ABSTRACT

Background: Generalized joint hypermobility is commonly measured using the Beighton and Horan Joint Mobility Index which provides a Beighton score of 0-9. Generally, scores of ≥4 are classified as hypermobile however joint hypermobility classification lacks consistency across the literature.

Purpose: The aim of the study was to compare the relative contribution of five joints to joint hypermobility scores in female and male rugby players, female netball players, female dancers and male and female age matched controls.

Study Design: Individual cohort study.

Methods: Joint hypermobility was assessed in 286 subjects using the Beighton and Horan Joint Mobility Index. Subjects were assigned a Beighton score of 0-9. These scores were then categorized using three different joint hypermobility classification systems and results were analyzed using a Pearson's Chi Square ($\chi^2$) to report the relative contributions of each joint to hypermobility scores.

Results: Significant differences existed for group and gender analysis at the left and right 5th metacarpophalangeal joints, left and right thumb, left and right elbow and lumbar spine ($p < 0.001$). Lumbar flexion demonstrated significant $\chi^2$ values and large effect sizes for all groups. This effect size was reduced to a moderate effect size when male against female analysis was performed and joint hypermobility was greater in females in comparison to males. The knee joint demonstrated the lowest hypermobility across all populations and ranged from 3% in male rugby players to 24% in female dancers. Seven hypermobile knees existed in males and 53 in females. Female dancers had the highest prevalence (93%) of hypermobile lumbar flexion and all female groups had a higher prevalence of hypermobile lumbar flexion than males. The removal of lumbar flexion from the total Beighton score had no effect on joint hypermobility prevalence in males in contrast to females where changes were demonstrated.

Conclusion: Joint hypermobility classification of female dancers should consider the high prevalence of hypermobility of lumbar flexion in interpretation. The consideration of separate classification systems for males and females, and between athletes of different sports and dancers may aid future understanding.

Levels of Evidence: 2b

Key words: Beighton score, female dancers, hypermobility, lumbar flexion.

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