INTRODUCTION

The slow continuous and controlled movements of tai chi require good motor control and balance. [1, 2] The more accomplished the practitioner the greater the quality of movements. The quality of tai chi would be expected to increase with practice and also those with certifications would be expected to meet certain minimal standards of quality. The purpose of this study was to compare balance while performing tai chi between tai chi experts and non-experts.

METHODS

Participants were recruited from a 10-day workshop on tai chi sponsored by the Tai Chi for Health Institute (TCHI). They had selected from one of several beginning and in depth level options for the workshop. People with prior knowledge of Sun style or Tai Chi for Arthritis that is based on this style were included in the study.

Self-report was used to measure experience with tai chi (certifications and years engaged in the different types of tai chi; and master or senior trainer in TCHI). Master and senior trainers were classified as experts because they had good quality tai chi movements to be designated as such. The quality of the tai chi movements (understanding of the tai chi movements, quality of movement, application of tai chi principles, and physical relaxation) were rated on a 4-point Likert scale (0 “low” to 3 “high”) and ratings summed for maximum score of 12. Inter-rater reliability was 92%.

RESULTS

The 4 men and 17 women had an average age of 61 years (range 50 to 79, SD = 7.32). One master trainer had over 10 years of Sun style tai chi experience while two had 5 to 10 years. Two senior trainers had practiced a Sun style tai chi for 5 to 10 years while another for less than 5 years. All participants in the study were certified in Tai Chi for Arthritis that uses the Sun style movements used in the present study. They most frequently rated their health as excellent and very good (47.6% for each level) and only 1 rated it as fair.

For open/close and single whip, no significant differences in distance and velocity measures of the COP were found between the experts and non-experts. For commence and wave hands, the COP displayed statistically greater displacement to the limits of stability and velocity. (See Figure on next page for significant results). No significant differences were found for observed overall quality of movements, but master and senior trainers had greater observed relaxation with movements.
CONCLUSIONS

Greater motor control and balance are hallmarks of tai chi, and balance analysis revealed differences between experts and non-experts. The greater distance the COP moved in the experts in the present study may be associated with their ability to move closer to their limits of stability. Velocity then may have been higher because the COP had to cover a greater distance in the same amount of time than the non-experts. Alternately, the movements of the experts may have been more continuous while that of the non-expert may have been shaky with hesitations in the COP. Experts’ greater confidence in the movements may also have reduced hesitations. Exploration of last two hypothesized explanations requires further research.

REFERENCES


ACKNOWLEDGEMENTS

Funding from Indiana University School of Medicine-Terre Haute and the Alvin S. Levine Professorship to Roy W. Geib. Authors appreciate the space for data collection provided by St. Mary-of-the-Woods College. Authors thank Pratik Kalsaria, Josephine Riley and Safa Alakhdhair for assistance with the project.