Effectiveness of OMT on cardiovascular function: a systematic review.

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Abstract

Osteopathic manipulative treatment (OMT) has shown promise as a non-invasive approach to improve cardiovascular function. Through this systematic review, our objective is to investigate the effects of OMT on cardiovascular function and its regulators in the nervous and endocrine systems. We considered randomized controlled trials, non-randomized controlled trials, and crossover studies. Participants must have received OMT intervention by a trained osteopathic physician. Cardiovascular, nervous, or endocrine-system outcome variables must be measured at least once after treatment. Evidence will be summarized using standard techniques with subgroup analyses providing more insight into OMT techniques, time frame of the treatment, duration of effects, and adverse effects. After conducting searches in multiple databases, over 9,000 entries were considered for title abstract screening. Over 130 articles were chosen for full-text screening according to our inclusion criteria. Most studies include either healthy participants or those with existing cardiovascular disease. We had 49 papers for critical appraisal and data extraction. In the data extraction stage, some outcome measures that were extracted were blood pressure, cardiac output, heart rate, stroke volume, epinephrine, and nitric oxide. We predict that treatments utilizing OMT, in adjunct to standard treatments for cardiovascular disease, will show improvements in measurements following manipulation. A full summary of results based on meta-analysis will be presented.

Background

Vascular disease is responsible for the top two causes of death worldwide. Osteopathic manipulative treatment (OMT) is currently utilized mostly for alleviating musculoskeletal symptoms, but it has shown promise as a non-invasive approach to improve cardiovascular function. There is currently no consensus that OMT can have short-term or long-term effects on cardiovascular function. The utility of OMT in maintaining cardiovascular system health is an emerging area of practice.

Methods

This review considered randomized controlled trials, non-randomized controlled trials, and crossover studies. Participants must have received OMT intervention. The included papers had passive or active controls. Cardiovascular, nervous, or endocrine-system outcome variables must be measured at least once after treatment. Covidence software[1] was used for title abstract and full-text screening. Meta-analysis will be carried out and presented with the help of forest plots and narrative summaries.

Summary of Data

Figure 1. PRISMA Flow Diagram

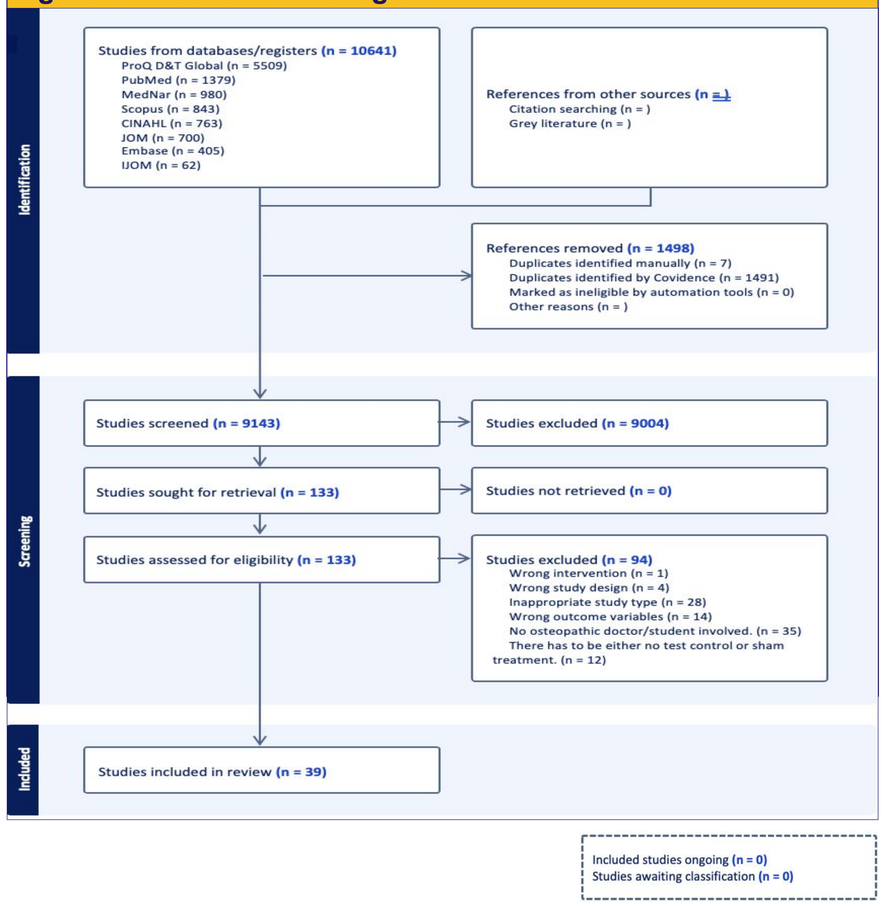


Figure 2. Outcome Variables

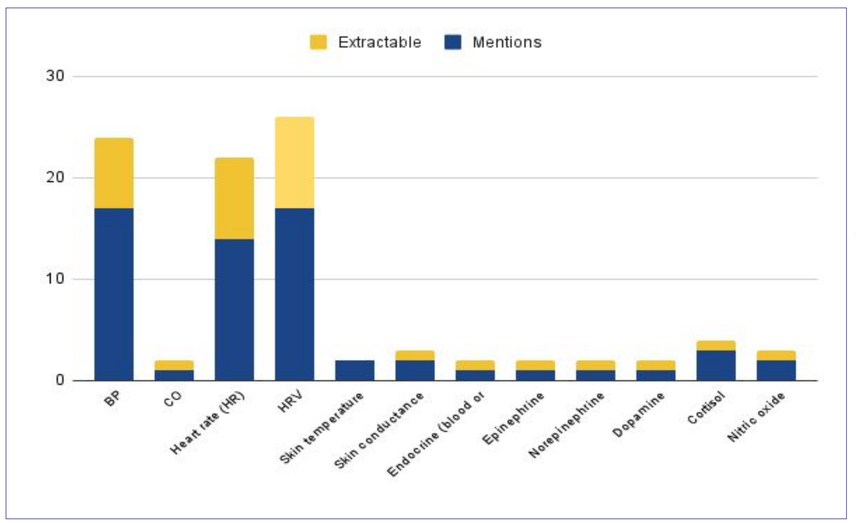
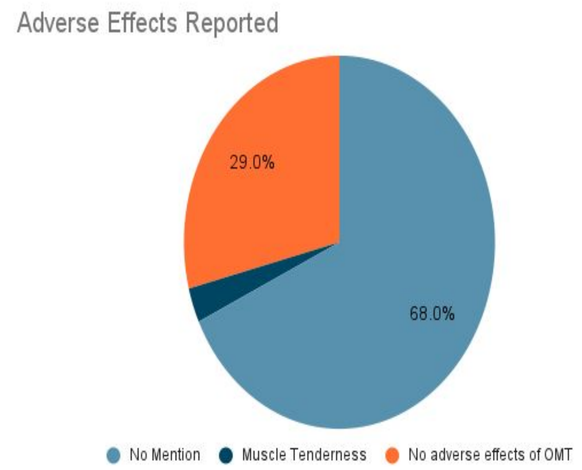


Figure 3. Adverse Events Mentioned



Discussion / Conclusion

As mentioned in the results, the common outcome variable that was extractable was heart rate variability, heart rate and blood pressure. It was observed that the adverse effects due to OMT were not frequent. We also observed that research into the effect of OMT on the endocrine system was minimal and would be a good avenue for future research. Further evidence will be summarized in a manuscript using standard techniques with subgroup analyses providing more insight into OMT techniques, time frame of the treatment, and duration of effects, and adverse effects.

Acknowledgments

We would like to thank JBI Systematic Review Training Group at TUN for their support and training.

References