

EFFECTS OF AN AQUATIC THERAPY PROGRAM IN BALANCE AND RISK OF FALLS, IN OLDER ADULTS: A SYSTEMATIC REVIEW



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Introduction

Balance is a fundamental ability in older adults, and their malfunction is one of the main causes that lead to falls¹. Fall is considered one of the most important change factors in their lives, because of the restrictions that this may cause, severely affecting the quality of life of the older adults¹. Aquatic Therapy programs have often been recommended for these population, because they have a safe environment, less subject to falls and with good acceptance and adherence to treatment^{2,3}.

Purpose

The aim of this systematic review was to gather and analyze existing research on the effects of Aquatic Therapy programs in balance and risk of falls in older adults.

Methods

The research was conducted in Pubmed and Sport Discus (EBSCO) databases from 20 December 2012 and 19 February 2013. The PICO model was used in the selection of the articles, and the keywords used were: elderly, "aquatic therapy", hydrotherapy, balance, "risk of falls". Studies: randomized controlled trials (RCT) or quasi-experimental studies. Population: over 60 years, independent in ADL. Interventions: Aquatic Therapy programs. Outcomes: balance, risk of falls. Methodological quality was assessed with the PEDro scale⁴ (RCTs) and by the Levels of Evidence⁵ (quasi-experimental studies).



Results

Study Characteristics

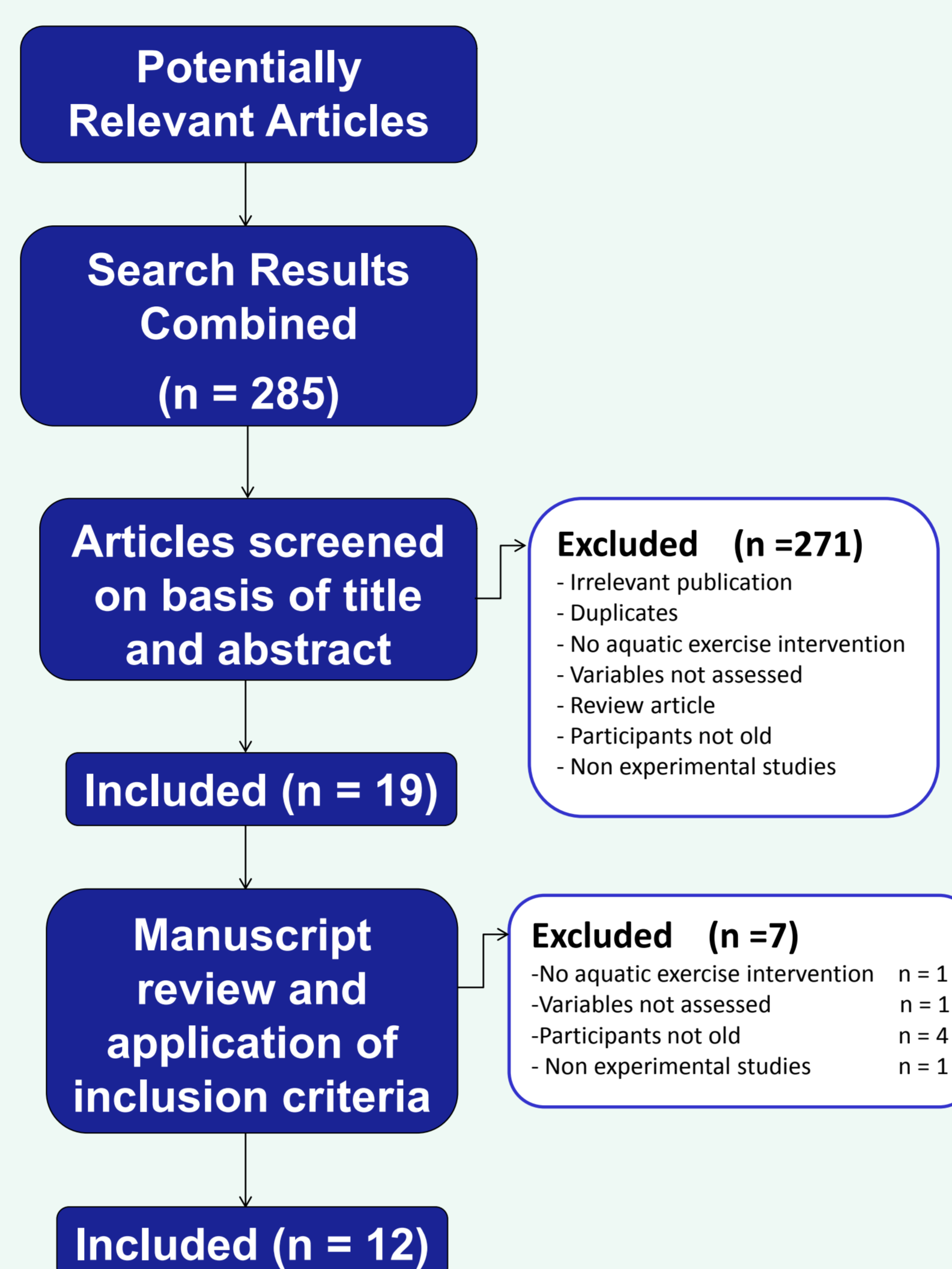


Figure 1: Flow diagram of study selection

285 articles were identified. 12 articles were selected to include in this systematic review (8 RCT's and 4 quasi-experimental studies).

The samples used ranged from 11 to 79 participants and mean age ranged from 65 to 80 years.

The intervention period ranged from 4 to 20 weeks (most common length of intervention were 8 and 12 weeks) with 2 to 3 sessions a week (40 to 60 minutes for session). Interventions presented homogenous characteristics, and the aquatic programs had almost the same structure: a warm up (for example, different types of walking or running), a fundamental part (balance exercises, postural stability, strength and endurance) and return to calm / stretching phase.

The instruments more used were the Berg Balance Scale (8 studies) followed by the Timed Up & Go Test (6 studies). In 9 studies the participants were evaluated before and after intervention.

4 studies compared an aquatic therapy group with a control group, 3 studies compared an aquatic therapy group with a land group, 3 studies compared 3 groups (water, land and control group), 1 study showed only an aquatic therapy group and finally, 1 study compared an aquatic therapy group with an educational part with an aquatic therapy group and a control group.

The RCT's ratings ranged from 7 to 9 in the PEDro scale (0-11) and the quasi-experimental studies were ranged with 2b in the Levels of Evidence (1-5). In all RCT's, participants were randomly allocated and all studies were similar at baseline for demographic characteristics. Care provider was never blinded, patient blinding occurred in 4 trials and evaluators blinding occurred in 3 trials.

There were significant changes in 9 studies regarding the outcomes studied. 2 studies found improvements in balance in aquatic therapy and land groups, however no significant differences were found between the 2 groups. There were significant improvements in the balance in the aquatic therapy group when compared with the control group in 4 studies and when compared with the land group in 3 studies.

Discussion

These studies showed the positive benefits of these programs in older adults. The physical properties of water along with specific exercises, can fulfill most physical objectives proposed in a rehabilitation program⁶. The aquatic environment is considered safe and effective in the rehabilitation of older adults, because water acts simultaneously on musculoskeletal disorders and improves balance⁷. This aquatic environment allows the group attendance and the recreation facilitation, socialization and training in water with basic movements of aquatic techniques, that associated with functional upgrades can improve their self-esteem and self-confidence⁶.

Regarding exercise programs, only 6 of them specifically described the whole program (description of the exercises performed, frequency, intensity and duration of these), while the remaining didn't, thus hindering the recommendation of a certain protocol specific to the elderly population relative to balance and risk of falls.

Conclusions

There is scientific evidence regarding the positive impact of an aquatic therapy program in older adults in balance and consequent reduction in risk of falls. However, future studies with more rigorous study designs and with more structured and outlined programs are needed to prove the efficacy of this modality in balance and risk of falls in this population.

References

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