Seated Exercise Compared to Standing Exercise In Improving Strength and Endurance in Community-Dwelling Seniors.

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Table 1: Subjects' Demographics (n=13)

<table>
<thead>
<tr>
<th></th>
<th>Age (years)</th>
<th>Height (cm)</th>
<th>Weight (kg)</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated Group</td>
<td>79.1 ± 8.5</td>
<td>162.7 ± 4.6</td>
<td>75.5 ± 17.1</td>
<td>28.3 ± 5.2</td>
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<tr>
<td>Standing Group</td>
<td>77.7 ± 11.3</td>
<td>160.5 ± 8.1</td>
<td>66.1 ± 23.3</td>
<td>25.4 ± 8.0</td>
</tr>
<tr>
<td>Minimum*</td>
<td>58</td>
<td>150</td>
<td>44</td>
<td>18.7</td>
</tr>
<tr>
<td>Maximum*</td>
<td>91</td>
<td>170</td>
<td>106</td>
<td>40.3</td>
</tr>
</tbody>
</table>

Exercise Program
• Group exercise classes twice a week for six weeks
• Five-minute warm up consisting of marching, shoulder rolls, neck, ankle, and wrist range of motion. Both groups did the same warm-up.
• Some of the key exercises focused on in this study were: knee lifts, hip abduction, calf raises, squats / straight leg raises, trunk rotation, kettlebell swing, side bends, bicep curls, and upright rows.
• Both groups received the same amount of rest time in between sets (approximately 20 seconds).
• The cool down consisted of approximately five minutes of stretching and breathing techniques. Both intervention groups followed the same cool down and all stretches were done seated.

Research (cont’d)
Within subject effects were found to be statistically significant F (1, 10) = 9.53, p = .012, η² = .49 with overall endurance from pretest to post-test in the standing group (Pre = 76.60 ± 14.42; Post = 95.00 ± 10.61) and in the seated group (Pre = 72.00 ± 17.23; Post = 80.00 ± 15.60) improving.

Conclusions
The results of this study do not provide evidence that standing exercise is more effective at improving strength and endurance in seniors. A larger sample size and longer duration of exercise intervention may provide significant results. An a priori G*Power analysis test of an ANOVA repeated measures with 2 between factors at an alpha level of .05 and a beta level of .80 suggested the sample would need to be approximately n = 82 to have the appropriate power to conduct the analysis.