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**Effects of an Evidence-Based Falls-Risk Reduction Program on Physical Activity and Falls Efficacy among Oldest-Old Adults**

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## Acknowledgement

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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

- More functional limitations, less physical activity, higher fear of falling, lower levels of falls efficacy

**A Matter of Balance (AMOB) Falls-Risk Reduction Program**

- **Evidence-based activity program targeting community-dwelling seniors**
  - Incorporates the cognitive-behavioral theories
  - Intended to reduce the fear of falling & increase physical activity levels

- **Participants vs. control group**
  - Falls self-efficacy & falls management
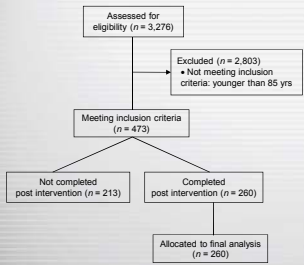  - Baseline vs. 6 weeks & 12 months
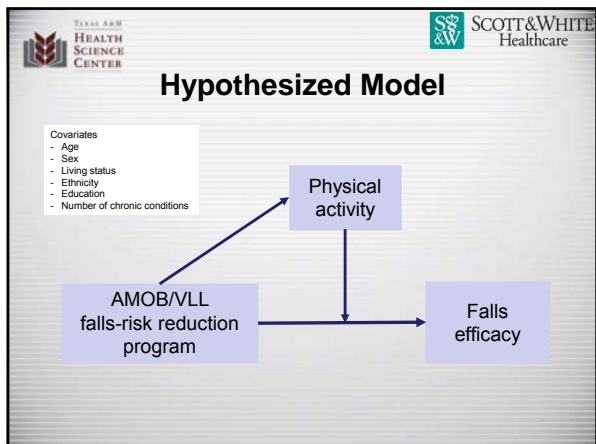
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**Purpose of Study**

- To assess the **changes in falls efficacy and physical activity** from baseline to post-intervention
- To examine the **interaction effect between physical activity improvement and time** (baseline and post-intervention) on falls efficacy

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**Participants**

Assessed for eligibility ($n = 3,276$)

Excluded ($n = 2,803$)
- Not meeting inclusion criteria: younger than 85 yrs

Meeting inclusion criteria ($n = 473$)

Not completed post intervention ($n = 213$)

Completed post intervention ($n = 260$)

Allocated to final analysis ($n = 260$)

| | Frequency | % |
|---|---|---|
| Age | 87.84 (±2.84) | - |
| Sex | | |
| Male | 59 | 23.6 |
| Female | 191 | 76.4 |
| Living status | | |
| Living alone | 177 | 70.2 |
| Living with one or more others | 75 | 29.8 |
| Ethnicity | | |
| White not Hispanic | 212 | 86.5 |
| African American | 21 | 8.6 |
| Hispanic | 12 | 4.9 |
| Education levels | | |
| Less than High School | 45 | 17.6 |
| High School Graduate | 69 | 27.0 |
| More than High School | 142 | 55.5 |
| Number of sessions attended | | |
| Less than 5 sessions | 14 | 5.4 |
| 5–8 sessions | 246 | 94.6 |
| Number of chronic conditions | 1.64 (±1.14) | - |
| Avg. days of physically active (0-7) | 3.55 (±2.56) | - |
| Avg. score of falls efficacy scale (5-20) | 13.58 (±3.92) | - |

## Hypothesized Model

Covariates
- Age
- Sex
- Living status
- Ethnicity
- Education
- Number of chronic conditions

Physical activity

AMOB/VLL falls-risk reduction program

Falls efficacy

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## Measures

- **Personal characteristics:** age, sex, race/ethnicity, education, living status, and number of chronic conditions
- **Falls Efficacy Scale:** Five items from Tennstedt et al. (1998)
  - Can you find a way to get up if you fall
  - Can you find a way to reduce falls
  - Can you protect yourself if you fall
  - Can you increase your physical strength
  - Can you become more steady on your feet
- **Physical activity**: the number of days physically active (e.g., brisk walking, bicycling, vacuuming, gardening, or anything else that causes one to breathe faster) in the previous seven days
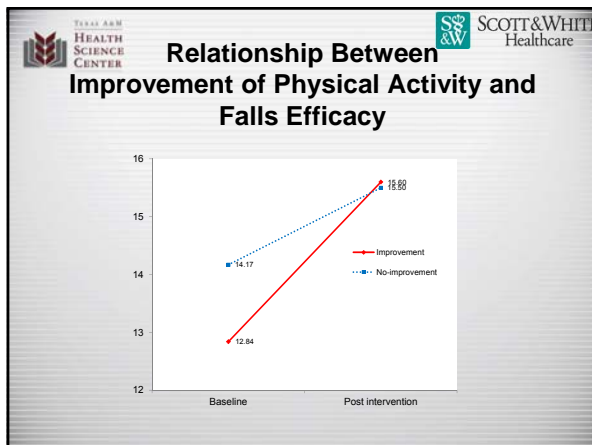
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## Analyses

- **Repeated Measures Analysis of Covariates (ANCOVA)**
- SAS Proc Mixed
- **Two models** compared:
  - Model1: Personal characteristics & Time
  - Model2: Personal characteristics, Time, Physical activity improvement, Time* Physical activity improvement

## Slide 1

**Results**

- **Change in Falls Efficacy (Model 1)**
  - Significant increases in falls efficacy between baseline and post-intervention ($\beta = 1.98$, $p < .001$)

- **Relationship Between Physical Activity Improvement and Falls Efficacy (Model 2)**
  - Significant increases in falls efficacy among physical activity improvement group between baseline and post-intervention ($\beta = 1.43$, $p < .05$)

## Slide 2

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**Relationship Between Improvement of Physical Activity and Falls Efficacy**



Legend: Improvement, No-improvement

Data points: 14.17, 12.84, 15.60, 15.60

X-axis: Baseline, Post intervention

## Slide 3

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**Limitations**

- Self-reported data
- One geographic region of the United States (i.e., Texas)
- Voluntary participation
- Measurement of physical activity

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## Implications and Future Research

- Falls-risk reduction programs should be developed or modified to specifically target different age groups (e.g., younger than 85 years old vs. 85 years old and over).
- Need detailed examination about the relationship between physical activity and other types of functioning (e.g., dementia).

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## Conclusions

- Support the effectiveness of evidence-based programs for reducing falls efficacy among oldest-old participants
- Translational research about dissemination and implementation of evidence-based programs is recommended to enhance intervention strategies for the oldest-old population