
The effect of land and aquatic exercise on balance in elderly women.

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Introduction: With ageing increase the low and poverty mobility. Reducing balance and increasing fall risk are very important that should be more noteworthy as a result of the elderly. Purpose of this research was either effect of physical exercises on balance score, and provide adequate conditions and physical activity for untrained older adult. One of the primary purposes of elderly care is to help them for maintain independence in activity and provide safe environment for prevention of falls. Water as a low risk and supporting environment, reduce the possibility of damage and fear of falling during practice.

Resende(2008) studied the effect of hydrotherapy on balance and prevention of falling in elderly women that obtained increase in balance score and decrease fall risk. Simmons(1996) compared effects of land and aquatic exercise on balance score in elderly, results represented more improve in balance of water exercise group due to increased confidence and reduced fear of falling in the water environment. Also Douris(2003) reported improvement in balance scores in both water and land exercise group but was no significant difference between the two groups. Heydar Sadeghi(1386) compared effect of water exercise on two training and control group in elderly women and reported improved balance in aquatic group. The past research in balance evaluation by practical tests, that will be necessary the use of laboratory tests in order to obtain more precise information in determining changes of elderly balance in practice. This study compared the effect of land and water exercise on balance elderly using the Biodex, and fall risk test.

Methodology: The statistical society includes untrained elderly women of Mashhad City. Subjects were the 23 qualify people (mean age 4159 ± 4 years) were divided two water (n =10) and land exercise (n =13) groups. Exercises were similar in both groups; program training include the 8-week training, two sessions per week (16 sessions) and each session included three phase: warm up, the main exercises, and cool down. Balance score measured before and after the exercise period by Biodex, Fall risk test. Student's t test was used to evaluate differences (p<0.05).

<table>
<thead>
<tr>
<th>Group</th>
<th>Test</th>
<th>K.S test</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Within group</th>
<th>Between group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water training</td>
<td>1/74±10/81</td>
<td>K.S=0/57 P=0/89</td>
<td>1/15±10/53</td>
<td>T=4/96 P=0/001</td>
<td>T=0/84 P=0/057</td>
<td></td>
</tr>
<tr>
<td>Land training</td>
<td>2/6±10/06</td>
<td>K.S=0/94 P=0/34</td>
<td>1/5±10/70</td>
<td>T=4/04 P=0/002</td>
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</tbody>
</table>

Result: According to the results increase score balance between pre and post test for each group was significant (p<0.05) but was no significant difference between the two groups (p>0.05).

Conclusion: Finding of this study was confirmed to Sadeghi(1986), Douris(2003), Simmons(1996) and Resende(2008). Reason of this progress can be involve increase the muscle strength and improve neuromuscular coordination. Furthermore no significant difference between balance score of the two groups, confirm that perform this exercises with the proper intensity and safety environment in land can also improve balance in elderly and increase their independence. Therefore, while lack of suitable water environment (don't access to the swimming pool, high expense and etc), with practice in land environment can improve balance. Although research findings showed 8 week training exercise in water more improve balance in older women. Compared with the land, but this increase was no significant.


8. Sadeghi H, Alirezaei F. Influence of a course of sport exercise in water on static and dynamic balance of older women; Journal of Aging, the second year, No. 6, Winter 1386