



Impact of Assistive Device Use During Timed Up and Go in Healthy Adults

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Introduction

Background:

- Falls are a leading cause of injury in older adults¹. The physical, psychological, and financial cost of falling in this population necessitates a reliable balance assessment to determine fall risk²⁻⁴.
- The Timed Up and Go (TUG) is often used to assess fall risk due to its simplicity and allowed use of all assistive devices (ADs)⁵.
- The cutoff score for falls risk among community dwelling older adults is 13.5 seconds⁵.
- The impact of AD use on TUG score and interpretation is not well understood.

Purpose: To better understand the impact that AD use has on completion times of the TUG in healthy adults.

Hypothesis: The use of an assistive device will significantly increase the time to complete the TUG. Use of a narrow-based quad cane will produce slower times than the front-wheeled walker.

Methods

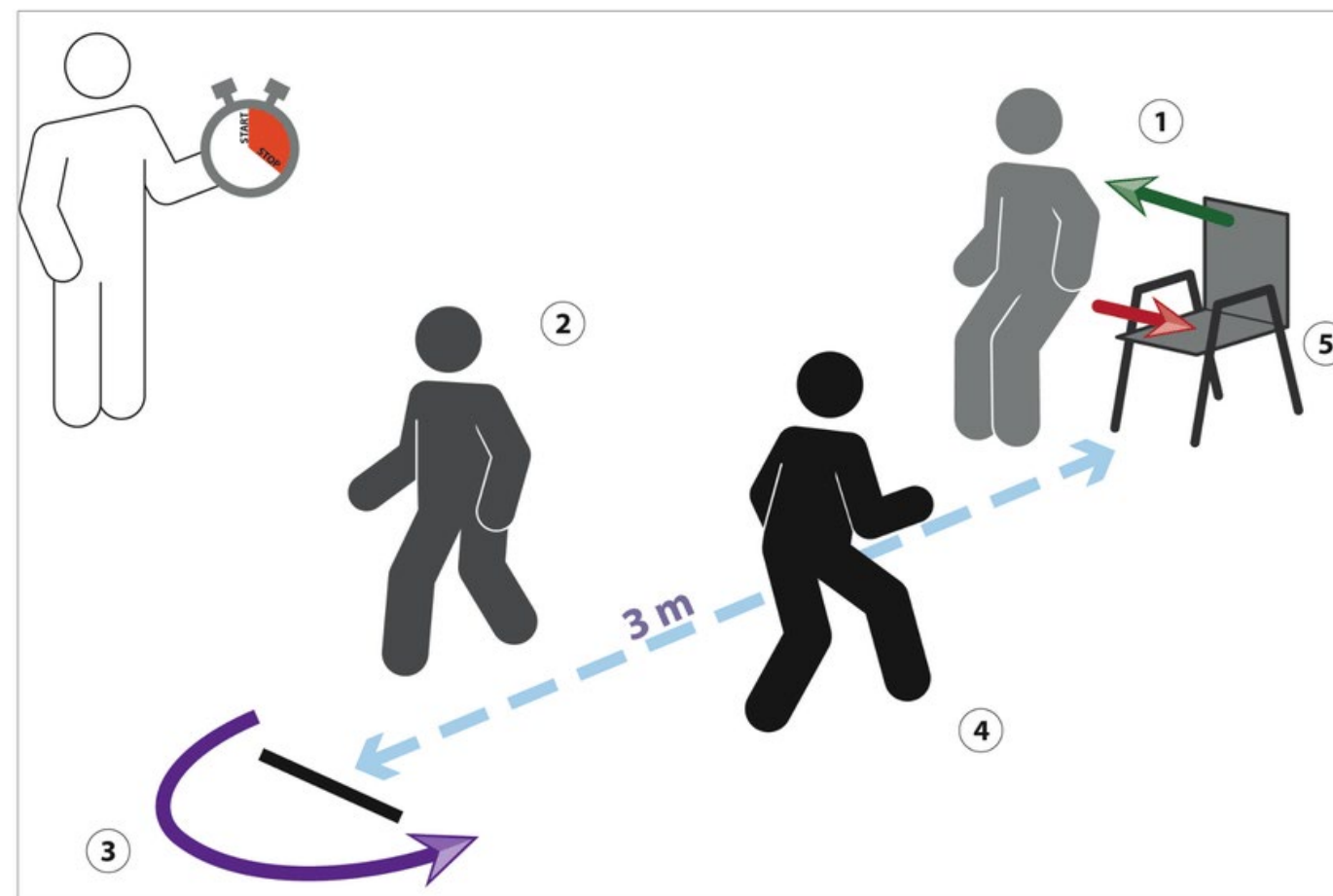
Participants: Recruited from Concordia University-St. Paul DPT students

- 29 healthy adults (14 female, 15 male)
- Mean age of 23.7 years old
- No comorbidities that may impair balance

Tests and Measures: Participants randomly completed the full TUG (1 practice trial, 3 timed trials) under each of the three conditions:

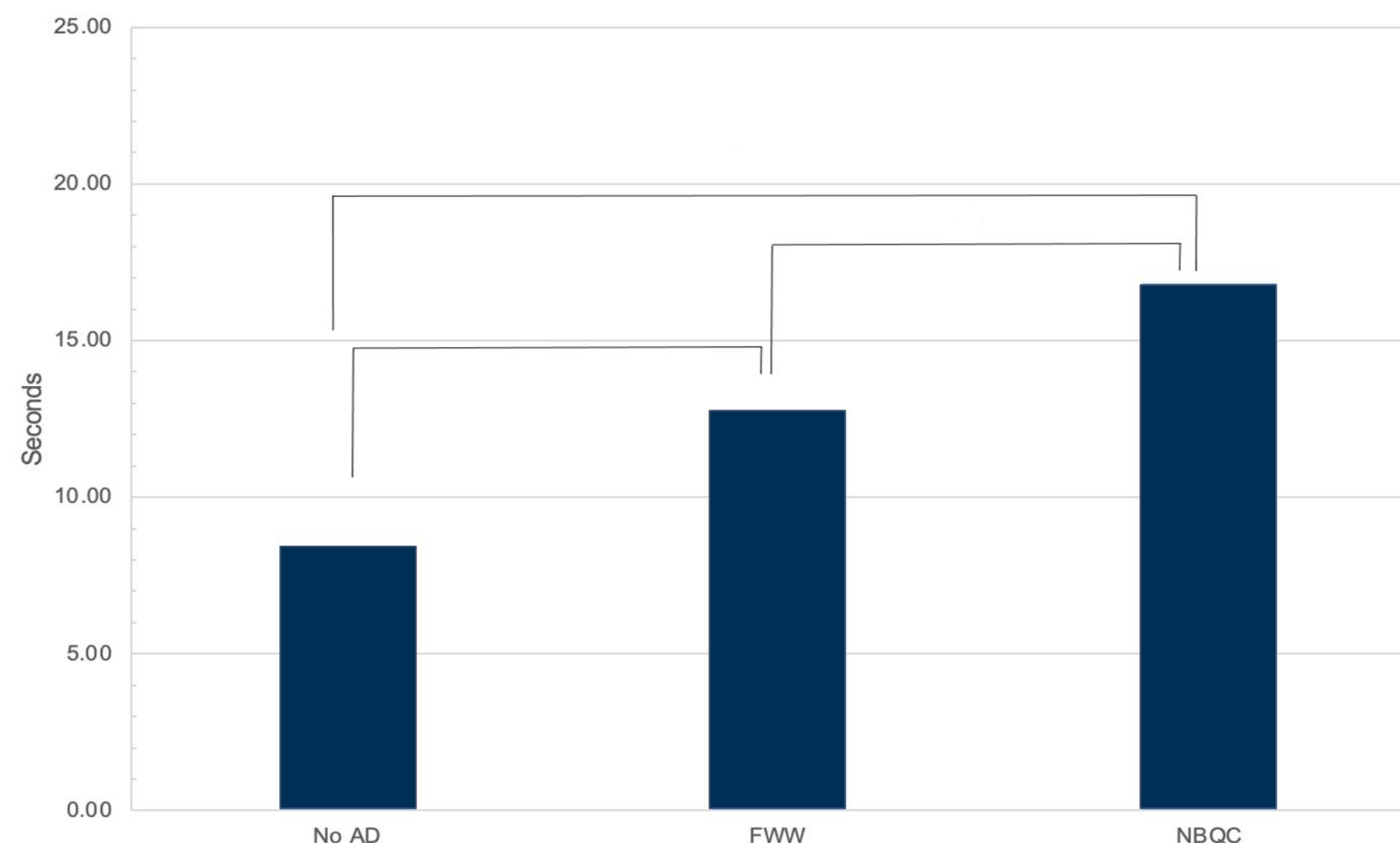
- No assistive device
- Using a narrow based quad cane (NBQC)
- Using a front wheeled walker (FWW)

Data Analysis: Comparison between average TUG times under each condition with Friedman ANOVA ($p < 0.05$)



Results

- There were statistically significant differences between all conditions
- Average time to complete the TUG was 8.42 seconds without the use of an AD, 12.78 seconds with the FWW, and 16.80 seconds when using the NBQC.



Conclusion

- The use of a FWW and NBQC caused a statistically significant increase in time to complete the TUG compared to without an AD.
- Average time using the FWW approached the 13.5 second cut off
- Average time using the NBQC exceeded the cutoff by more than three seconds.

Clinical Relevance

Clinicians should consider the impact that assistive devices may have on TUG scores. These results show that AD use alone negatively impacts time to complete the test with healthy young adults. In fact, use of a NBQC incorrectly placed participants in a fall risk category based on the widely accepted cutoff of 13.5 seconds. Based on these findings, clinicians should exercise caution when utilizing the standard 13.5 second TUG cutoff score to determine fall risk, develop goals, or inform rehabilitation needs.

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References

