

Benefits of virtual Tai Chi and Qigong intervention on sleep quality and wellbeing among university older employees

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Abstract: Background: Tai Chi and Qigong are mind-body exercises associated with multiple health benefits. The unprecedented COVID-19 pandemic has led to increased stress and reduced sleep quality, where older adults are at a particularly higher risk for severe COVID-19 related outcomes. To mitigate the negative impact of COVID-19 on health while maintain social distancing, we evaluated the effect of virtual Tai Chi and Qigong intervention on improving sleep quality and stress reduction in older university employees (50 and older) using mixed methods.

Methods: Participants from diverse backgrounds and job classifications at The University of Arizona, Tucson, Arizona, US, were recruited during fall 2020. Ninety individuals enrolled in the intervention study and were randomly assigned into two groups: Group 1 took the classes in the first 6-weeks of the intervention. Group 2 served as waitlist controls during the first 6-weeks of the intervention but took the classes in the second half of the 12-week study period. The intervention included 50-minute Tai Chi (*Bafa Wubu*) and Qigong (*Ba Duan Jin*) virtual sessions that were offered via Zoom three times per week. Recordings of the sessions were made available online for participants who could not attend the live sessions or for review. Questionnaires were used to assess sleep quality, mindfulness, and psychological stress at baseline, 6-weeks, and 12-weeks. Two focus groups were conducted post-intervention with 14 participants to further examine their intervention experiences and health impacts. **Results:** Comparing questionnaire results during the first 6 weeks, we found Group 1 had significant improved Pittsburgh sleep quality index scores (PSQI) than Group 2: the change in PSQI global score was median = -1.5 (IQR: -3, -1) vs. median = 0 (IQR: -1, 1) for group 1 vs. group 2 ($p = 0.002$). Comparing questionnaire results between week 6 and week 12, we found that Group 1 had significantly improved psychological stress (felt more included) than Group 2 (median = -1 (IQR: -1, 0) vs median = 0 (IQR: 0, 0) $p = 0.001$). Focus group participants reported multiple benefits, including

physical activity, physical and mental health, sleep, and stress reduction after the intervention.

Conclusions: Our virtual Tai Chi and Qigong intervention significantly improved sleep quality and showed possible psychological wellbeing benefits. Measures such as sleep quality improved more rapidly and changes were observed within 6 weeks. Other measures such as psychological stress took a longer time to show significant improvement and changes were observed until week 12.