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Comparison of Balance Confidence, Balance Performance, and Falls Among Age Groups for Community-Dwelling Older Adults

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Introduction

Balance confidence and balance performance decrease with advancing age, while fear of falling and risks for falls increase among community-dwelling older adults. However it is unclear whether subjective or objective balance measures decline more rapidly. This study identifies four commonly used fall prediction measures: the Activity Specific Balance Confidence Scale (ABC), Fear Avoidance Beliefs Questionnaire (FFABQ), Community Balance and Mobility Scale (CB&M), and Functional Gait Assessment (FGA) to determine whether these measures differ by age group among adults 65 years of age and older. These outcome measures have cut off scores (ABC: <67%, CB&M:<45, FGA<22) that are predictive of future falls among older adults.

Purpose: Identify changes in balance confidence, balance performance, and falls within three age groups: 65-74, 75-84, and 85+.

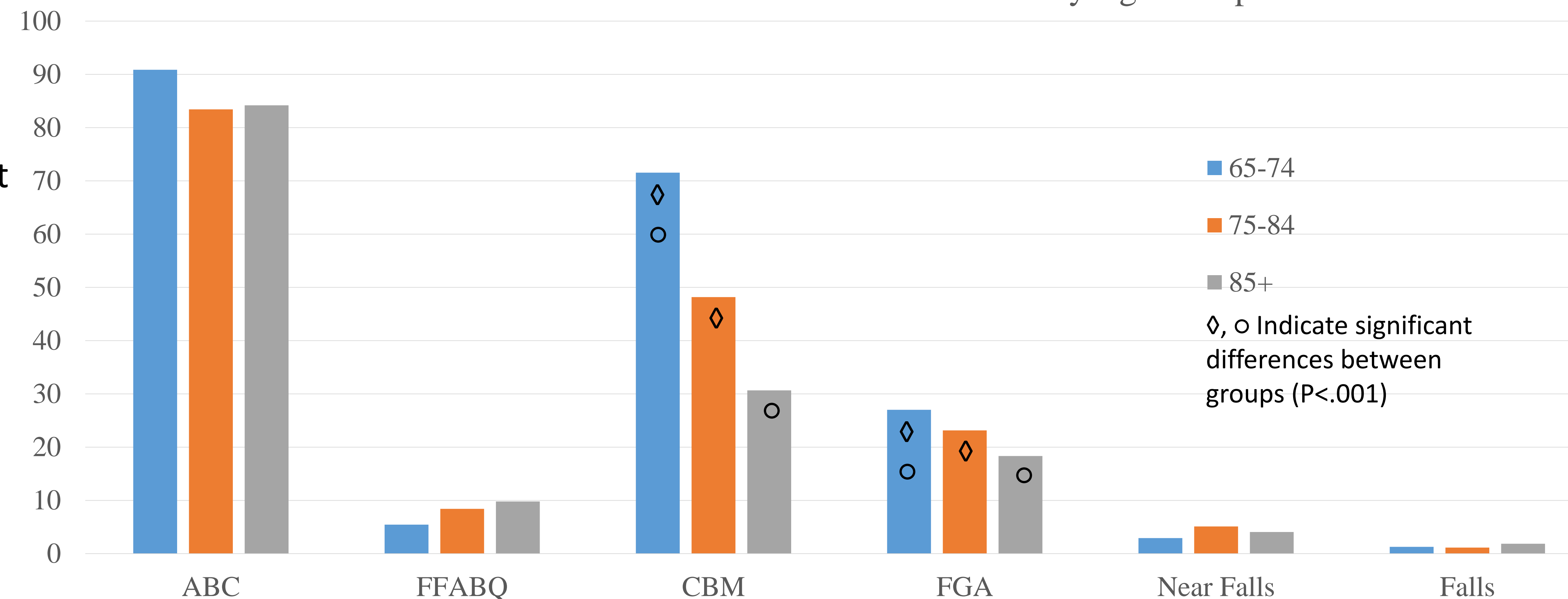
Results

- Median and Range outcome measure values and falls for each age group are reported in Table 2.
- Significant differences were found between the scores of the oldest (85+) age group and the younger two (65-74 and 75-84) for the objective measures: FGA and CB&M (P<0.005).
- No other significant differences were found

Table 2. Results

| | 65-74 years old (n=41) | 75-84 years old (n=33) | 85+ years old (n=15) | Total (n=89) |
|-------------|------------------------|------------------------|----------------------|---------------|
| | Median, Range | Median, Range | Median, Range | Median, Range |
| FGA | 28.0, 5.5 | 24.0, 10.5 | 20, 11 | 26, 12.5 |
| CB&M | 78, 38 | 54.0, 38.5 | 34, 31.5 | 59, 44.5 |
| FFABQ | 2, 19.5 | 5, 22.5 | 5, 13 | 3, 22.5 |
| ABC | 94.4, 22.8 | 88.8, 29.4 | 86.5, 21.7 | 90.6, 29.4 |
| Total Falls | 0, 6 | 0, 8.5 | 1, 5 | 0, 8.5 |
| Near Falls | 1, 24 | 1, 19.5 | 0, 15.5 | 1, 24 |

Mean Values for Outcome Measures and Falls by Age Group



Conclusion

- Older community-dwelling adults (85+ yo) scored lower on performance-based outcome measures than younger adults, though fall rate did not differ among age groups.
- Using an FGA cut-off score of 22, adults 85+ may be at risk for falls.
- Scores on patient-reported outcome measures for balance confidence and fear of falling avoidance behavior were similar among age groups.
- Balance performance, not balance confidence, may decline with age, while frequency of falls and near falls remains consistent.
- Limitations of this study include small and varying sample sizes among age groups and recruitment method largely targeting participants within a small geographical area.

Methods

Table 1. Participant Characteristics

| | 65-74 years old (n=41) | 75-84 years old (n=33) | 85+ years old (n=15) | Total (n=89) |
|----------------------|------------------------|------------------------|----------------------|-------------------------------|
| | Median, Range | Median, Range | Median, Range | N, % total (Mean where noted) |
| Gender | | | | |
| Female | 26 | 20 | 8 | 54, 60.67% |
| Male | 15 | 13 | 7 | 35, 39.33% |
| BMI | 26.94, 20.33 | 27.95, 24.59 | 24.80, 24.12 | Mean: 27.37 |
| OTC meds | 2, 10 | 0, 6 | 0.5, 6 | Mean: 2.00 |
| Prescriptions | 3, 13 | 4, 10 | 2, 8 | Mean: 3.85 |

Design: 89 community-dwelling older adults were recruited throughout the Puget Sound area and stratified into three age groups: 65-74, 75-84, and 85+ years old.

Inclusion: 65 years or older, live independently, walk 20 meters independently or with a single point cane, and score ≥23 on the Montreal Cognitive Assessment (MoCA).

Exclusion: Inability to understand written or spoken English, recent lower extremity orthopedic injury, history of neurologic disorder, unstable or uncontrolled cardiovascular diagnosis, or any pain ≥5 on the VAS.

Outcome measures: All subjects were administered the ABC, FFABQ, CB&M and FGA, and reported falls and near falls each month for 12 months. A one-way ANOVA was used to compare outcome measure scores, falls and near falls between age groups.