Purpose:
The purpose of this study was to quantify the efficacy of a 6-week aquatic treadmill exercise program, specifically for individuals with osteoarthritis (OA), on measures of pain, balance, function and mobility.

Methods:
Eighteen participants (average age 65 years old) with knee osteoarthritis completed a non-exercise control period for 4-weeks. This was followed by a 6-week exercise period. Outcome measures included visual analog scales for pain, balance, sit-to-stand test and a 10m walk test for mobility. The exercise protocol included balance training and high-intensity interval training (HIIT) on an aquatic treadmill using water jets to destabilize while standing and achieve high rating of perceived exertion while walking.

All aquatic exercise sessions were performed in a sports medicine clinic using an underwater treadmill (HydroWorx 2000 Series) with no shoes at a water depth equal to xiphoid process.

Results:
In comparison with the pretests, participants displayed reduced joint pain, improved balance, improved function and mobility after participating in the exercise protocol. The same benefits were not observed after the non-exercise control period.

Conclusion:
In conclusion, this study observed that patients with OA display reduced joint pain and improved balance, function and mobility after participating in a 6-week aquatic treadmill exercise program that incorporated a balance and HIIT training component.

Adherence to the exercise was exceptional and no participants reported adverse effects, suggesting that aquatic treadmill exercise that incorporates high-intensity intervals is well-tolerated by patients with OA and seems to be effective at managing symptoms of OA.