

Techniques and Osteopathic Manipulative Medicine Advantages

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Abstract

There are various reasons why doctors trained in orthopaedic manipulative medicine do not include the techniques they learned in school in their practice. For some, it is difficult to integrate orthopaedic manipulative medicine into their specific specialty. Also, some doctors may have gone to an osteopathic medical school simply to become a doctor, and do not necessarily believe in orthopaedic manipulative medicine or its principles. Others may not feel comfortable enough with orthopaedic manipulative medicine to perform it on patients; some techniques, such as HVLA, require greater proficiency to be used effectively and safely on patients.

Keywords: Beneficial for patients; Manipulative medicine; Clinical trials; Licciardone; Clinical outcomes; Osteopathic physicians

Introduction

In the Spaeth and Pheley study, many of the practicing osteopathic physicians who reported limited use of orthopaedic manipulative medicine also rated their orthopaedic manipulative medicine training as less than satisfactory, especially in the clinical years. This reinforces the idea that more extensive, consistent training in orthopaedic manipulative medicine would be beneficial for patients, osteopathic physicians, and the profession as a whole. Other barriers that have been reported by doctors include limited time for patient visits, lack of or poor reimbursement for orthopaedic manipulative medicine treatments, and inadequate equipment or facilities available in their practice settings. There are many people who claim that orthopaedic manipulative medicine lacks the vaunted randomized, double-blind, placebo-controlled trials, which have been hailed as the gold standard for evidence-based research, to support or merit its use in clinical practice [1]. However, there have been numerous studies that do support the efficacy of orthopaedic manipulative medicine. The problem is that these studies do not fit the gold standard criteria, and the reasons why orthopaedic manipulative medicine studies don't fit the criteria will be discussed below. For instance, several randomized clinical trials have demonstrated that orthopaedic manipulative medicine is useful in the treatment of low back pain. One such RCT divided 178 patients into an orthopaedic manipulative medicine group and a standard-care group.

Discussion

Although this study found no difference between the two groups in terms of clinical outcomes, including pain, the orthopaedic manipulative medicine group required significantly fewer medications, most notably non-steroidal anti-inflammatory drugs, analgesics, and muscle relaxants. In addition, the orthopaedic manipulative medicine group required less physical therapy as compared to the standard-care group, and the average costs for care were significantly lower [2]. In another study led by Licciardone on the efficacy of orthopaedic manipulative medicine for back pain during the third trimester of pregnancy, researchers compared back pain in three groups: usual obstetrical care and orthopaedic manipulative medicine, uOBC and sham ultrasound treatment, and uOBC only. They found that back pain decreased in the uOBC + orthopaedic manipulative medicine group, remained consistent in the uOBC + sut group, and increased in the uOBC-only group, but did not find statistical significance in the inter-group differences. This was a randomized study that stratified participants by age and number of previous pregnancies to reduce possible data confounding. However,

the researchers admitted that the limited number of participants restricted randomization in terms of illicit drug use, ethnicity, and vaginal bleeding, and suggested a larger trial as the necessary next step. The multi-centre osteopathic pneumonia study in the elderly, which included more than 400 patients over the age of 50 hospitalized for pneumonia across seven orthopaedic manipulative medicine university hospitals, demonstrated that the combination of OMT + conventional care significantly reduced length of stay, occurrence of respiratory failure or death, and use of IV antibiotics compared to the conventional care-only and light-touch + conventional care groups [3]. Throughout our review of the existing osteopathic literature, we discovered that finding strong, valid evidence to support orthopaedic manipulative medicine proved somewhat difficult due to the general shortage of research and the limitations of current studies. Orthopaedic manipulative medicine obstacles in osteopathic research include small sample sizes, the subjectivity of unclearly defined pain scales, lack of double-blinding, pre-trial participant bias regarding orthopaedic manipulative medicine, occasional lack of interjudge reliability, and failure to account for inter-operator variability [4]. Many factors contribute to the prevalence of such limitations in osteopathic research. The relatively low number of osteopathic physicians compared to allopathic physicians seems to be one important contributor. For example, a sufficient number of capable and willing osteopathic physicians to perform the research tasks is necessary to account for inter-operator variability. One possible explanation for osteopathic research seeming to have secondary importance in the profession is that few osteopathic schools are affiliated with teaching hospitals, in which large-scale projects could be conducted more freely and given a more visible position. Much like studies in surgery, psychiatry, and other procedures or personal therapies, implementing control groups and placebos is more difficult in osteopathic studies as well, hindering these studies from garnering the same acceptance in the scientific community as drug studies that can be double-blinded; currently, no

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treatment, sham, or light-touch treatment groups are used [5]. more single-blind studies, which would increase validity, should be performed with external orthopaedic manipulative medicine practitioners who provide treatment but do not have a vested interest in the study outcome. Considering the challenges associated with conducting clinical trials on orthopaedic manipulative medicine, it is not surprising that many researchers have now turned to in vitro models in order to demonstrate orthopaedic manipulative medicine's efficacy on the cellular level. In one study, human fibroblasts were subjected to repetitive motion strain using a vacuum to simulate the cellular effects of somatic dysfunction. Some cells were then placed in a strain-free setting to simulate an indirect osteopathic manipulative technique. Repetitive motion strain cells displayed decreased release of pro-inflammatory cytokines as well as increased proliferation as compared with those subjected to repetitive motion strain alone. These beneficial effects persisted 24 hours after the iomt was performed and continued even after the repetitive motion strain was restored. Though in vitro studies such as this have their own limitations, they are useful in elucidating the biological mechanisms behind orthopaedic manipulative medicine's clinical effects [6]. Approximately 200-300 hours of the first two years of osteopathic medical school are devoted to the manual manipulation portion of the osteopathic curriculum. Osteopathic medical students learn orthopaedic manipulative medicine in the same scientific manner that they learn pharmacology and other treatment regimens. For each osteopathic treatment modality, there are physiologic mechanisms of action, indications and contraindications, and situations when one technique may be more efficacious than another. While osteopathic principles, philosophy and history are taught in traditional lecture format, the unique, hands-on nature of orthopaedic manipulative medicine requires training in clinical laboratories. During a typical orthopaedic manipulative medicine lab session, students partner up and take turns acting as the practitioner and as the patient [7]. Over the course of the session, a faculty member leads the lab by demonstrating and explaining the technique to the class, while table-trainers, usually faculty members whose specialty is orthopaedic manipulative medicine and/or student orthopaedic manipulative medicine fellows, provide one-on-one guidance to students. Osteopathic students are first introduced to the world of orthopaedic manipulative medicine through differentiation of the feel of the different levels of tissue in the body [8]. After gaining this palpatory literacy, they move on to more complex topics, such as osteopathic diagnoses, charting, physical exams, techniques and treatments. Orthopaedic manipulative medicine can be challenging, though, as many students find that it takes a great deal of practice to master the techniques that they have learned. In fact, some even elect to pursue a year-long, pre-doctoral orthopaedic manipulative medicine fellowship, in which they receive additional training by rotating with orthopaedic manipulative medicine specialists, serving as table-trainers, and presenting lectures on orthopaedic manipulative medicine. This results in completion of their medical school training in five rather than four years. Muscle energy uses post-isometric relaxation to stretch muscles and increase range of motion. With the targeted muscle stretched to its barrier, the patient is instructed to move toward ease while the physician resists by using an isometric counterforce. Strain/counter-strain focused on specific tender points on the body that are held in a position of ease for 90 seconds, after which the tenderness is relieved [9]. Myofascial release encompasses many of the modalities mentioned above and is used to treat restrictions of muscle and fascia. This technique is generally not as aggressive as others and can thus be applied to a wider population. Chapman's points are points on the body

that, if tender, indicate visceral dysfunction. These can be treated in a variety of ways, including muscle energy and myofascial release. There are more than 500 different orthopaedic manipulative medicine techniques. Some are similar to those used by chiropractors, physical therapists, and/or massage therapists, while other methods are completely unique to osteopathic medicine. A palpable change in tissues from skin to periarticular structures that represents any combination of the following signs: vasodilation, edema, flaccidity, hypertonicity, contracture, fibrosis, as well as the following symptoms: itching, pain, tenderness, paresthesias. Types of tias include: bogginess, thickening, stringiness, ropiness, firmness (hardening), increased/decreased temperature and increased/decreased moisture. Facilitation refers to altered or enhanced neuronal activity, often due to repetitive stress [10]. The neurons in a facilitated area are in a partial, sub-threshold excited state, meaning it takes less of a stimulus to cause sensation or pain. This can often present as tenderness upon palpation and/or restriction of motion.

Conclusion

As Dr. Still's school grew, so did the osteopathic profession. In 1897, the American Osteopathic Association was founded to set educational standards across all osteopathic colleges and maintain a committee on osteopathic education. The Journal of the American Osteopathic Association was first published in 1901. All the while, osteopathic medicine remained as pure in its philosophy as it was when it was first conceived.

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Conflict of Interest

None.

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