Understanding Balance Challenge across Canada through Fall Prevention Exercise Programs for Older Adults: A Further Analysis from a Cross-sectional Self-Report Survey

Ina Siwach1, Alexie Touchette1, Kathryn M. Sibley1,2

1. University of Manitoba; 2. George and Fay Yee Centre for Healthcare Innovation

Background

As the global population ages at an unprecedented rate, there is a significant need for interventions to prevent falls in community-dwelling older adults [1]. Exercise, specifically balance training, is effective in preventing falls in community-dwelling older adults [2]. Proposed evidence-based exercise recommendations for fall prevention specify that exercise programs should include 3 or more hours of exercise per week, provide a high challenge to balance, and be offered on an ongoing basis [3].

Objectives

1) Described how instructors reported modifying balance challenge and their perception of how challenged their clients were during balance training exercises.
2) Determined which non-verbal indicators of balance challenge are most commonly observed by instructors.
3) The largest proportion of instructors determined balance exercise challenge based on clients’ successful performance of previously completed exercises. Most instructors reported that the exercises fully challenged the balance in the majority (25%) of clients.

Methods

Design: A cross-sectional self-report questionnaire [5].
Participants: Instructors of fall prevention community exercise programs for community-dwelling older adults (≥50 years). Recruitment of participants was performed using a multi-phase online search, through direct contact with potential programs or through referrals to associated contacts.

Participants included in analysis: n=140

Incomplete Surveys: n=10

Returned Surveys: n=121

Identified eligible instructors through personal contact and # of surveys: n=252

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Limitations

• Self report nature of the survey [5]
• Balance challenge is not well operationalized in current literature and may be inaccurately perceived and reported.

Discussion

This analysis described how instructors modify and perceive balance challenge in their clients, explored non-verbal indicators identified as potential markers for balance challenge [6], and prepared the data for additional comparative analysis of methods of assessing balance challenge.

Non-Verbal Indicators

The non-verbal indicators may act as a method of assessing the level of challenge experienced by clients during balance exercises. It can potentially be used as a guide to ensure clients are being fully challenged (i.e., near or at the limits of postural stability) during balance exercises.

With only two instructors observing all nine non-verbal indicators in the majority of clients, findings may suggest that clients are not being fully challenged despite results that the majority of instructors reported that the exercises fully challenged their clients’ balance.

Acknowledgments

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References


Table 1: Non-Verbal Indicators of Balance Challenge

<table>
<thead>
<tr>
<th>Non-verbal Indicators</th>
<th>Seen in majority of exercise clients (&gt;50%)</th>
<th>Seen in minority of exercise clients (&lt;50%)</th>
<th>Not seen</th>
<th>Skipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased sway compared with resting position</td>
<td>68 (49%)</td>
<td>52 (38%)</td>
<td>17 (12%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Ankle strategy</td>
<td>61 (44%)</td>
<td>53 (38%)</td>
<td>21 (15%)</td>
<td>3 (2%)</td>
</tr>
<tr>
<td>Hip strategy</td>
<td>58 (42%)</td>
<td>61 (46%)</td>
<td>17 (12%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Step strategy</td>
<td>61 (44%)</td>
<td>66 (48%)</td>
<td>10 (7%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Reaching (towards something someone else to hold on to)</td>
<td>71 (51%)</td>
<td>52 (38%)</td>
<td>13 (9%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Failing arm</td>
<td>22 (16%)</td>
<td>46 (35%)</td>
<td>60 (49%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Holding arm, leg, or trunk stiff in any position</td>
<td>26 (19%)</td>
<td>54 (39%)</td>
<td>54 (39%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>Making fist(s)</td>
<td>9 (7%)</td>
<td>28 (20%)</td>
<td>99 (71%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Pulling/pulling on own clothing</td>
<td>4 (3%)</td>
<td>18 (13%)</td>
<td>14 (10%)</td>
<td>2 (1%)</td>
</tr>
</tbody>
</table>

*Note: Two responses were excluded for the non-verbal indicators’ analysis due to incompletion (skipping more than 50%) of the survey section.