseases that acupuncture could treat is still necessary.

²⁶ Zhu and Most, “Dry Needling Is One Type of Acupuncture.”

²⁷ Zhu and Most.

²⁸ Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

²⁹ Zhou, Ma, and Brogan.

More research is needed to determine the boundaries of the efficacy of acupuncture.³⁰ In a number of acupuncture clinical trials, researchers found that acupuncture may help with pain management in *chronic* pain conditions, such as longstanding neck pain, low-back pain, knee pain, migraine and tension headaches, and osteoarthritis.³¹ In another study, German researchers gave either sham acupuncture or acupuncture to 53 patients over ten sessions and found that acupuncture was effective in alleviating pain from osteoporosis in a sustained and clinically significant manner.³² The acupuncture group experienced greater pain relief, improving the patients' quality of life for up to three months after receiving the treatment, while the sham acupuncture group experienced some pain relief for a short period of time.³³ However, acupuncture is no panacea (nor should we expect it to be). For example, in their study on the efficacy of acupuncture for migraines, Diener et. al. concluded that acupuncture and sham acupuncture outcomes did not differ significantly.³⁴ As trials are ongoing, the clinical guidelines for designating acupuncture as a treatment for certain diseases are inconsistent, allowing for less clinically typical avenues to acupuncture research.³⁵

³⁰ "Acupuncture: In Depth," NCCIH, accessed April 5, 2021, <https://www.nccih.nih.gov/health/acupuncture-in-depth>.

³¹ "Acupuncture."

³² Lisa Sherman, "Acupuncture Reduces Pain of Osteoporosis," *The Journal of Chinese Medicine*, no. 113 (February 1, 2017): 64–65.

³³ Sherman.

³⁴ Hans-Christoph Diener et al., "Efficacy of Acupuncture for the Prophylaxis of Migraine: A Multicentre Randomised Controlled Clinical Trial," *The Lancet Neurology* 5, no. 4 (April 1, 2006): 310–16, [https://doi.org/10.1016/S1474-4422\(06\)70382-9](https://doi.org/10.1016/S1474-4422(06)70382-9).

³⁵ "Acupuncture."

Researchers have also looked into the efficacy of *ah shi* point acupuncture specifically, albeit to a lesser degree than acupuncture as a whole. Nevertheless, the results are promising once again. For example, Son et. al. found that *ah shi* point acupuncture was effective in reducing inflammation and in improving the quality of life of patients with acne vulgaris.³⁶ In this study, Son et. al. recruited 36 subjects, who they randomly assorted into *ah shi* point acupuncture or sham acupuncture 12 times over six weeks. Son et. al. drew the conclusion that *ah shi* point acupuncture was effective on acne vulgaris by using an inflammatory lesion count, a subjective score for symptoms, and a quality-of-life scale as outcome measurements.³⁷ Though we need more trials involving *ah shi* point acupuncture on both acne vulgaris and other diseases, this study sheds a positive light on the possible efficacy of *ah shi* point acupuncture.³⁸

Researchers are also beginning to look into the long-term efficacy of acupuncture as a treatment for multiple diseases. Though the evidence of these trials is slight, one study of the efficacy of acupuncture to provide long-term migraine relief suggests the potential for lasting positive effects from acupuncture.³⁹ In a study concerning the use of acupuncture for long-term migraine relief, researchers Zhao et. al. found that acupuncture

³⁶ Byeong-Kook Son, Younghee Yun, and In-Hwa Choi, "Efficacy of Ah Shi Point Acupuncture on Acne Vulgaris," *Acupuncture in Medicine: Journal of the British Medical Acupuncture Society* 28, no. 3 (September 2010): 126–29, <https://doi.org/10.1136/aim.2010.003004>.

³⁷ Son, Yun, and Choi.

³⁸ Ruimin Jiao et al., "Efficacy of Acupuncture in Improving the Symptoms and the Quality of Life of Patients with Moderate or Severe Acne Vulgaris: Study Protocol for a Randomized Controlled Trial.," *Trials* 21, no. 1 (June 23, 2020): NA-NA, <https://doi.org/10.1186/s13063-020-04346-7>.

³⁹ Ling Zhao et al., "The Long-Term Effect of Acupuncture for Migraine Prophylaxis: A Randomized Clinical Trial," *JAMA Internal Medicine* 177, no. 4 (April 1, 2017): 508–15, <https://doi.org/10.1001/jamainternmed.2016.9378>.

might be associated with long-term reduction of migraines in patients with migraines without auras.⁴⁰ Many more trials, such as trials for long-term relief of knee osteoarthritis pain as well as long-term reduction of tension headaches, are in the works in many different labs.⁴¹

The body of research for acupuncture continues to grow, as more clinical trials add evidence to the efficacy debate. Many clinical trials with larger patient populations are needed in order to ascertain the efficacy of acupuncture for all 107 diseases named by the World Health Organization. As acupuncture shifted from a fully traditional background to a background at least partially embracing biomedicine, the gates to more scientific clinical trials have opened. While the outcomes of acupuncture research sometimes lack consistency, it seems that acupuncture may be effective as a treatment, encouraging more research into the practice.

Dry Needling Clinical Trials

Dry needling is a fairly new practice, which means clinical trials are still relatively scarce. As of 2016, researchers had only conducted about 74 clinical trials.⁴² According to Dunning et. al., there are not enough studies to determine if trigger point

⁴⁰ Zhao et al.

⁴¹ Lingyun Lu et al., "The Long-Term Effect of Acupuncture for Patients with Chronic Tension-Type Headache: Study Protocol for a Randomized Controlled Trial," *Trials* 18, no. 1 (October 3, 2017): 453, <https://doi.org/10.1186/s13063-017-2188-9>. Nan Wu et al., "The Long-Term Effect of Acupuncture for Patients with Knee Osteoarthritis: Study Protocol for a Randomized Controlled Trial," *Medicine* 99, no. 42 (October 16, 2020): e22599, <https://doi.org/10.1097/MD.00000000000022599>.

⁴² Zhu and Most, "Dry Needling Is One Type of Acupuncture."

dry needling should be used in alleviating short-term or long-term pain caused by musculoskeletal disorders.⁴³ Additionally, Dunning et. al. points out that high-quality studies suggest very low inter-examiner reliability for finding trigger points.⁴⁴ This shows that there is little evidence supporting the diagnostic criteria for identification of trigger points.⁴⁵ There is also little evidence as to what the optimal frequency of needling, duration of the needles in situ, and intensity of needling is, causing a lot of dry needling practice to be based on acupuncture findings.⁴⁶

In contrast to traditional acupuncture, the small number of clinical trials available on the efficacy of dry needling has yielded mixed results regarding musculoskeletal pain management. In a trial focused on the relief of myofascial pain, Lewit found positive results, as 86.6% of the 241 patients felt immediate pain relief upon needling.⁴⁷ Lewit also saw that pain relief lasted anywhere from several days after needling to permanent relief in 288 of the 312 pain sites that Lewit needled.⁴⁸ This very early study (1979) suggested dry needling as a very promising pain relief treatment.⁴⁹ However, other studies conducted since that time have contradicted Lewit's study. For example, in a study on the efficacy of dry needling on relieving neck pain, Navarro-Santana et. al. found little to no compelling evidence that dry needling was an appropriate pain

⁴³ Dunning et al., "Dry Needling."

⁴⁴ Dunning et al.

⁴⁵ Dunning et al.

⁴⁶ Dunning et al.

⁴⁷ Lewit, "The Needle Effect in the Relief of Myofascial Pain."

⁴⁸ Lewit.

⁴⁹ Lewit.

management treatment.⁵⁰ In this meta-analysis, Navarro-Santana et. al. compared dry needling to sham, control, no intervention, and other physical therapy intervention groups in order to determine if dry needling could relieve neck pain.⁵¹ Though there was some evidence that supported improvement of pain intensity immediately after the procedure and at short-term follow ups, the evidence was moderate to low and did not show improvement at mid- or long-term follow-ups.⁵² Additionally, the researchers only saw positive effects when comparing dry needling to sham, control, or no intervention groups.⁵³ Dry needling did not seem to decrease pressure sensitivity nor did it seem to improve range of motion of the neck.⁵⁴ Altogether, dry needling might possibly have similar clinical effects as manual or other types of physical therapy, however, the evidence to support this minimalist claim is very low.⁵⁵ Therefore, this study could not conclude that dry needling was an effective treatment for neck pain.⁵⁶

In addition to the paucity of evidence on the efficacy of dry needling, there also seems to be no evidence that dry needling is effective in long-term pain relief. In a meta-analysis, Ristevski found that there was no evidence of a long-term benefit associated

⁵⁰ Marcos J. Navarro-Santana et al., “Effectiveness of Dry Needling for Myofascial Trigger Points Associated with Neck Pain Symptoms: An Updated Systematic Review and Meta-Analysis,” *Journal of Clinical Medicine* 9, no. 10 (October 14, 2020), <https://doi.org/10.3390/jcm9103300>.

⁵¹ Navarro-Santana et al.

⁵² Navarro-Santana et al.

⁵³ Navarro-Santana et al.

⁵⁴ Navarro-Santana et al.

⁵⁵ Navarro-Santana et al.

⁵⁶ Navarro-Santana et al.

with dry needling.⁵⁷ This finding could be due to the fact there are so few dry needling trials, as many of the studies done on dry needling have been meta-analyses or systemic reviews.⁵⁸ So, Ristevski's finding in this meta-analysis does not necessarily mean that there are no long-term benefits to dry needling. However, this study does show a *lack* of compelling evidence thus far, highlighting the need for more long-term studies if we want to understand the lasting effects (if there are any) of dry needling.

A number of factors make it imperative that researchers conduct more dry needling studies.⁵⁹ First, though some of the studies already conducted show positive effects of dry needling, some contradict these findings, making it complicated to determine if dry needling is effective.⁶⁰ Second, because dry needling is relatively new, the clinical trials and meta-analyses that have been conducted thus far also carry many limitations.⁶¹ In these clinical trials, sample size is often a limiting factor, which could cause a false-negative result in the clinical trials, effecting the data significantly.⁶² Third, the low inter-examiner reliability of locating trigger points effects the data of each trial, as the location of the needle insertion presents differently in each patient.⁶³ Fourth, the depth of insertion, in situ times, and number of treatments also differ, causing low

⁵⁷ Ristevski, "Research Studies Show Dry Needling Has No Long-Term Benefits."

⁵⁸ Ristevski.

⁵⁹ Leonid Kalichman and Simon Vulfsons, "Dry Needling in the Management of Musculoskeletal Pain," *The Journal of the American Board of Family Medicine* 23, no. 5 (September 1, 2010): 640–46, <https://doi.org/10.3122/jabfm.2010.05.090296>.

⁶⁰ Kalichman and Vulfsons.

⁶¹ Kalichman and Vulfsons.

⁶² Kalichman and Vulfsons.

⁶³ Kalichman and Vulfsons.

comparability between studies.⁶⁴ In order to get correct information, the depth, duration, number of treatments, and clinical guidelines for finding trigger points should be standardized through extensive research to mitigate limitations caused by these differences. Specifically, some researchers, such as Gattie et. al., call for clinical trials that use realistic treatment durations and techniques that would actually be used in clinical practice, as opposed to the atypical methods often used in dry needling clinical trials.⁶⁵ Addressing these limitations and following these recommendations would allow for a more appropriate evaluation of the effects of dry needling on musculoskeletal pain.⁶⁶

Adverse Events Associated with Acupuncture and Dry Needling

Researchers have also studied the rate of adverse events during acupuncture and dry needling treatments. While both practices seem to have low rates of adverse events, acupuncture has a slightly reduced rate of adverse events than dry needling. In a systematic review, Xu et. al. examined the safety studies surrounding acupuncture and

⁶⁴ Kalichman and Vulfsons.

⁶⁵ Eric Robert Gattie, Joshua A. Cleland, and Suzanne J. Snodgrass, "Dry Needling for Patients With Neck Pain: Protocol of a Randomized Clinical Trial," *JMIR Research Protocols* 6, no. 11 (November 22, 2017): e7980, <https://doi.org/10.2196/resprot.7980>.

⁶⁶ Gattie, Cleland, and Snodgrass.

found that most adverse health events connected to acupuncture have been minor.⁶⁷ No deaths had been recorded connected to acupuncture in all associated studies, which covered over 3 million acupuncture treatments. The main adverse health events involved infection at the insertion site, as bacterial infections spread through healthcare facilities have become common.⁶⁸ The most common serious health event was a collapsed lung. While a pneumothorax is a serious condition, the data indicated that it was exceedingly rare for licensed and qualified acupuncture practitioners.⁶⁹

Within the practice of dry needling, researchers saw adverse health events at a higher rate than that of acupuncture. In a study determining the rate of adverse health events associated with dry needling, Boyce et. al. found that out of all treatments conducted in the study, 36.7% reported minor adverse events.⁷⁰ These adverse events tended to be bruising, bleeding, or pain during the dry needling treatment.⁷¹ The most serious health event associated dry needling was the same as acupuncture, as collapsing a patient's lung is always at least a theoretical risk when needling around the lungs.⁷² The rate at which adverse health events are seen differ between studies and between

⁶⁷ Shifen Xu et al., "Adverse Events of Acupuncture: A Systematic Review of Case Reports," *Evidence-Based Complementary and Alternative Medicine : ECAM* 2013 (2013), <https://doi.org/10.1155/2013/581203>.

⁶⁸ According to the study, these infections were not due to inappropriate sterilization of the acupuncture needles, as this does not seem to be common in acupuncture practice anymore. For more information, see Xu et al.

⁶⁹ Xu et al.

⁷⁰ David Boyce et al., "ADVERSE EVENTS ASSOCIATED WITH THERAPEUTIC DRY NEEDLING," *International Journal of Sports Physical Therapy* 15, no. 1 (February 2020): 103–13.

⁷¹ Boyce et al.

⁷² Boyce et al.

practitioners, as there was no association between practitioner age, years in practice, level of education, amount of training, or level of experience.⁷³ However, since adverse health events are typically quite mild in the case of both acupuncture and dry needling, both practices are generally considered to be safe.⁷⁴

Conclusion

In this chapter I argued that dry needling ought to be understood as a subcategory of acupuncture. Yet, we need to invest in more research because there are relatively few definitive studies on the efficacy of acupuncture and far fewer clinical trials for dry needling. Though some trials seem to show positive outcomes for both acupuncture and dry needling, the sample sizes are quite small and there are typically limitations to the studies. Additionally, a large amount of dry needling data is taken from acupuncture data, causing there to be little data that could allow for researchers to determine clinical outcome differences between the two practices.⁷⁵ Nevertheless, based on the available studies, I have argued that dry needling, although derivative of acupuncture, seems to lack the efficacy of—and is associated with greater adverse effects than—traditional acupuncture.

I now turn to possible explanations for the tension created between the similarities of the practices—as well as the use of acupuncture data in dry needling clinical trials—and the evidence suggesting their differing health outcomes.

⁷³ Boyce et al.

⁷⁴ Boyce et al.; Xu et al., “Adverse Events of Acupuncture.”

⁷⁵ Zhu and Most, “Dry Needling Is One Type of Acupuncture.”

CHAPTER 4

The Handle of the Needle: Explanations for Differentiation of Acupuncture and Dry

Needling

Introduction

The discussion in Chapter 3 strongly suggests that we should consider dry needling a subset of acupuncture. Unsurprisingly, many studies, including those by Zhou et. al. and Peng et. al., strongly suggest that there is no difference between dry needling and acupuncture.¹ After an extensive search of the history and techniques of acupuncture and dry needling, Zhou et. al. concluded that dry needling is in fact a subcategory of acupuncture.² This is because, as shown above, dry needling and acupuncture share technique, stimulation points, and clinical uses. Similarly, Peng et. al. compared these same fundamentals of dry needling and acupuncture and came to the conclusion that dry needling is trigger point acupuncture.³ However, acupuncturists admit to learning and reforming based upon dry needling and biomedicine, as the Council of Colleges of Acupuncture and Oriental Medicine states:

'DN' has resulted in redefining acupuncture and re-framing acupuncture techniques in Western biomedical language. Advancement and integration of medical technique across professions is a recognized progression. However, the aspirations of one profession should not be used to redefine another established profession...It is the position of the CCAOM that these treatment techniques are

¹ Fan, Xu, and Li, "Evidence and Expert Opinions."

² Fan, Xu, and Li.

³ Fan, Xu, and Li.

the de facto practice of acupuncture, not just the adoption of a technique of treatment.⁴

Though the evidence suggests that dry needling is a type of acupuncture and acupuncturists acknowledge the impact of dry needling on their practice, practitioners of dry needling are unwilling to concede that dry needling is a subset of acupuncture. For example, the American Physical Therapy Association (APTA) continues to fight against such an understanding of dry needling.⁵ As per the APTA:

The performance of modern dry needling by physical therapists is based on western neuroanatomy and modern scientific study of the musculoskeletal and nervous system. Physical therapists that perform dry needling do not use traditional acupuncture theories or acupuncture terminology.⁶

As there is no stark difference between the techniques, tools, or clinical uses of both dry needling and acupuncture, the unwillingness of the APTA to accept dry needling as a form of acupuncture must stem from something extrinsic to the practices themselves.

In this chapter, I present three of the most plausible explanations for the insistence of the APTA to deny the connection between acupuncture and dry needling: the American fear of communism, the unwillingness to reform Western education to fit Eastern standards, or some differences in values of the East and the West. It is very likely that these possible explanations—and more—work together to determine the stance of the APTA, as a complete account of the resistance is likely more complicated than one single explanation. However, I treat each explanation independently for heuristic

⁴ Fan, Xu, and Li.

⁵ Fan, Xu, and Li.

⁶ “APTA-PTs-and-Dry-Needling-Resource-Paper.Pdf,” accessed April 14, 2021, <https://www.mptalliance.com/wp-content/uploads/2015/12/APTA-PTs-and-Dry-Needling-Resource-Paper.pdf>. Pg. 5.

purposes. Ultimately, I argue that if dry needling is fundamentally distinct from acupuncture, the value differences between the East and the West differentiate the practices.

Perceived Differences Explained

Communism and Biomedicine

Since the Red Scare in the 1940s-1950s, fear of communism spread in the West, specifically in the United States of America.⁷ This fear of communism directed many choices within the scope of medicine and eventually infiltrated the practice of medicine in 1949, when the American Medical Association led a \$1.5 million campaign against President Truman's national health insurance plan.⁸ This lobbying effort was the largest and most expensive propaganda campaign in American history at the time.⁹ As this campaign was so large, it more than likely reached almost every American, eventually causing Truman's support for his national health insurance plan to fall from 58% to 36% by 1949.¹⁰ Out of this lobbying campaign, an anticommunist sentiment rose, due to the AMA's position that a national health insurance plan was socialized medicine.¹¹ Further, the AMA publicized that Lenin himself described socialized medicine as, "The keystone

⁷ Paul Starr, *The Social Transformation of American Medicine*, Second (New York: Basic Books, 2017). Pg. 280-284.

⁸ Starr.

⁹ Starr.

¹⁰ Starr.

¹¹ Starr.

to the arch of the Socialist State,” despite the Library of Congress’s inability to find the quote in any of Lenin’s writings.¹²

The wide-reaching nature of the AMA’s lobbying efforts against “socialized medicine” left many Americans scared of communism. Because the anti-communist sentiment is still present, it is appropriate to acknowledge that the unwillingness to define dry needling as acupuncture could stem from anti-communist sentiments.¹³ Considering China’s longstanding association with communism, medical practices stemming from China could be feared in the same way that socialized medicine was feared.¹⁴ In this way, the APTA could be upholding the same ideology of the AMA in 1949 as the AMA believed that any adoption of communist or socialist practices could lead to a Socialist State.¹⁵ This is because the fear of communism is deeply ingrained into Western ideology, especially surrounding medicine. The subconscious fear of communism might cause individuals to be closed off from concepts derived from a perceived Socialist State. Though this might not be a direct or conscious motivation for the stubbornness of the

¹² Starr.

¹³ For more information on current anti-communist sentiments in the United States, see John Radzilowski, “Introduction Ethnic Anti-Communism in the United States,” in *Anti-Communist Minorities in the U.S.: Political Activism of Ethnic Refugees*, ed. Ieva Zake (New York: Palgrave Macmillan US, 2009), 1–22, https://doi.org/10.1057/9780230621596_1, and “How Red-Baiting in Medicine Did Lasting Harm to Americans’ Health Care - The Washington Post,” accessed April 14, 2021, <https://www.washingtonpost.com/outlook/2019/06/12/how-red-baiting-medicine-did-lasting-harm-americans-health-care/>.

¹⁴ For more information on communism in China, see “Chinese Communist Party,” obo, accessed April 4, 2021, <https://www.oxfordbibliographies.com/view/document/obo-9780199756223/obo-9780199756223-0218.xml>.

¹⁵ Starr, *The Social Transformation of American Medicine*.

APTA, the subconscious effect of the fear of communism could steer decision makers in the APTA away from redefining dry needling.¹⁶

Education Reform

The second possibility that I propose for the APTA's position on dry needling and acupuncture stems from the idea of the supremacy of Western education. Modern Biomedicine prides itself on being based in science and education.¹⁷ Often, Biomedicine is seen as supreme over "alternative" medicine due to its basis in germ theory, anatomy, and advanced scientific knowledge.¹⁸ Western doctors present themselves in ways that show that they are very well educated and, thus, competent at their healing technique.¹⁹ However, admitting that dry needling is a subcategory of acupuncture would suggest that this sect of Biomedicine is not as advanced as a "folk tradition," possibly decreasing the legitimacy of Biomedicine. This is due to the fact that dry needling certification is greatly lacking, where acupuncture training is extremely thorough and extensive.²⁰

¹⁶ For a recent analysis of implicit (unconscious) bias against Asian-Americans via Project Implicit at Harvard, see Sean Darling-Hammond et al., "After 'The China Virus' Went Viral: Racially Charged Coronavirus Coverage and Trends in Bias Against Asian Americans," *Health Education & Behavior* 47, no. 6 (December 1, 2020): esp. 871, <https://doi.org/10.1177/1090198120957949>.

¹⁷ Bisan Salhi, "Beyond the Doctor's White Coat: Science, Ritual, and Healing in American Biomedicine," in *Understanding and Applying Medical Anthropology*, Third (California: Left Coast Press, 2016), 204–12.

¹⁸ Salhi. On the shift in language from "alternative" to "complementary" medicine, see Jeremy Y. Ng et al., "Making Sense of 'Alternative', 'Complementary', 'Unconventional' and 'Integrative' Medicine: Exploring the Terms and Meanings through a Textual Analysis," *BMC Complementary and Alternative Medicine* 16 (May 20, 2016), <https://doi.org/10.1186/s12906-016-1111-3>.

¹⁹ Salhi, "Beyond the Doctor's White Coat: Science, Ritual, and Healing in American Biomedicine."

²⁰ Zhou, Ma, and Brogan, "Dry Needling versus Acupuncture."

If the APTA were to decide that they see dry needling as acupuncture, education reform would be necessary for dry needling certification courses. The standards of education for dry needling practitioners would have to become similar to the education and training of acupuncture practitioners.²¹ To become an acupuncturist, one must go through formalized education and training, including hundreds of hours in specialized educational programs.²² In the USA specifically, an acupuncturist must have state licensure, must pass the national level exams and must maintain good clinical records.²³ These requirements are mandated by the acupuncture or medical board of each state, who homogenizes accredited training and licensure.²⁴ Dry needling education, however, is not homogenized and is typically taught through a certification course with no acupuncture accreditation.²⁵ These dry needling certification courses vary depending on the institution providing them and there is very little regulation of these non-formal trainings.²⁶

Many acupuncturists fear for the safety of dry needling patients, as dry needling has, “Lax regulation and nonexistent standards surround[ing] this invasive practice.”²⁷ The non-formal training typically leaves physical therapists with less exposure to the practice and less skills in needling.²⁸ This could lead to adverse events caused by dry

²¹ Fan, Xu, and Li, “Evidence and Expert Opinions.”

²² Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

²³ Zhou, Ma, and Brogan.

²⁴ Zhou, Ma, and Brogan.

²⁵ Zhou, Ma, and Brogan.

²⁶ Zhou, Ma, and Brogan.

²⁷ Fan, Xu, and Li, “Evidence and Expert Opinions.”

²⁸ Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

needling, such as pneumothorax, or a collapsed lung, due to a misplaced needle into the lung.²⁹

Just as acupuncturists have taken Biomedical education into their training, learning about Western conceptions of the musculoskeletal system, the biological mechanisms of the body and more, acupuncturists believe that dry needling practitioners should take on some education in Traditional Chinese Medicine.³⁰ This training would allow dry needling practitioners to be more prepared and skilled in needling practices, as well as raise the legitimacy of dry needling.³¹ Also, adding a regulatory body to oversee the licensure of dry needling, as acupuncture already has in place, would bring legitimacy to the practice of dry needling and would help ensure the safety of all patients.³²

However, admitting that acupuncturists are correct in believing that dry needling needs more stringent educational policies could be seen as delegitimizing Biomedicine. There could be an unwillingness to reform education based on a “traditional” practice, as this conflicts with the “modern” value of Biomedicine.³³ Taking criticism in places that the USA believes are its strong suit might cause chafing, leading to a heated debate rather than working together to create the best system of care for patients. In addition, the additional schooling that physical therapists would need to go through, as well as the

²⁹ David Boyce et al., “Adverse Events associated with Therapeutic Dry Needling,” *International Journal of Sports Physical Therapy* 15, no. 1 (February 2020): 103–13.

³⁰ Zhu and Most, “Dry Needling Is One Type of Acupuncture.”

³¹ Zhou, Ma, and Brogan, “Dry Needling versus Acupuncture.”

³² Zhou, Ma, and Brogan.

³³ Salhi, “Beyond the Doctor’s White Coat: Science, Ritual, and Healing in American Biomedicine.”

creation of the regulating body, could be quite expensive and time consuming. The APTA may be unwilling to spend a large amount of time and money on interventions put forward by a traditional ethnomedical system, keeping the APTA from defining dry needling as a type of acupuncture.

Cross-Cultural Value Differences

The last possibility that I will propose as to why the APTA continues to separate dry needling from acupuncture is cross-cultural value differences between the East and the West.³⁴ When acupuncture moved to the West and, as Gunn et. al. argues, the terminology of acupuncture shifted to the terminology of dry needling to fit into the scientific values of Biomedicine, cultural values became more important to the identities of both practices.³⁵ The most relevant difference between the values of the East and the West seems to be the intrinsic or extrinsic nature of the value presented.³⁶ In the East, values are often seen as extrinsic to the individual in that the values are shown relationally.³⁷ For example, an individual is benevolent only when they show benevolence

³⁴ Though globalization, to some extent, has led to the blending of Eastern and Western values, the distinctions between the cultural values of the East and the West are still palpable and worthy of consideration.

³⁵ Zhu and Most, "Dry Needling Is One Type of Acupuncture." For a social identity theory-based approach to the question of national identities and indicators of belonging in the context of contemporary American society, see Elizabeth Theiss-Morse, *Who Counts as an American?: The Boundaries of National Identity* (Cambridge: Cambridge University Press, 2009).

³⁶ Liang-Hung Lin, Yu-Ling Ho, and Wei-Hsin Eugenia Lin, "Confucian and Taoist Work Values: An Exploratory Study of the Chinese Transformational Leadership Behavior," *Journal of Business Ethics* 113, no. 1 (March 1, 2013): 91–103, <https://doi.org/10.1007/s10551-012-1284-8>.

³⁷ Lin, Ho, and Lin.

to another individual. In the West, values and virtues typically stem from the internal.³⁸ Using the example of benevolence again, a Western individual may see benevolence as an innate quality of a person, rather than something extrinsic. This example reflects a collectivist ideology in the East and an individualistic ideology in the West.³⁹

The collectivist ideology of the East is woven into Taoist principles and cultural values. Collectivist societies are often linked to greater empathy and relational goodwill, which aligns with the Taoist value of harmony.⁴⁰ Being in harmony with others and with nature allows for appropriate flow of Qi throughout the body, keeping the individual healthy.⁴¹ The connection with others, and often opponents, is also valued in Taoist culture, as the harmony and balance between Yin and Yang governs “the Chinese way of life.”⁴² Taoism also aligns with non-action, modesty, and non-contention.⁴³ Non-action allows for harmony in that it allows natural processes to occur, however, action must be taken to keep oneself healthy in order to continue toward the Tao.⁴⁴ Modesty is portrayed through submission, to nature or others, and not acting out of self-interest or for glory.⁴⁵

³⁸ Lin, Ho, and Lin.

³⁹ Miriam S. Heinke and Winnifred R. Louis, “Cultural Background and Individualistic–Collectivistic Values in Relation to Similarity, Perspective Taking, and Empathy,” *Journal of Applied Social Psychology* 39, no. 11 (2009): 2570–90, <https://doi.org/10.1111/j.1559-1816.2009.00538.x>.

⁴⁰ Heinke and Louis.

⁴¹ Yu-chih Chen, “Chinese Values, Health and Nursing,” *Journal of Advanced Nursing* 36, no. 2 (2001): 270–73, <https://doi.org/10.1046/j.1365-2648.2001.01968.x>.

⁴² Chen.

⁴³ Lin, Ho, and Lin, “Confucian and Taoist Work Values.”

⁴⁴ Pregadio, “Religious Daoism.”

⁴⁵ Lin, Ho, and Lin, “Confucian and Taoist Work Values.”

Lastly, non-contention helps to keep relational interactions modest and harmonious by negating arguments between two parties.⁴⁶

Though there are many more cultural and religious values associated with Taoism, the values of empathy, harmony, non-action, modesty, and non-contention seem to be especially applicable to medicine, and thus, acupuncture. Because of the close link between Taoism and traditional Chinese medicine, the above Taoist values inform the acupuncturist in their practice, especially their relationship with the patient: the practitioner merely takes the lead by inviting the patient to participate in their own healing. The compliant patient then joins the practitioner on the same “healers” level, allowing for a harmonious relationship.⁴⁷ A comfortable relationship between the patient and the practitioner can allow for better health outcomes, due mostly to placebo effect,⁴⁸ and can help to reduce anxiety about the procedure.⁴⁹ There is an understanding between the patient and the practitioner that the practitioner is not healing the patient, but that the practitioner is correcting the flow of Qi in the body.⁵⁰ In this way, the patient heals themselves, eliminating or reducing the power dynamic that might be present if the practitioner believes they are healing the patient, such as in the Western Biomedicine

⁴⁶ Lin, Ho, and Lin.

⁴⁷ Chen, “Chinese Values, Health and Nursing.”

⁴⁸ The placebo effect occurs when a patient experiences a beneficial effect that is not the effect of the treatment that the individual receives. For more information, see Gunver S Kienle and Helmut Kiene, “The Powerful Placebo Effect: Fact or Fiction?,” *Journal of Clinical Epidemiology* 50, no. 12 (December 1, 1997): 1311–18, [https://doi.org/10.1016/S0895-4356\(97\)00203-5](https://doi.org/10.1016/S0895-4356(97)00203-5).

⁴⁹ Chen, “Chinese Values, Health and Nursing.”

⁵⁰ Trushina, “The Impact of the Foundations of Taoism on the Development of Oriental Medical Practices.”

model. The skillful practitioner shows modesty and non-contention by keeping any thoughts of authority out of their practice, allowing for a healthy, natural healing environment.

Western values often conflict with Eastern values, focusing on individualism, knowledge, and modernity. Individualism inspires doing actions on your own behalf for your self-interests, opposing the Taoist values of non-action and modesty.⁵¹ Individualism often inspires hard work and an emphasis on keeping busy in order to show your worth. The hard work of many individuals allows for knowledge to be a Western value as well, as the work of many Western scientists brought about the advancements that Biomedicine has to offer. The symbolic value of education and science in Biomedicine led to the popular ideology that Biomedicine is the best available healing system, while other ethnomedical systems are traditional folk healing systems.⁵² Thus, the values of modernity and education simultaneously legitimizes Biomedicine and discredits ethnomedical systems.⁵³ Additionally, the Western value of cutting edge technology seems to set a supposed precedent for other countries, as many individuals believe that other countries strive to achieve what the West has achieved.⁵⁴ In sum, the West has set up Biomedicine as the supreme healing system, causing some unwillingness to recognize

⁵¹ Qing Liu, "The Cultural Dilemma in the Process of Uniting Chinese and Western Medicine from 1940 to 1950," *The Journal of Chinese Sociology* 6, no. 1 (February 8, 2019): 4, <https://doi.org/10.1186/s40711-019-0092-2>.

⁵² Salhi, "Beyond the Doctor's White Coat: Science, Ritual, and Healing in American Biomedicine."

⁵³ Liu, "The Cultural Dilemma in the Process of Uniting Chinese and Western Medicine from 1940 to 1950."

⁵⁴ Richard Burt, *In Defense of Western Values* :February 5, 1982. (Washington, D.C. :, 1982), <http://hdl.handle.net/2027/umn.31951002890346n>.

when the West has adopted Eastern practices, even in instances where they clearly have done just that.

Considering all available data, it seems highly likely that Western values play a large part in why dry needling and acupuncture are seen as different.⁵⁵ The values prized by the West not only keep dry needling from being viewed as acupuncture, but these values also profoundly affect the practice of dry needling in ways that discredit its mother discipline. While individualism encourages hard work and a sense of pride in your work, it can also lead to the understanding that the practitioner is healing the patient. Biomedicine is actually set up to make the patient believe that they are being healed, as the practitioner is set up as the authority figure.⁵⁶ The white coat, the diploma on the wall, the ritually cleaned practice space, and more, symbolizing educational authority—and thus power—of the practitioner over the patient, pre-determining the nature of the practitioner-patient relationship.⁵⁷ While these symbols often lead to increased patient trust, they can also lead to doctors overusing their authority, ignoring the patient's wishes, needs, or questions, and a general degradation of patient autonomy.⁵⁸ The power dynamic created in a Western practitioner-patient relationship could have adverse health effects depending on the severity of the power dynamic.⁵⁹ The value of modernity in

⁵⁵ Zhou, Ma, and Brogan, "Dry Needling versus Acupuncture."

⁵⁶ Salhi, "Beyond the Doctor's White Coat: Science, Ritual, and Healing in American Biomedicine."

⁵⁷ Salhi.

⁵⁸ Salhi.

⁵⁹ See further, Laura Nimmon and Terese Stenfors-Hayes, "The 'Handling' of Power in the Physician-Patient Encounter: Perceptions from Experienced Physicians," *BMC Medical Education* 16 (April 18, 2016), <https://doi.org/10.1186/s12909-016-0634-0>.

Western societies separate Biomedicine from other healing systems, as Biomedicine is rooted in modern biological understandings of the body, while traditional healing systems are not.⁶⁰

Conclusion

Out of all three possibilities, cross-cultural value differences seem to be the best option for the discussion of fundamental changes to the practice and outcomes of dry needling from that of acupuncture. This is because the internalized nature of cultural values in each practitioner could affect both practices and how they are performed. Cultural values must be considered as they inform many of our decisions. We cannot separate Taoist values from acupuncture without damaging the integrity of the practice.⁶¹ Likewise, Western medicine infuses dry needling with Western values.

The value differences between cultures, the unwillingness to reform dry needling education, and the fear of communism all more than likely work together to create stubbornness within the APTA. While there are probably other confounding factors in the APTA's decision to declare dry needling different than acupuncture, I found the above possibilities as the most salient reasonings. These are very important to consider, especially in light of the anti-Asian American and Pacific Islander racism that is running rampant through American society. We must consider uncomfortable topics in order to encourage the deconstruction of practices that many see as cultural appropriation.

⁶⁰ Zhu and Most, "Dry Needling Is One Type of Acupuncture."

⁶¹ Recall that acupuncture was made prominent by Taoist physicians and Taoism itself is a fundamental of Chinese society. See Pregadio, "Religious Daoism."

However, much more research is required in order to determine whether there truly is a difference between the two practices, as I will now discuss.

CONCLUSION

The Tail of the Needle: Conclusions and Further Study

In this thesis, I have investigated the Westernization of the Eastern practice of acupuncture through dry needling as well as the debate surrounding the two practices. In chapter 1, I outlined the origin and technique of acupuncture to give context to the ongoing debate. For further contextualization, in Chapter 2, I summarized the origins and technique of dry needling as well. In Chapter 3, I turned the conversation comparative, looking at the similarities between acupuncture and dry needling in practice as well as in clinical trials. In Chapter 4, I acknowledged the resistance of the American Physical Therapy Association to categorize dry needling as a subcategory of acupuncture, giving three possible explanations as to the APTA's stance.

As the debate between physical therapists and acupuncturists continue on, this thesis serves as another source that will hopefully help lead to consensus and equity in the future. Through a discussion of acupuncture as both a clinical and religious practice, it is evident that the spiritual practices of Taoism are deeply engrained into acupuncture. This being said, it is not surprising that dry needling, though based in biomedicine, may be seen as cultural appropriation, as dry needling took the practice of acupuncture and removed the religious aspects. As seen in Chapter 3 through a comparison of the technical aspects of both practices as well as an assessment of their clinical trials, the similarities between the two practices are indisputable, showing that dry needling should fall under the jurisdiction of acupuncture. In this way, the Western emphasis on the

difference between the two practices seems to stem rhetorically from a fear of difference, whether that be the fear of communism, the unwillingness to reform American education to Eastern standards or the cross-cultural differences between the two practices.

Altogether, I believe the debate between acupuncturists and dry needling practitioners could be better resolved with an increased number of clinical trials in order to show how the Westernization of an Eastern practice may change clinical outcomes.

Though the origins of dry needling and acupuncture differ, it comes as no shock that these two needling practices are quite similar. However, both of these practices require a more in-depth range of clinical trials in order to better understand whether certain value differences between the East and the West fundamentally differentiate dry needling from acupuncture, both in terms of protocols and outcomes. Further study is important because, if dry needling is in fact a subcategory of acupuncture, it must be held to the same standards of care as acupuncture as a matter of medical ethics.

I propose at least three different avenues for further study based on central arguments of this thesis. First, we need to know more about the efficacy of acupuncture and dry needling. Studies into the efficacy and applicability of both practices are necessary in order to create better clinical guidelines for when to prescribe dry needling or acupuncture treatment. These studies will help to increase the quality of care that patients receive by increasing the specificity of the intervention, in terms of the appropriate duration, intensity, and number of treatments of needling that best help with the ailments of different diseases. Essentially, more research is needed to empower clinicians to provide the best care possible to their patients. Better knowledge of clinical

outcomes may also help clarify obstacles and prompt study into understanding the cause of the discrepancies.

Second and relatedly, considering dry needling's roots in acupuncture, we need to focus greater attention on the rhetorical implications of the Westernization of a practice originating from traditional Chinese medicine. If, as I have argued, the translation of acupuncture into "dry needling" stripped the practice of its guiding principles rooted in Taoist philosophy, more work is essential for understanding whether the loss of those moorings accounts for the potential differences in efficacy between the two practices and how to remedy them.

Third, in addition to the above studies, I believe it will be important to explore the value of collaboration between these dysfunctional medical relatives, who surely have much to teach each other. And yet, while such collaboration would benefit the public, it is important to understand the potential implications of such collaborations on the livelihood of Asian acupuncturists before moving forward. While I believe that such collaboration would increase the legitimacy of dry needling, it seems plausible that it might take revenue from acupuncturists, the majority of whom are Asian or Asian-American.¹ This hypothesis seems probable, especially considering acupuncture's designation as "alternative medicine" while dry needling benefits from the established reputation of physical therapy (at least among proponents of the biomedical model). In order to promote racial and ethnic equity, researchers must look into whether

¹ Even as I write this, we are experiencing a surge of anti-Asian rhetoric and deadly violence as a direct result of political rhetoric blaming China for the pandemic. On which, see Darling-Hammond et al., "After 'The China Virus' Went Viral," 870–79.

collaboration between dry needling practitioners and acupuncturists will cause Americans to move to dry needling over acupuncture.

Though the Westernization of acupuncture through dry needling is a salient example of Westernization itself, this process has occurred in many other practices, leaving many minority groups out of their own cultural practice. Taking over a religious and cultural practice of another shows a pervasive attitude of Western superiority, leading to anti-minority sentiments ingrained into our infrastructure and practices. As shown through the possible explanations for the separation of acupuncture from dry needling, the justifications for the differentiation between acupuncture and dry needling very likely emerges from anti-Asian attitudes. To this end, I hope that this thesis will spark thoughtful dialogue on how we can move the needle toward greater cultural humility and appreciation, especially regarding medical practices that have been effectively utilized for thousands of years. There is more to needling than the needle. If we can move beyond the needle itself to consider the values that direct dry needling and acupuncture, we just might cultivate a more informed and equitable healthcare system along the way.

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