Protective and Risk Factors for Physical Activity and Falls among Oldest-Old Adults Enrolled in an Evidence-Based Fall Risk Reduction Program

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Background

- Oldest-old adults: 85 years and older
- Population of oldest-old adults
  - Fastest growing segments of the American population
  - Increase from 5.7 million to 19 million by 2050
- Health status and psychological characteristics
  - More functional limitations, less physical activity, higher fear of falling, lower levels of falls efficacy

Falls & Physical Activity among Older Adults

Purpose of Study

1. To assess the changes in weekly physical activity and numbers of falls from baseline to post-AMOB/VLL intervention
2. To explore protective and risk factors associated with weekly physical activity and number of falls

Presenter Disclosure

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months: “No relationships to disclose”

A Matter of Balance/Voluntary Lay Leader (AMOB/VLL) is a major program activity in the Aging Texas Well’s Evidence-based Program Portfolio. State-wide implementation by the Area Agencies on Aging is supported through the Texas Association of Area Agencies on Aging. These analyses were conducted for the Texas A&M Health Science Center School of Rural Public Health Program on Healthy Aging.
Participants

Meeting inclusion criteria (n = 2,298)

Did not complete post-intervention (n = 899)

Target Group (n = 260)

- Oldest-old group: Aged 85+ yrs.
  - Assessed for eligibility (n = 3,276)
  - Excluded (n = 978)
  - Did not meet inclusion criteria: Younger than 65 yrs. (n = 2,804)

Completed post-intervention (n = 1,399)

Compared (n = 1,139)

Young-old group:
- Aged 65–84 yrs.

Oldest-Old vs. Young-Old

<table>
<thead>
<tr>
<th></th>
<th>Oldest-Old Group (n = 260)</th>
<th>Young-Old Group (n = 1,139)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>87.84 (±2.84)</td>
<td>76.43 (±5.24)</td>
<td>.0000</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>59 (23.6)</td>
<td>216 (20.0)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>191 (76.4)</td>
<td>863 (80.0)</td>
<td></td>
</tr>
<tr>
<td>Living status</td>
<td></td>
<td></td>
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<tr>
<td>Living alone</td>
<td>177 (70.2)</td>
<td>575 (52.4)</td>
<td>.0000</td>
</tr>
<tr>
<td>Living with one or more others</td>
<td>75 (29.8)</td>
<td>523 (47.6)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>White not Hispanic</td>
<td>212 (86.5)</td>
<td>775 (72.5)</td>
<td>.0000</td>
</tr>
<tr>
<td>African American</td>
<td>21 (8.6)</td>
<td>202 (18.9)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>12 (4.9)</td>
<td>92 (8.6)</td>
<td></td>
</tr>
<tr>
<td>Education levels</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Less than High School</td>
<td>45 (17.6)</td>
<td>196 (17.6)</td>
<td></td>
</tr>
<tr>
<td>High School Graduate</td>
<td>69 (27.0)</td>
<td>285 (25.6)</td>
<td></td>
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<tr>
<td>More than High School</td>
<td>146 (58.4)</td>
<td>632 (56.8)</td>
<td></td>
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<tr>
<td>Number of sessions attended</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Less than 5 sessions</td>
<td>76 (30.0)</td>
<td>87 (7.1)</td>
<td>.0000</td>
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<tr>
<td>5–8 sessions</td>
<td>246 (94.6)</td>
<td>1,087 (95.9)</td>
<td></td>
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<tr>
<td>9 or more sessions</td>
<td></td>
<td></td>
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<tr>
<td>Ave. number of chronic conditions</td>
<td>1.64 (±1.14)</td>
<td>1.75 (±1.20)</td>
<td>1.58</td>
</tr>
<tr>
<td>Ave. days of physically active (0–7)</td>
<td>3.55 (±2.56)</td>
<td>3.46 (±2.29)</td>
<td>.23</td>
</tr>
<tr>
<td>Ave. number of falls (0–30)</td>
<td>.41 (±1.01)</td>
<td>.40 (±.84)</td>
<td>.93</td>
</tr>
</tbody>
</table>

Measures

- Two Outcomes
  - Physical activity: the number of days physically active in the previous seven days
  - Number of falls: the times of fallen in the previous 30 days

- Covariates: age, sex, race/ethnicity, education, living status, and number of chronic conditions

Analyses

- Generalized linear mixed models with a Poisson distribution
- SAS Proc Glimmix
- Three models compared:
  - Model1: Time
  - Model2: Time, Covariates
  - Model3: Time, Covariates, Protective factors, & Risk factors

Results

- Change in Physically Active Days
  - Significant increases in physically active days between baseline and post-intervention (exp(B) = 1.15, p < .01)

- Change in Number of Falls
  - Significant decreases in number of falls between baseline and post-intervention (exp(B) = 0.70, p < .05)
**Limitations**

- Relatively healthy participants
- Frequencies of outcome variables
- Focused on intrapersonal level in protective and risk factors

**Conclusions**

- Effectiveness of evidence-based programs among oldest-old participants
- Importance of protective and risk factors for improvements in weekly physical activity and number of falls for the oldest-old population
- Generalized linear mixed models with a Poisson distribution