Short-term Changes in Resistance Training Exercise Confidence in Young and Older Adults

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ABSTRACT

Improving exercise confidence is essential for untrained individuals to promote long-term exercise adherence. However, it is unclear what training intensity is needed to improve one’s exercise confidence. PURPOSE: To compare changes in resistance training exercise confidence using overload resistance (OR) and minimal resistance (MR) intensities between untrained groups of older adults (OA) and younger adults (YA) over a three-week period. METHODS: 38 untrained OA (mean±SD age: 67.5±5.9 yr) and 28 YA (mean±SD age: 23.3±3.9 yr) with no experience in resistance training were randomly assigned to either OR or MR group. Two exercises were used: the bench press representing a multi-joint exercise, and the triceps pressdown as a single-joint exercise. Subjects performed three sets of 10 repetitions on two days/week for three weeks. Subjects in the OR group trained at 75% of 1RM intensity, while subjects in the MR group used minimal (<10% of 1RM) intensity. Subjects rated their level of confidence on a 100-point visual analog scale with anchors at the end of each week. Data were analyzed using a general linear mixed model. RESULTS: There were no baseline differences in the bench press confidence between OA and YA, as well as between the OR and MR groups using a general linear mixed model with alpha level set at p<0.05. RESULTS: Three sets of ten repetitions were performed for each exercise twice per week for 3 weeks. Significant improvements in exercise confidence were observed for both bench press (p=0.039) and the triceps pressdown (p=0.023). CONCLUSION: Our data showed that untrained OA and YA initially indicated similarly low levels of exercise confidence for the two exercises (p≥0.478) interactions were observed. However, the age (OA vs. YA) by time interaction was significant (p<0.0001). Non-significant group (OR vs. MR) by time (p=0.479) and group (OR vs. MR) by age (OA vs. YA) by time (p=0.478) interactions were observed. However, the age (OA vs. YA) by time interaction was significant for both the bench press (p=0.039) and the triceps pressdown (p=0.023). CONCLUSION: Our data showed that untrained OA and YA initially indicated similarly low levels of exercise confidence for the two resistance training exercises. Exercise confidence improved significantly in both OA and YA regardless of the exercise intensity. Our findings also suggest that exercise confidence of YA increased at a greater rate compared to OA within the three-week period.

INTRODUCTION

• Exercise confidence in resistance training refers to one’s perceived self-assurance of proper movement execution.
• Resistance training exercise confidence may increase by the regular practice of resistance training movements.
• However, it is unclear how resistance training intensity and age may affect changes in exercise confidence in untrained individuals.

METHODS

• Three sets of ten repetitions were performed for each exercise twice per week for 3 weeks.
• Subjects in OR group used resistance of approximately 75% of 1RM.
• Subjects in MR group used very low (i.e., < 10% 1RM) resistance.
• Exercise confidence for each exercise was measured by a 100-point visual analog scale with anchors at the end of each week.
• Data were analyzed using a general linear mixed model.
• Alpha level was set at p<0.05.

RESULTS

Table 1. Descriptive characteristics of the subjects

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Training Group</th>
<th>N</th>
<th>Age (years)¹</th>
<th>Height (cm)</th>
<th>Weight (kg)</th>
<th>BMI (kg/m²)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Adults</td>
<td>OR</td>
<td>14</td>
<td>23.2±4.6</td>
<td>167.0±8.6</td>
<td>72.0±18.0</td>
<td>25.7±5.8</td>
</tr>
<tr>
<td></td>
<td>MR</td>
<td>14</td>
<td>24.4±4.6</td>
<td>167.7±9.5</td>
<td>81.3±22.4</td>
<td>28.6±5.9</td>
</tr>
<tr>
<td>Older Adults</td>
<td>OR</td>
<td>19</td>
<td>67.5±6.3</td>
<td>165.5±7.5</td>
<td>85.2±16.0</td>
<td>31.2±6.2</td>
</tr>
<tr>
<td></td>
<td>MR</td>
<td>19</td>
<td>67.7±6.5</td>
<td>162.5±7.8</td>
<td>75.8±23.4</td>
<td>28.5±7.6</td>
</tr>
</tbody>
</table>

RESULTS

• No baseline age group or training group differences observed.
• Significant improvements in exercise confidence were observed for both exercises in both the young and older adult TR and MR groups (p<0.0001).
• MR groups showed similar exercise confidence improvements as TR groups in both young and older adults (p=0.479).
• Non-significant training group by age group by time interactions observed (p=0.478).
• Significant age group by time interactions observed for both the bench press (p=0.039) and triceps pressdown (p=0.023) exercises.

CONCLUSION

• Resistance training exercise confidence may be improved over a 3-week period by the practice of proper exercise technique with or without using resistance overloads in untrained individuals.
• Exercise confidence may improve faster in young adults compared to older adults, independent of exercise intensity.

METHODS

• Longitudinal training intervention with pre-, mid-, post-test design.
• Untrained young adults and older adults were randomly assigned to OR and MR groups.
• Two exercises were performed, including the Bench Press and Triceps Pressdown movements.

ACKNOWLEDGEMENTS

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