Functional Status and Fall Risk Among Older Adult Participants in Community-Based Exercise Programs: Do Better Bones & Balance Participants Outperform Their Peers?

College of Public Health and Human Sciences
Presentation Overview

• Study Background and Rationale
• Research Questions
• Study Design
• Methods
• Results
• Conclusions
Prevalence of Falls in Older Adults

• World Health Organization (WHO; 2008)
  • Worldwide 28-35% of adults over 65 fall each year
  • Increases with age.

• United States in 2014
  • 28.7% of older adults reported falling
  • Total of 29 million falls and 7 million injuries
  • 2.8 million were treated in the ER
  • 800,000 required further hospitalization

*Falls are the leading cause of fatal injury and the most common cause of nonfatal trauma-related hospital admissions among adults 65 and over.*

(World Health Organization, 2008), (Burge et al., 2007)
Changing Demographics in the U.S. and Oregon

- US Population continues to increase
- Large increase in 65+ age group
  - 14.9% of the total US Population.
- If we aren’t proactive about reducing the prevalence of falls, we could see fall induced injuries become a bigger issue.
Unmodifiable Risk Factors for Falls

- Increased age
- Gender
- Previous Falls
- Medical Conditions
- Polypharmacy

(World Health Organization, 2008), (Lord, Sherrington, & Menz, 1999)
Modifiable Risk Factors for Falls

- Inactivity
- Impaired Balance
- Slow, Difficult Gait
- Fear of Falling

Engaging in regular physical activity can positively influence all of these factors.

(World Health Organization, 2008), (Lord, Sherrington, & Menz, 1999)
Better Bones & Balance (BBB)
Study Purpose, Design and Participants

**Purpose of this study:** to compare demographics, physical function, and other fall risk factors between BBB participants (≥ 55) to those participating in other community-based fitness programs.

**Study Design:** cross-sectional and will compare BBB participants to non-BBB participants of similar age and sex.

**Study Population:** includes adults ≥ 55 years who regularly participate in BBB and other community-based exercise classes targeting middle and older-age adults.
Study Methods

- **Recruitment**
  - Via LBCC, and other local providers of community-based fitness classes for target population.

- **Survey**
  - 25-questions including demographics, physical activity behaviors (in general and specific to community-based exercise classes), and fall risk factors (e.g. medications, fear of falling, etc.)
Study Methods Cont...

- **Functional Assessment Field Tests**
  - Relevant
  - Sensitive (no ceiling or floor effects)
  - Easy to implement
  - Safe
  - Instructor led and peer-to-peer assessment

- **Pilot tested the process**
# Functional Assessments

<table>
<thead>
<tr>
<th>Assessment Name</th>
<th>Assessment Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Timed Up and Go</td>
<td>This assessment measures mobility. Two trials will be taken and the fastest time recorded.</td>
</tr>
<tr>
<td>2. 5 Times Sit to Stand</td>
<td>This assessment measures lower body strength. Two trials will be taken and the fastest time recorded.</td>
</tr>
<tr>
<td>3. 30 Second Chair Stand</td>
<td>This assessment measures lower body strength. One trial will be run and your score recorded.</td>
</tr>
<tr>
<td>4. 2 Minute Step Test</td>
<td>This assessment tests endurance. One trial will be run and your score recorded.</td>
</tr>
<tr>
<td>5. Tandem Stance</td>
<td>This assessment tests balance. Two trials will be run and your best score recorded.</td>
</tr>
<tr>
<td>6. Single Leg Stance</td>
<td>This assessment tests balance. Two trials will be run and your best score recorded.</td>
</tr>
</tbody>
</table>
Data Collection Process

• Making The Process Easy for Instructors in the Future
  • Assessment Set-up Guide
  • Student Pairs
  • Circuit Style

• Reliability Testing
  • Student Researchers Collecting Data
Data Analyses

• **T-Tests Will Examine Group Differences in:**
  • demographics
  • survey responses
  • functional outcomes

• **Primary Outcomes Will Be Examined by:**
  • analysis of variance
  • adjusting for relevant covariates
Lessons Learned to-date

• Research is a **PROCESS**

• Importance of Protocol
  • **Validity** and **Reliability**

• How to **Manage** a Group of Peers

• **Self-Growth**

• **Critical-Thinking** Skills and Trouble-Shooting in advance
Thank You and Credit Slide

• CHAR
• The Participants and Instructors
• My Wonderful Research Assistants
• And of Course, Dr. Kathy Gunter
Image Citations:

http://www.allaboutseniorsinc.net/falls-and-older-adults-possible-causes-of-falls
http://training.mmlearn.org/blog/topic/falls
Defining a Fall

1. The person comes to rest at a lower position.

2. The lowering of position was not intended (often from a trip, slip, or other loss of balance).

3. The lowering of position was not caused by external factors (e.g. being tripped by a dog).

(Lord, Sherrington, & Menz, 1999)