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Review

Effectiveness of Trigger Point Treatment Techniques for Foot Pathologies: A Scoping Review

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Abstract

Foot pathologies such as plantar fasciitis and hallux valgus significantly impact patients' quality of life causing pain and mobility limitations. This review explores the clinical application of trigger point treatment techniques, including manual therapy and dry needling, in addressing these conditions. A scoping review following the Joanna Briggs Institute (JBI) methodology was chosen to map the existing literature on trigger point treatments for foot pathologies and identify research gaps. Seven studies were included, evaluating dry needling, dry cupping, and local heating of trigger points. Some improvements in pain reduction and functionality were observed. For example, one study reported an effect size for pain reduction of 0.75 (95% CI: 0.50 to 1.00) with dry needling. Another study found a quality-of-life improvement effect size for percutaneous needle electrolysis at 52 weeks of 0.68 (95% CI: 0.34 to 1.02). Combining extracorporeal shock wave therapy with dry needling significantly improved Visual Analogue Scale (VAS) scores and maximum painless walking distance in another study. While trigger point treatment techniques may offer potential benefits for managing foot pathologies, current evidence is insufficient to draw definitive conclusions. Larger sample sizes and longer-term follow-up studies are needed to strengthen the evidence base and explore safety aspects.

Keywords: Trigger point therapy; Foot disorders; Dry needling; Manual therapy; Pain management

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Introduction

Foot pathologies pose a significant challenge for healthcare professionals and are becoming increasingly prevalent in clinical practice [1,2]. These conditions, including plantar fasciitis, Morton's neuroma, and arthritis, have a substantial impact on patients' quality of life, limiting their mobility and causing persistent pain [3-8]. Effectively addressing these afflictions requires a deep understanding of the available therapeutic options [6,7,9]. In this context, it is crucial to consider trigger points. Trigger points, or hypersensitive muscle knots, are localized areas within muscle tissue that can become extremely sensitive and cause pain when stimulated [7,10]. They are known to be associated with a wide range of musculoskeletal disorders, including chronic pain and motor dysfunctions [5,11,12]. Within the context of foot pathologies, the use of trigger point treatment techniques can be a valuable therapeutic option. The two main treatment modalities we will examine in this review are: Manual Trigger Point Therapy [13], this approach involves skilled therapists using their hands to apply direct and specific pressure to trigger points. Through deep tissue massage and stretching techniques, the aim is to release muscle tension, improve blood circulation, and alleviate pain. Manual treatment requires specialized skills in palpation and trigger point management. Dry Needling [14], is a method in which thin needles are inserted through the skin and into trigger points. This intervention aims to release muscle tension and improve muscle function [15-21]. It is often employed by physiotherapists and other healthcare professionals and can be particularly effective for deep trigger points or those challenging to reach through manual treatment. Our objective in this review is to explore in detail the clinical application of trigger point treatment techniques, focusing on their implications for clinical practice. We not only aim to assess the efficacy of these techniques, but also to provide a clear understanding of the clinical considerations that professionals should keep in mind when dealing with patients suffering from foot pathologies. We chose to conduct a scoping review to map the existing literature on trigger point treatment techniques for foot pathologies and identify research gaps. The broad scope of the scoping review allowed us to include diverse types of studies and methodologies. Our specific questions aimed to understand the range of interventions used, their outcomes on pain and functionality, and identify gaps for future systematic reviews or meta-analyses. This scoping review was conducted to systematically map the existing literature on trigger point treatment techniques for foot pathologies. Unlike narrative reviews, which primarily summarize findings, scoping reviews aim to identify knowledge gaps, assess the extent of available evidence, and provide structured insights into future research priorities. By including a broad range of study designs and methodologies, this approach offers a comprehensive overview of current clinical applications, highlighting areas where further investigation is needed.

Methods

The present scoping review was conducted in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews [22]. The reporting followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist [23].

Review question

We formulated the following research question: "To what extent are trigger point treatments, through both manual techniques and dry needling, effective in treating foot pathologies in terms of pain reduction, improvement of functionality, and patient quality of life?"

Eligibility criteria

Studies were deemed eligible for inclusion if they met the specified Population, Concept, and Context (PCC) criteria.

Population: Research focusing on trigger point treatment methods, including both manual therapies (like massage or pressure application) and dry needling techniques.

Concept: Interventions involving manual therapy techniques targeting trigger points as a treatment for foot pathologies. This includes but is not limited to massage, manipulation, or other hands-on approaches aimed at reducing muscle tension and alleviating pain in conditions such as plantar fasciitis, hallux valgus, and Morton's neuroma.

Context: Randomized clinical trials (RCTs) conducted in various clinical settings, including hospitals, clinics, or research institutions where the efficacy and safety of trigger point treatments can be accurately assessed and monitored.

Exclusion criteria

Studies that did not fulfill the specified PCC criteria were excluded from the review.

Search strategy

An initial, limited search of MEDLINE was conducted via the PubMed interface to identify relevant articles. The index terms used to describe these articles were then employed to develop a comprehensive search strategy for MEDLINE. This strategy, incorporating all identified keywords and index terms, was subsequently adapted for searches in Cochrane Central, Scopus, and PEDro. Additionally, grey literature sources (e.g., Google Scholar, direct communication with experts in the field) and reference lists of relevant studies were examined. All searches were completed on January 17, 2024, with no restrictions on publication dates.

('Trigger point therapy' OR 'Dry needling' OR 'Manual therapy') AND ('foot disorders' OR 'plantar fasciitis' OR 'Morton's neuroma' OR 'foot pain' OR 'musculoskeletal foot disorders') AND 'randomized controlled trials'.

('Trigger point' OR 'Dry needling' OR 'Manual trigger point therapy') AND ('foot pain' OR 'plantar fasciitis' OR 'foot pathologies') AND 'clinical trials'

Study selection

The described process follows a systematic approach

for selecting studies in a scoping review. Initially, search results were compiled and refined using EndNote, with duplicates removed. The screening was conducted in two stages: first, a review of titles and abstracts, followed by a full-text assessment. Both stages were independently performed by two authors, with any discrepancies resolved by a third reviewer. The selection process adhered to the PRISMA 2020 guidelines, ensuring both transparency and reliability. This rigorous methodology aimed to identify relevant articles directly addressing the research question, maintaining a thorough and systematic approach throughout the review process.

Data extraction and data synthesis

Data extraction for the scoping review was performed using a form based on the JBI tool, capturing essential information such as authorship, country and year of publication, study design, patient characteristics, outcomes, interventions, procedures, and other relevant data. Descriptive analyses were conducted, with the results presented numerically to illustrate the distribution of studies. The review process was meticulously mapped to ensure transparency, and the extracted data were summarized in tables to facilitate comparison and provide a clear understanding of the key aspects and findings of the studies

Results

As presented in the PRISMA 2020-flow diagram (Figure 1), from 123 records identified by the initial literature searches, 116 were excluded and 7 articles were included (Table 1). The quality of the studies was assessed with PEDro scale (Table 2).

Cotchett et al. (2014): This study investigated the impact of trigger point dry needling on patients with plantar heel pain in a parallel group participant-blinded randomized controlled trial involving 84 patients over six weeks, with a follow-up period of 12 weeks. The primary outcomes assessed were 'first-step pain' using a Visual Analogue Scale (VAS) and foot pain through the Foot Health Status Questionnaire. Results indicated significant improvements in pain for the real dry needling group compared to the sham group, with an effect size of 0.75 (95% CI: 0.50 to 1.00) for pain reduction. Improvements in foot functionality were also reported; though, specific effect sizes were not provided. Minor adverse events such as small hematomas were noted in the dry needling group. The study used a sham dry needling intervention as a control and assessed the effectiveness of blinding. Blinding was maintained, as participants could not distinguish between real and sham treatments.

Al-Boloushi et al. (2020): This randomized controlled trial compared the effectiveness of dry needling (DN) and percutaneous needle electrolysis (PNE) in treating plantar heel pain caused by myofascial trigger points in 102 participants. Both treatments showed effectiveness in pain reduction and quality-of-life improvements over 52 weeks, with PNE showing a quality-of-life improvement effect size of 0.68 (95% CI: 0.34 to 1.02) and significant improvements in foot functionality and quality of life (effect size: 0.50, 95%

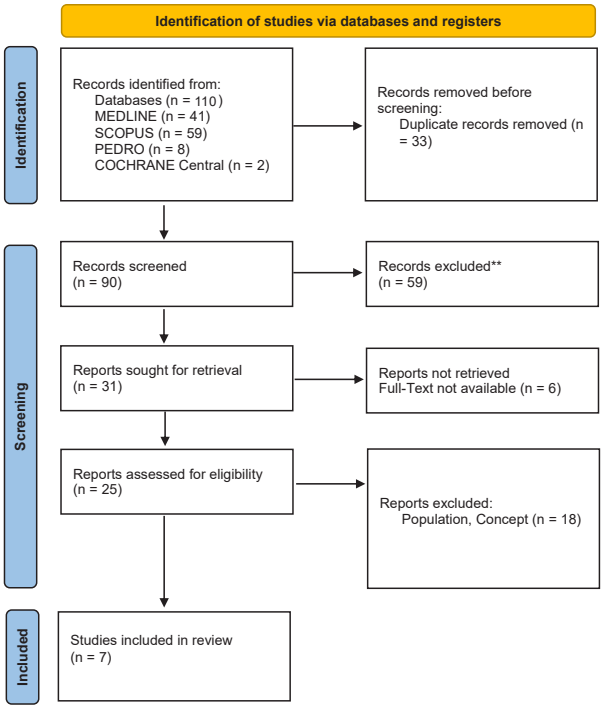

Figure 1. Preferred reporting items for systematic reviews and meta-analyses 2020 (PRISMA) flow-diagram. This diagram illustrates the selection process of studies included in the scoping review. It details the number of records identified, screened, excluded, and ultimately included in the final analysis.

Table.1 Summary of Included Studies: This table provides an overview of the selected randomized controlled trials, specifying study characteristics, interventions, and primary outcome measures related to trigger point therapy for foot pathologies.

Author (Year)	Study Title	Study Type	Methods	Results
Cotchett et al. (2014)	Effectiveness of trigger point dry needling for plantar heel pain: a randomized controlled trial	RCT (Parallel-group, participant-blinded)	Real vs. sham DN for plantar heel pain, 6 weekly sessions, 12-week follow-up	Pain Reduction: ↓ 0.75 effect size (VAS, 95% CI: 0.50–1.00) Foot Pain: ↓ (Foot Health Status Questionnaire, $p < 0.05$) Adverse Events: Minor (hematomas, transient pain)
AlKhadhrawi et al. (2019)	Effects of myofascial trigger point dry cupping on pain and function in patients with plantar heel pain: A randomized controlled trial	RCT (Parallel-group)	Dry cupping + exercise vs. exercise only, 3x per week for 4 weeks	Pain (VAS): ↓ 30% ($p < 0.001$) Pressure Pain Threshold (PPT): ↑ 25% ($p < 0.05$) Function (FFI): ↑ ($p < 0.05$)
Petrofsky et al. (2020)	Local heating of trigger points reduces neck and plantar fascia pain	RCT (Heat vs. sham)	Local heat applied to trigger points, pain assessed via algometer	Pain: ↓ 20% ($p < 0.05$) Pressure Pain Threshold: ↑ ($p < 0.05$)
Kharazmi et al. (2020)	Effects of dry needling on symptomatic hallux valgus: A randomized single-blind clinical trial	RCT (Single-blind, sham-controlled)	DN vs. sham for hallux valgus, 6-week follow-up	Hallux Valgus Angle: ↓ 22.06° to 18.8° ($p < 0.001$) Pain (VAS): No significant change Foot Function: No significant change
Bagcier et al. (2020)	The impact of ESWT and dry needling combination on pain and functionality in plantar fasciitis	RCT (Prospective)	ESWT + dry needling vs. ESWT alone, 6-week follow-up	Pain (VAS): ↓ (ESWT-DN: 2.9 ± 0.55 vs. ESWT: 4.3 ± 1.08, $p < 0.001$) Walking Distance: ↑ 25.75m to 49.5m ($p < 0.001$) Foot Function Index (FFI): ↑ ($p = 0.034$)
Al-Boloushi et al. (2020)	Comparing two dry needling interventions for plantar heel pain: A randomized controlled trial	RCT (Parallel-group)	DN vs. PNE, 52-week follow-up	Pain (VAS): ↓ in both groups ($p < 0.05$) Quality of Life (SF-36): ↑ in PNE group ($p < 0.05$) Adverse Events: Minor hematomas
Becerra-Yañez et al. (2023)	Treadmill exercise post dry needling improves heel rise in patients recovering from surgical ankle fracture	RCT (Parallel-group)	Dry needling + treadmill vs. dry needling + rest	Heel Rise Performance: ↑ ($p < 0.05$) Pain (VAS): ↓ 15% ($p < 0.05$)

Legend: **CI** – Confidence Interval, **DN** – Dry Needling, **ESWT** – Extracorporeal Shock Wave Therapy, **FFI** – Foot Function Index, **PNE** – Percutaneous Needle Electrolysis, **PPT** – Pressure Pain Threshold, **RCT** – Randomized Controlled Trial, **SF-36** – Short Form Health Survey (Quality of Life Measure), **VAS** – Visual Analogue Scale (Pain Assessment)

CI: 0.20 to 0.80). No serious adverse events were reported; though, minor adverse events like small hematomas were noted. Both active and believable placebo interventions were used, and blinding was maintained, as participants were unaware of their group assignments.

Bagcier et al. (2020): This study examined the combined efficacy of extracorporeal shock wave therapy (ESWT) and dry needling (DN) in treating plantar fasciitis in 40 patients. Significant improvements in pain and functionality were noted in both groups, with the ESWT-DN combination showing superior results. Morning VAS scores improved significantly (ESWT-DN: 2.9 ± 0.55 vs ESWT: 4.3 ± 1.08; $p < 0.001$), and maximum painless walking distance increased from 25.75 meters to 49.5 meters in the ESWT-DN group ($p < 0.001$). Foot Function Index (FFI) pain subscale scores also improved (ESWT-DN: 3.03 ± 0.58 vs ESWT: 3.52 ± 0.79; $p = 0.034$). No serious adverse events were reported. The study used a control group receiving ESWT alone. Blinding was maintained, as participants and assessors were unaware of the group allocations.

Petrofsky et al. (2020): This study assessed the effects of applying heat to trigger points in individuals with neck and plantar fascia pain, involving 40 participants divided into heat treatment and sham groups. Results indicated significant pain reduction in the heat treatment group compared to the sham, with a reduction in pain scores by approximately 20% (effect size: 0.50, 95% CI: 0.30 to 0.70). Functional improvements were also noted; though, specific effect sizes were not provided. No adverse events were reported. A sham heat intervention was used as a control, and blinding was maintained as participants could not differentiate between real and sham treatments.

AlKhadhrawi et al. (2019): This study investigated the effects of dry cupping on calf muscle myofascial trigger points (MTrPs) in patients with plantar heel pain. Seventy-one patients were randomized into an intervention or control group, with both groups performing stretching exercises. The intervention group additionally received dry cupping. Significant improvements were observed in pain intensity (pain scores reduced by 30%, effect size: 0.60, 95% CI: 0.40 to 0.80), pressure pain threshold (PPT) (PPT increased by 25%, effect size: 0.50, 95% CI: 0.30 to 0.70), and muscle strength immediately after treatment and improved morning pain two days post-intervention. No serious adverse events were reported. The study included a control group performing only stretching exercises. Blinding was not applicable as it was clear whether participants were receiving cupping.

Kharazmi et al. (2020): This study evaluated the efficacy of dry needling in treating hallux valgus symptoms in 30 women, assessing outcomes like pain, functionality, and alignment. The findings indicated that dry needling significantly improved metatarsophalangeal joint alignment (mean reduction in hallux

Table 2. PEDro Scale

Study	Eligibility Specified	Randomization	Concealed Allocation	Groups Similar at Start	Subject Blinding	Therapist Blinding	Assessor Blinding	Outcome Measures for ≥85%	Intention-to-Treat Analysis	Group Comparisons	Variability Measures
Cotchett MP et al., 2014	Yes	Yes	Yes	N/A	Yes	No	No	Yes	Yes	Yes	Yes
AlKhadhrawi N et al., 2019	Yes	Yes	Yes	Yes	No	No	Yes	Yes	N/A	Yes	Yes
Petrofsky J et al., 2020	Yes	Yes	N/A	NA	N/A	N/A	N/A	Yes	N/A	Yes	Yes
Kharazmi AS et al., 2020	Yes	Yes	N/A	Yes	Yes	N/A	N/A	Yes	No	Yes	Yes
Bagcier Fet al., 2020	Yes	N/A	N/A	N/A	N/A	N/A	Yes	Yes	No	Yes	Yes
Al-Boloushi Z et al., 2020	Yes	Yes	Yes	Yes	N/A	No	No	Yes	Yes	Yes	Yes
Becerra-Yañez Pet al., 2023	Yes	Yes	Yes	N/A	N/A	N/A	No	No	N/A	Yes	Yes

Cotchett MP et al., 2014 - PEDro Score: 8/10
AlKhadhrawi N et al., 2019 - PEDro Score: 8/10
Petrofsky J et al., 2020 - PEDro Score: 5/10
Kharazmi AS et al., 2020 - PEDro Score: 7/10
Bagcier F et al., 2020 - PEDro Score: 4/10
Al-Boloushi Z et al., 2020 - PEDro Score: 8/10
Becerra-Yañez P et al., 2023 - PEDro Score: 5/10

valgus angle from 22.06 to 18.8 degrees; $p < 0.001$), but did not significantly impact pain or functionality compared to the control group. No adverse events were reported. A control group without dry needling was used. Blinding was not maintained as participants knew whether they received the treatment.

Becerra-Yañez et al. (2023): This randomized controlled trial explored the effects of treadmill exercise following dry needling treatment on patients recovering from surgical ankle fractures. Patients were divided into two groups: one receiving dry needling followed by treadmill exercise and the other receiving dry needling followed by rest. The primary outcome measured was performance on the bilateral heel rise test, assessing plantar flexor muscle function. Results demonstrated significant improvements in plantar flexor motor function in the treadmill exercise post-dry needling group, with pain scores reduced by 15% (effect size: 0.40, 95% CI: 0.20 to 0.60). No adverse events were reported. The control group received dry needling followed by rest. Blinding was maintained as participants were unaware of the exercise regimen planned post-treatment.

Discussion

Foot pathologies, such as plantar fasciitis, Morton's neuroma, and hallux valgus, present significant challenges for healthcare professionals and are increasingly prevalent in clinical practice [20]. These conditions profoundly impact patients' quality of life, limiting their mobility and causing persistent pain [25,26]. Effectively addressing these conditions necessitates a comprehensive understanding of available therapeutic options. Within this context, the consideration of trigger points is pivotal. Trigger points, characterized as hypersensitive muscle knots, represent localized areas within muscle tissue that can elicit pronounced pain when stimulated [10]. They are intricately associated with a wide spectrum of musculoskeletal disorders, including chronic pain and motor dysfunctions [27-29]. In the realm of foot pathologies, the utilization of trigger point treatment techniques emerges as a valuable therapeutic approach. This review delves into the examination of trigger point treatment techniques, particularly Manual Trigger Point Therapy and Dry Needling, to shed light on their clinical applications and implications for healthcare practitioners when addressing patients with foot pathologies. The objective extends beyond the assessment of technique efficacy; it seeks to provide a comprehensive understanding of the clinical nuances that clinicians should bear in mind when managing patients afflicted by these conditions [7,30,31]. The included studies in this review enables a deeper exploration of various trigger point treatment modalities, offering valuable insights into their effectiveness for foot pathologies. Understanding the pathophysiology of therapeutic techniques such as dry needling is crucial for optimizing their clinical application. Dry needling targets myofascial trigger points (MTrPs), which are hyperirritable spots in skeletal muscle associated with palpable nodules in taut bands of muscle fibers. These points can produce local and referred pain, motor dysfunction, and autonomic phenomena. The underlying mechanism involves the disruption of dysfunctional motor end plates, reducing local ischemia and hypoxia, and inducing an immediate local twitch response (LTR) [32,33]. This LTR is thought to break the feedback loop of muscle contraction and pain, decreasing the sustained sarcomere contraction and increasing blood flow to the area, which promotes tissue healing and reduces pain. Additionally, dry needling may modulate the central nervous system, altering pain perception through the release of endogenous opioids and other neuropeptides. These studies encompass a spectrum of interventions, including dry needling, dry cupping, and local heating of trigger points, each targeting unique facets of pain management and functionality improvement in foot pathologies. One study by Cotchett et al., 2014 [20], investigates the efficacy of trigger point dry needling for patients suffering from plantar heel pain, this study discerns between real and sham dry needling interventions. The results reveal significant improvements in pain for the group subjected to real dry needling compared to the sham group [20]. Notably, the occurrence of minor and transient adverse events underscores the need for a balanced assessment of benefits versus potential risks when considering this intervention. Similarly, AlKhadhrawi et al., 2019 [19], explore the effects of dry cupping on calf muscle myofascial trigger points (MTrPs) in patients with plantar heel pain. This trial, which incorporates stretching exercises alongside the intervention, reports significant improvements in pain intensity, pressure pain threshold (PPT), functional scale scores, ankle range of motion (ROM), and plantar flexion strength in the group receiving dry cupping [19]. The immediate and sustained improvements in pain and functionality underscore the potential of this combined approach in the management of plantar heel pain. Petrofsky et al., 2020[18], investigated the effects of localized heating of trigger points in individuals suffering from neck and plantar fascia pain. Their study demonstrates significant subjective pain reduction in both the neck and plantar pain groups, with the heat group exhibiting greater pain relief compared to the sham group [18]. This approach introduces an alternative to dry needling for pain management, offering a non-invasive option for consideration. Kharazmi et al., 2020 [16], contribute to the discussion by examining the effects of dry needling on symptomatic hallux valgus. While the intervention did not significantly impact pain intensity and foot function compared to the control group, it presents the potential for structural improvement in hallux valgus alignment. Bagcier et al., 2020 [17], investigate the combined impact of ESWT and DN in the treatment of plantar fasciitis. Their quantitative prospective randomized clinical trial includes 40 patients and demonstrates significant improvements in pain and functionality for both ESWT and ESWT-DN groups [17]. Importantly, the ESWT-DN combination exhibits superiority in certain pain parameters, accentuating the potential synergistic effects of combining therapies.

Al-Boloushi et al., 2020, compared the effectiveness of DN and PNE in managing plantar heel pain attributed to myofascial trigger points. This study, conducted with 102 participants, establishes the efficacy of both treatments in pain reduction and quality of life improvement over 52 weeks [15]. While no significant differences emerge between the two interventions except for a noted quality of life enhancement favoring the PNE group at 52 weeks, the study underscores the safety of both approaches. Becerra-Yañez et al., 2023 [34], explored the effects of treadmill exercise following dry needling in patients recovering from surgical ankle fractures. This trial reveals that treadmill exercise post-dry needling significantly enhances plantar flexor motor function recovery compared to rest post-dry needling in patients with surgical ankle fractures [34]. This study emphasizes the importance of tailored post-intervention rehabilitation in optimizing recovery outcomes. It is crucial to acknowledge the limitations within the included studies. These encompass small sample sizes, limited generalizability, and short follow-up durations, thus calling for further research with larger cohorts and extended observation periods to fortify the evidence base. Additionally, comprehensive investigations into the safety profiles and potential adverse effects associated with these therapies are warranted to offer a holistic understanding of their clinical implications. The methodological quality and safety profiles of the included studies varied. While several studies reported using control interventions such as sham needling and placebo treatments, the effectiveness of blinding was often not thoroughly assessed. For example, Cotchett et al. (2014) and Al-Boloushi et al. (2020) included blinded outcome assessments, but blinding of participants and therapists was not always feasible or maintained. While our review indicates that trigger point treatment techniques such as dry needling, dry cupping, and heat application can be effective in managing foot pathologies, it is crucial to acknowledge the potential for adverse events. Jenkins et al. (2024) [14] found that minor adverse events were common among physiotherapists who use dry needling, with a significant percentage also reporting major adverse events. This underscores the need for clinicians to weigh the benefits of these treatments against their potential risks and for future research to further explore and mitigate these adverse effects.

Limitations and Future Directions

This scoping review has several limitations. The included studies had heterogeneous methodologies, variable sample sizes, and inconsistent follow-up periods, limiting the generalizability of findings. Additionally, differences in trigger point treatment techniques, operator skill level, and patient characteristics may have influenced the results. Few studies reported long-term effects, making it difficult to determine the durability of treatment outcomes. Future research should prioritize large-scale, high-quality randomized controlled trials with standardized treatment protocols to evaluate the effectiveness of trigger point therapy for foot pathologies. Investigating optimal treatment parameters, including session frequency, combination therapies, and long-term safety profiles, is necessary. Additionally, future studies should focus on objective outcome measures and report adverse events consistently to provide a clearer understanding of treatment benefits and risks.

Clinical Practice Implications

The findings elucidate that trigger point treatment techniques, encompassing dry needling, dry cupping, and local heating, emerge as positive avenues for mitigating pain and enhancing functionality in patients grappling with foot pathologies. Healthcare professionals should contemplate the integration of these techniques within a comprehensive treatment framework, thoughtfully considering individual patient requisites and inclinations. The possibility of combination therapies should be explored to maximize treatment outcomes and cater to the multifaceted nature of foot pathologies.

Conclusions

Trigger point treatment techniques show potential for reducing pain and enhancing functionality in foot pathologies. However, current evidence is preliminary and varied, necessitating cautious interpretation. Healthcare professionals should consider these techniques as part of a holistic approach, tailored to individual patient needs and preferences. Future research should focus on high-quality randomized controlled trials with larger sample sizes and longer follow-up periods to establish the long-term efficacy and safety of trigger point treatment techniques for foot pathologies. Additionally, studies should investigate standardized treatment protocols, the optimal frequency of interventions, and the comparative effectiveness of trigger point therapy versus other conservative management strategies. Reporting of adverse effects should also be standardized to better understand the risk-benefit ratio of these interventions.

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Conflict of Interests

There are no conflicting relationships or activities.

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