An Osteopathic Assessment of Lower Extremity Somatic Dysfunctions in Runners

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Background

- Runners often experience acute and/or chronic pain due to pre-existing structural somatic dysfunction and/or acquired overuse injuries of the lower extremity, specifically affecting the ligaments, tendons, muscles and bones.
- Approximately 80% of running injuries are overuse injuries of the lower back and leg.
- Risk factors: 1. Personal factors (i.e age, sex, height) 2. running/training factors (i.e weekly running days, distance, shoes) 3. lifestyle factors (i.e comorbidities, smoking, previous injuries).
- Osteopathy presents a unique opportunity to integrate form with function when assessing and treating runners' injuries of the musculoskeletal system.
- With an understanding of the common trends of somatic dysfunctions and etiology of the pain/injury, modified regimen and treatment plans can be developed and recommended for runners to better rehabilitate, minimize relapse and reduce compensatory injuries.
- Gait analysis, soft tissue techniques, and joint mobilization strategies are treatment components that can be utilized when managing runners' injuries.

Objective

- The purpose of this study is to assess the correlation between acute and chronic pain, overuse injuries, and observational and palpatory findings upon evaluation.

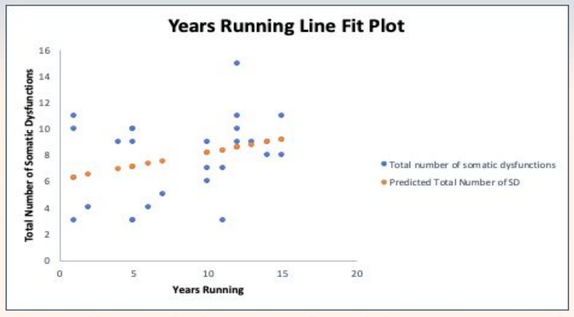
Methods

- A group of self-identified runners at Touro College of Osteopathic Medicine, NY – Harlem were evaluated for somatic dysfunctions.

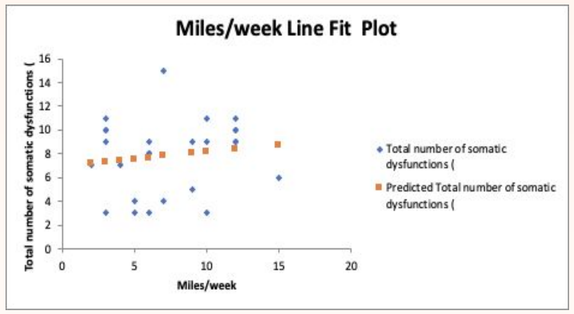
- Each participant completed a baseline survey with questions related to their running training routine, dietary intake and medical history.
- Participants were assessed for lower extremity musculoskeletal dysfunctions using an osteopathic structural examination.
- Participants completed an active and passive range of motion followed by a series of OMM special tests including McMurray's test, FABERE and FADIR, Apley's compression and distraction, Trendelenburg test, Hip drop test, Patellar grind test, and leg length examination.

Results

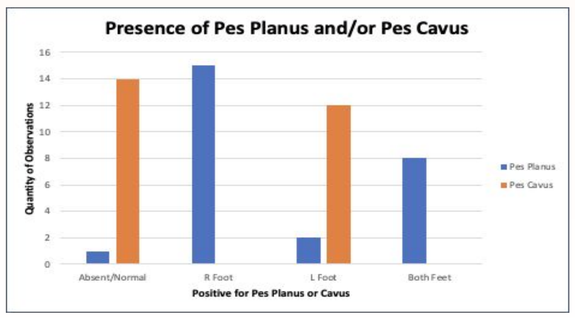
- Preliminary analysis suggests a correlation between the number of somatic dysfunctions and years of running r(25)= +0.30, p (0.13).



- A small correlation was found between somatic dysfunctions and miles per week, sports injuries, time per week, lower extremity pain, r(25)= +0.14, p(0.48); r(25)= +0.10, p(0.61); r(25)= -0.03, p(0.89); r(25)= -0.01, p(0.97).



- There is a potential correlation between runners and the presence of Pes Planus, with 96% of participants positive for unilateral or bilateral pes planus. Further research to be conducted to compare runners to non-runners.



Discussion

- Running has been identified as one the most popular sports essential for health maintenance and physical fitness; however, running has been associated with many sports related injuries.
- Extrinsic factors such as high weekly mileage and incorrect shoes, poor training and nutrition habits, and inadequate rehabilitation from previous injuries have been identified as possible determinants of running-related injuries.
- Some correlation exists between years running and number of diagnosed somatic dysfunctions.

Limitations

- Survey results were limited due to the small sample size of runners.

References

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