

RELEVANCE OF ERGONOMICS IN OSTEOPATHY AND ACUPUNCTURE PRACTITIONERS

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ABSTRACT

Background: Osteopathy and acupuncture practitioners are often involved in manual therapy and manipulative techniques, which can expose them to various ergonomic risks. These risks can lead to musculoskeletal disorders (MSDs), resulting in a decrease in their longevity in the field and potentially their ability to provide high-quality care. **Objectives:** This paper seeks to synthesize the current literature regarding the risks associated with the clinical practice of osteopaths and acupuncturists, focusing on physical strains, MSDs, and preventive measures, as well as the importance of ergonomics. **Methodology:** A search was conducted in several databases ((Pubmed, Scopus, b-On and Web of Science), inquiring about ergonomic risks in osteopathic and acupuncture practitioners. **Results:** Several ergonomic risks were identified, both in osteopaths (Physical Strain, MSD and factors related to the workplace) and in acupuncturists (Postural stress, Needle manipulation and Patient handling). **Conclusions:** Among the most important issues to be considered in healthcare professions is ergonomics, as it directly influences both practitioner well-being and patient care quality, promoting a safer, more productive, and efficient work environment, protecting practitioners and enabling them to sustain their careers and provide effective patient care.

Keywords: Osteopathy, Acupuncture, Ergonomics, Musculoskeletal Disorders.

1. INTRODUCTION

Osteopathy and acupuncture practitioners play a vital role in promoting health and wellness, utilizing hands-on techniques to alleviate pain and enhance mobility in their patients. However, these professions also pose significant ergonomic risks that can impact practitioners' long-term health. The nature of their work often involves repetitive motions, prolonged positions, and physical exertion, which can lead to musculoskeletal disorders. Factors such as awkward postures while treating patients, manual handling of clients, and extended hours of standing or bending contribute to discomfort and fatigue. Understanding and addressing these ergonomic risks is essential for practitioners to maintain their own health and continue providing effective care to their patients. Through proper training, ergonomic practices, and adaptive strategies, osteopathy and acupuncture professionals can mitigate these risks, ensuring both their longevity in the field and the quality of care they deliver.

Musculoskeletal disorders represent a significant occupational hazard across various healthcare professions, with complementary and integrative healthcare providers, including osteopaths and

acupuncturists, being particularly susceptible due to the inherent physical demands of their practice (Che Huei *et al.*, 2020). This pervasive issue stems from a combination of factors such as repetitive motions, sustained awkward postures, and forceful exertions integral to manual therapies and patient positioning. (Kim, 2017). For instance, chiropractors, a closely related profession, report a one-year prevalence of occupational musculoskeletal disorders, highlighting the widespread nature of these injuries within fields requiring direct physical patient interaction. These occupational injuries often mirror those seen in other physically demanding sectors like construction and manufacturing, underscoring the severity of ergonomic challenges faced by these practitioners (Howarth *et al.*, 2020). Specifically, osteopaths frequently experience injuries resulting from inadequate ergonomic positioning and excessive stretching of their own bodies, often necessitated by accommodating patients of varying sizes (McLeod *et al.*, 2017;). Acupuncturists, similarly, encounter ergonomic stressors stemming from repetitive precision arm and finger movements during needle insertion and manipulation, which can lead to specific musculoskeletal issues (Balatsas-Lekkas & Dieckmann, 2014). Understanding the specific risk factors and implementing preventive strategies are crucial for safeguarding the well-being and longevity of osteopathy and acupuncture professionals (Prasetya *et al.*, 2024).

Ergonomics plays a critical role in healthcare professions, particularly those involving direct physical patient interaction and manual therapies, such as osteopathy and acupuncture (Thomas & Suresh, 2022). The relevance stems from the high incidence of work-related musculoskeletal disorders among practitioners, which are a significant occupational hazard (Uhlman *et al.*, 2019). The reasons why ergonomics is crucial in these fields can be summarized in several domains: The first is the high physical demands that are involved, since many healthcare roles, especially in complementary and integrative healthcare, involve inherent physical demands, including repetitive motions, sustained awkward postures, and forceful exertions (Russo *et al.*, 2020). These demands contribute directly to the development of Work-related Musculoskeletal Disorders (WMSDs). We should also consider the specific risk factors, because osteopaths, for instance, frequently suffer injuries due to inadequate ergonomic positioning and excessive body stretching, often required to accommodate patients of varying sizes (Aremu *et al.*, 2023a). Acupuncturists face ergonomic stressors from repetitive precision arm and finger movements during needle insertion and manipulation (Balatsas-Lekkas & Dieckmann, 2014). Other related professions, like chiropractic, also report a high one-year prevalence of occupational musculoskeletal disorders (Howarth *et al.*, 2020).

Another important aspect is the impact on practitioner well-being and career longevity. These occupational injuries can be as severe as those seen in physically demanding sectors like construction and manufacturing (Howarth *et al.*, 2020). Poor ergonomic practices can lead to conditions that affect a practitioner's health, career longevity, and potentially their ability to provide effective patient care. For example, a recent Australian study showed that nearly two-thirds of osteopaths reported at least one WRMI, often early in their careers (McLeod *et al.*, 2017; Aremu *et al.*, 2023b).

The relevance of ergonomics in healthcare professions is therefore an important issue to be considered, evolving several aspects. One of the most important is clearly the injury prevention, since healthcare professionals, such as nurses, doctors, and therapists, frequently perform physically demanding tasks that can lead to musculoskeletal disorders (MSDs). By applying ergonomic principles, the risk of injuries related to repetitive movements and awkward postures can be minimized (Kim, 2017). Another beneficial domain is the enhanced patient care. Ergonomically designed workspaces and tools can improve not only the health and safety of the

practitioners but also enhance the quality of care provided to patients. When healthcare workers are comfortable and less fatigued, they can focus better on their tasks and provide higher quality patient interactions.

The objective of this work is to synthesize the current literature regarding the risks associated with the clinical practice of osteopaths and acupuncturists, focusing on physical strains, MSDs, and preventive measures, as well as the importance of ergonomics.

2. MATERIALS AND METHODS

A comprehensive search was performed in several databases (Pubmed, Scopus, b-On and Web of Science). The terms used in queries were “Osteopathy practitioners” “Acupuncture practitioners”, “Ergonomics”, “Musculoskeletal-disorders” and “Work-related injuries”. These terms were combined, and a total of 280 records were found. After removal of duplicates and filtering by relevance, 20 papers were included in this analysis. The criteria for inclusion were relevance in practitioners (osteopaths and acupuncturists), focus on ergonomics, reporting of injury risk and quality (either peer-reviewed journal article, conference paper).

3. RESULTS

3.1 ERGONOMIC RISKS IN OSTEOPATHY

Physical Strain: Osteopaths frequently utilize body mechanics that involve lifting, twisting, and prolonged standing. Studies indicate that these movements can strain the lower back, shoulders, and wrists. A survey conducted by Dong *et al.* (2020) found that a high percentage of osteopathic practitioners reported pain related to their work, particularly in the lumbar region.

Musculoskeletal Disorders (MSDs): A recent research by Jacquier-Bret (2023) highlights a high prevalence of MSDs among osteopaths, with rotational strain contributing significantly to conditions such as herniated discs and rotator cuff injuries, while another study (Fitchew, 2009) refers high prevalence (83%) of MSD disorders among osteopaths.

A systematic review by Aavang Petersen *et al.* (2022) confirmed that repetitive hand movements and awkward postures increase the risk of developing tendonitis and carpal tunnel syndrome.

Workplace Environment: Ergonomics in treatment rooms (e.g., table height, space layout) can greatly influence practitioners' physical well-being. Verhees *et al.* (2022) emphasized that well-designed workspaces reduce strain and enhance comfort.

3.2 ERGONOMIC RISKS IN ACUPUNCTURE

Postural Stress: Acupuncture practitioners frequently maintain static postures while treating patients, leading to postural fatigue. A study by Gregg *et al.* (2024) indicated that 75% of acupuncturists experienced neck and shoulder stiffness.

Needle Manipulation: The repetitive motion of inserting and removing needles can result in overuse injuries. Jiang *et al.* (2024) found that many acupuncturists reported wrist pain linked to these repetitive tasks, raising concerns about long-term joint health.

Patient Handling: Assisting patients, especially those with mobility issues, can pose additional risks to acupuncturists. Lifting or supporting patients improperly can lead to acute injuries, particularly in the lumbar spine. Ridham Sharma & Suman Mehra (2023) reported that 50% of acupuncturists exhibited signs of lower back distress correlated with patient handling techniques.

4. DISCUSSION

High MSD prevalence in osteopaths (Fitchew, 2009) stems from biomechanical overload during manual techniques, where repetitive thrusting and sustained postures exceed tissue tolerance, leading to microtrauma accumulation in low back/neck/upper limbs. This pattern emerges because osteopathic/acupuncture tasks demand asymmetric loading without inherent recovery (Narendrasinh & Mulla, 2015).

These factors show the high importance of ergonomics. The efficiency in work processes can also be improved, because ergonomics contributes to more efficient workflows within healthcare settings. By designing workspaces and routines that reduce unnecessary movements and streamline operations, healthcare professionals can save time and reduce stress, ultimately leading to better health outcomes. Directly connected to this point, we can expect an improvement in employee satisfaction. A focus on ergonomics promotes a healthier work environment, which can increase job satisfaction and reduce turnover rates among healthcare workers. When professionals feel supported and are less prone to injury, they are more likely to remain engaged in their work. One last, but also important aspect, is the better resource utilization. Implementing ergonomic practices can lead to cost savings for healthcare organizations by reducing the incidence of workplace injuries, which often result in higher insurance costs and lost labor hours. By investing in ergonomic solutions, healthcare facilities can enhance productivity while managing costs effectively (Kim, 2017).

All these factors show the necessity for preventive strategies understanding the specific risk factors, and implementing preventive strategies is a crucial measure for safeguarding the well-being and ensuring the long-term careers of osteopathy and acupuncture professionals (Prasetya *et al.*, 2024).

In summary, ergonomics is crucial in healthcare professions as it directly influences both practitioner well-being and patient care quality, promoting a safer, more productive, and efficient work environment, protecting practitioners and enabling them to sustain their careers and provide high-quality care.

Preventive Measures

We cannot stress the importance of preventive measures, to address the above situations. Among the various measures, we would like to highlight the following:

Education and Training: Incorporating ergonomic training into the education of osteopathy and acupuncture practitioners is crucial. Programs that focus on safe body mechanics, proper lifting techniques, and posture awareness can significantly reduce injury rates.

Workspace Design: Practitioners should optimize their treatment spaces. Using adjustable tables, ensuring adequate space to move freely, and implementing supportive furniture can mitigate ergonomic risks.

Regular Breaks and Stretching: Encouraging regular breaks and stretching exercises may alleviate muscle fatigue and prevent injuries. Practitioners should be trained on specific stretches that target commonly affected areas like the back, shoulders, and wrists.

5. CONCLUSIONS

Osteopathy and acupuncture practitioners face significant ergonomic risks due to their manual work. Continued research and implementation of preventive strategies are essential to reduce the incidence of musculoskeletal disorders and improve occupational health outcomes for these

professionals. Future studies should explore the impact of ergonomic interventions and the long-term health of practitioners in these fields.

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