

# The Effects of Dual-Tasking on Fall Risks in Adults with Brain Injury

Kaley Campbell, MOT/S, Anayston Casey, MOT/S, Madison Culpepper, MOT/S, Elizabeth Denton, MOT/S, Katie Morgan, MOT/S  
 Faculty Advisor: Anita Witt Mitchell, PhD, OTR, FAOTA Practitioner-Mentor: Jennifer Clone, OTR/L

## PICO QUESTION

In adults with brain injury, is dual-tasking effective for decreasing fall risk?

## BACKGROUND AND RATIONALE

Significance

It is common for various therapeutic disciplines to target either physical or cognitive components, but not both at the same time.

Intervention

Dual-tasking combines both physical and cognitive components into one therapeutic intervention.

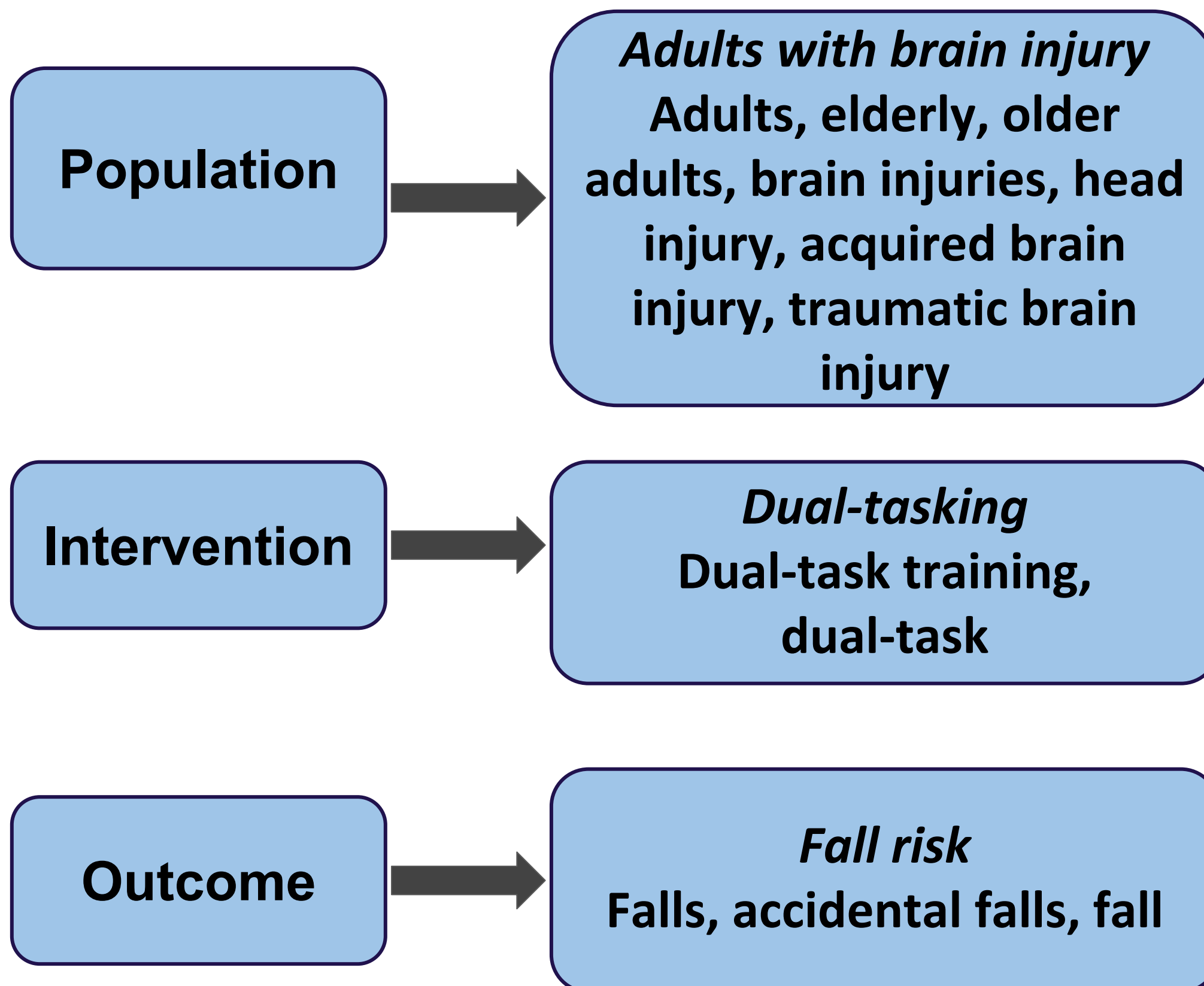
Purpose

To create a more functional, realistic scenario to promote generalization of skills

## SEARCH METHODOLOGY

### Databases and Websites Searched:

CINAHL, MEDLINE, PubMed, Web of Science, Cochrane Library, Science.gov, Scopus, JSTOR, Clinical Key



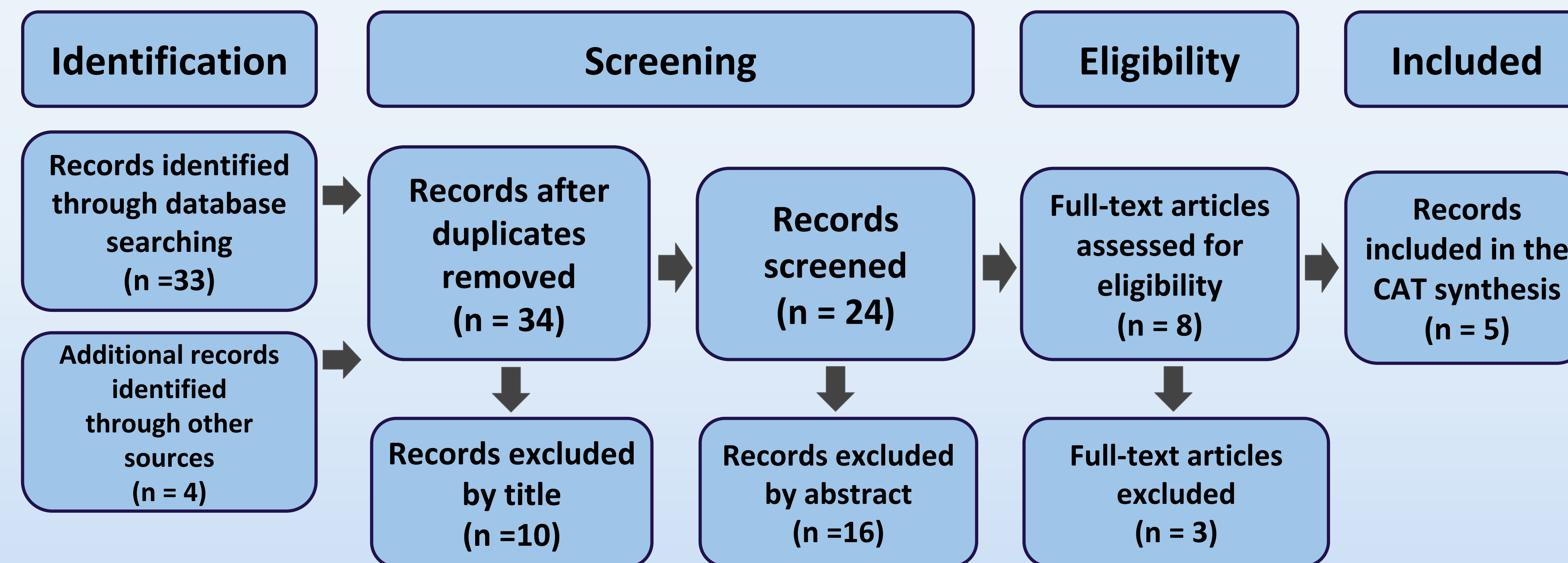
### Inclusion Criteria

- Adults with brain injury, including CVA and TBI
- Dual-tasking in relation to fall risk, balance, or gait
- Full text articles
- English only

### Exclusion Criteria

- Narrative reviews
- Articles including veteran populations

## SEARCH RESULTS



## CLINICAL BOTTOM LINES

- Strong evidence suggests that dual-tasking decreases fall risks in adults with brain injury.
- Effective interventions ranged from 3 times per week for 60 minutes over 8 weeks to 7 times per week for 15 minutes over 1 week.
- For adults with brain injuries, there is potential for carryover into everyday life after dual-tasking activities.

## MAIN FINDINGS AND LIMITATIONS

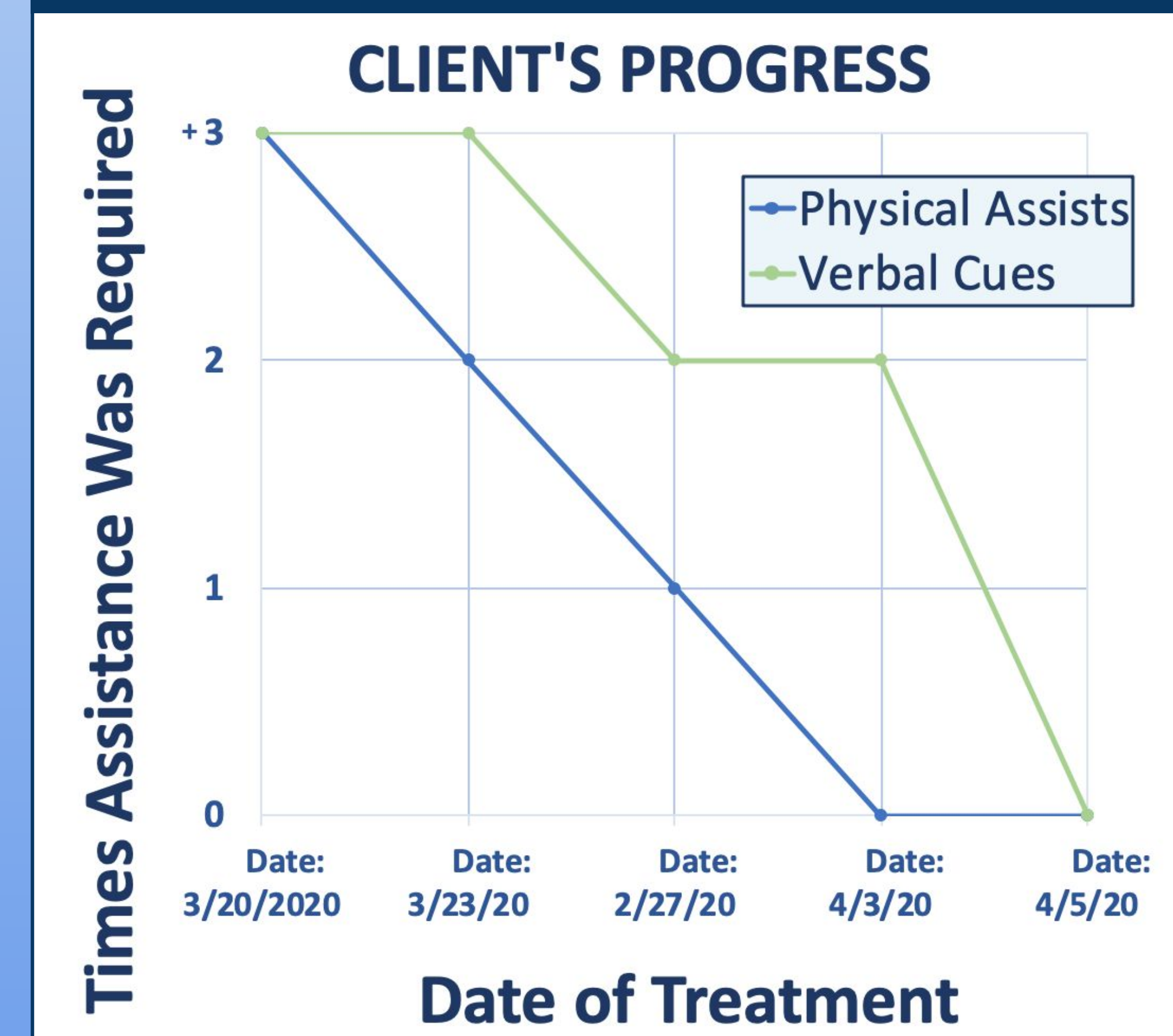
Level of Evidence	Study & Quality Rating	Findings (+ Statistically significant, - Not statistically significant)	Limitations
Level I	Pang et al. (2018); 88%	+ Walking + Reducing fall incidence	<ul style="list-style-type: none"> <li>Inconsistent session times</li> <li>CVA only</li> <li>Small sample</li> <li>Convenience sampling</li> <li>Multiple treatments</li> <li>Attrition</li> </ul>
	Wang et al. (2015); 88%	+ Center of pressure sway area and Berg Balance Scale scores - Center of pressure distance or the Timed Get Up & Go Test scores	<ul style="list-style-type: none"> <li>CVA only</li> <li>Small sample</li> <li>Included studies without blinding</li> <li>Short follow-up periods</li> </ul>
Level II	Perione, Gloria, & Anselmino (2014); 80%	+ Balance Evaluation System scores - Activities-specific Balance Confidence Scale scores	<ul style="list-style-type: none"> <li>Small sample</li> </ul>
	Evans, Greenfield, Wilson, & Bateman (2009); 62%	+ Satisfaction with performance of daily activities	<ul style="list-style-type: none"> <li>Small sample</li> <li>Not blinded</li> </ul>
Level IV	Fritz & Basso (2013); 100%	+ Walking speed + Time to descend stairs	<ul style="list-style-type: none"> <li>Multiple treatments</li> </ul>

## RECOMMENDATIONS FOR IMPLEMENTATION

More research is needed to fully determine the effectiveness of dual-tasking for reducing fall risks.

Close monitoring of the effects of dual-tasking is recommended.

## EXAMPLE METHOD FOR MONITORING



## BLANK CHART



## REFERENCES

