

Physical Performance and Falls Risk in a Rural Community of Older Adults in Ghana

Authors:

Bertha Oppong-Yeboah^{1,2}, Jannique van Uffelen¹, Alfred Yawson³, Jos Tournoy¹

¹ KU Leuven, Leuven, Belgium

² University of Health and Allied Sciences, Ho, Ghana

³ University of Ghana, Accra, Ghana

Author Biography: Bertha Oppong-Yeboah

Bertha Oppong-Yeboah is a physiotherapist with over 15 years of experience spanning clinical practice, teaching, research, policy development, and health advocacy. Her expertise covers musculoskeletal, sports, and geriatric physiotherapy in both clinical and academic settings.

She currently lectures at the University of Health and Allied Sciences in Ghana, where she teaches Exercise Therapy, Musculoskeletal Physiotherapy, Sports Physiotherapy, and Geriatric Physiotherapy.

Bertha is the founding president of the Ghana Association of Physiotherapists Working with Older People (GPOP), affiliated with the International Physical Therapists working with Older People (IPTOP), a subgroup of World Physiotherapy. She also chairs the Physiotherapy Profession Specific Committee of Ghana's Allied Health Professions Council, advising on education standards, scope of practice, and professional regulation.

She holds a BSc in Physiotherapy from the University of Ghana and an MSc in Applying Musculoskeletal Physiotherapy from Sheffield Hallam University, UK. She is currently pursuing a PhD at KU Leuven, Belgium, researching frailty, functional fitness, falls, and physical activity among older adults in Ghana.

Background

Falls among older adults represent a significant public health concern. Research shows that better functional fitness is associated with reduced fall risk. Physical performance indicators are often used to predict fall risk.

However, limited research exists on fall prevalence and risk among community-dwelling older adults in Ghana. Additionally, clinical and research application of physical performance tests is limited by the lack of population-specific reference values.

Purpose

This study aimed to:

1. Assess physical performance, past-year fall prevalence, and fall risk among older adults in a rural Ghanaian district.
2. Explore the association between functional performance test scores and both fall history and high fall risk.

Methods

A preliminary cross-sectional study was conducted involving adults aged ≥ 60 years from three villages in the Okere District. Participants completed four functional performance tests:

- Short Physical Performance Battery (SPPB)
- 8-foot Up-and-Go (8FUG)
- 4-meter Walk Speed
- Hand Grip Strength (HGS)

Fall risk and fall history were assessed using the Fall-Risk Questionnaire (FRQ).

Statistical analyses included:

- Pearson correlation to assess relationships between test scores and FRQ scores
- Chi-square and logistic regression to examine associations using categorized test scores based on reference values

Results

- Participants: 43 older adults (mean age = 72.1 ± 9.2 years; 62.7% female)
- Past-year fall prevalence: 32.5%
- High fall risk (per FRQ): 48.8%

Median scores (Q1, Q3):

- SPPB: 10 (8, 11)
- 8FUG: 9.88 (8.53, 11.81) seconds
- Walk speed: 0.87 (0.7, 1.04) m/s
- HGS: 19.67 (17.6, 24.67) kg

Categorized findings (using sub-Saharan reference values):

- Low walk speed: 0%
- Weak HGS: 4.6%
- Adequate 8FUG time: 2.3%
- Low functional mobility (SPPB 1st quartile): 16.2%

Conclusions

This rural Ghanaian population showed high rates of fall risk and past-year falls. When analyzed as continuous data, the four functional tests correlated with fall risk. However, no significant association was found when categorized using reference values, underscoring the need for population-specific norms, especially for the 8FUG.

Implications

Though these tests may not be suitable for fall risk screening in this population without proper reference values, they remain valuable outcome measures for monitoring functional changes during rehabilitation. Further research should aim to establish normative data tailored to the Ghanaian older adult population.