Department of Occupational Therapy Entry-Level Capstone Projects

Department of Occupational Therapy

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# Fall Prevention & Vision Therapy Program for Inpatient Rehab

James P. Ryan
jr3307@mynsu.nova.edu

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# Fall Prevention & Vision Therapy Program for Inpatient Rehab

James Ryan, OTD-S
Stephen Pearce, OTR/L & HCA Largo West Hospital

**NSU Florida**
Tampa Bay Regional Campus
NOVA SOUTHEASTERN UNIVERSITY

## Introduction

- Roughly 646,000 fatal falls occur each year, around 37.3 million falls require medical attention due to fractures, disability, loss of independence, and other long-term ailments resulting in a public health problem.
- 12 million people 40 years of age and older in the United States have some form of vision impairment.
- Visual impairment can negatively influence an individual's quality of life via loss of confidence, diminished mobility, depth perception difficulties and increased risk of falls.

**HCA Healthcare**

HCA Healthcare. (2022). HCA logo [Photograph]. https://southfloridahospitalnews.com/hca-healthcare-announces-operational-reorganization/

## Site Description

**HCA Largo West Hospital** is an inpatient facility with two rehabilitation and two behavioral health units.

- Most patients are 65+ with neurologic conditions. However, other common populations include cardiac, orthopedic, pulmonary and debility conditions.
- The main role of OT in this setting is to evaluate patients, provide specific interventions that allow patients improve in deficient areas (strength, Rom, etc.) and to complete their ADL routines as independently, effectively and efficiently as possible before discharge.

## Summary of Needs Assessment

An unfamiliar hospital setting combined with patient ailments can drastically increase the risk of hospitalized older adults sustaining a fall. These falls commonly cause severe injury such as fractures, introduce or worsen a fear of falling and delay recovery. Resulting in a longer, more expensive hospital stay (Morris & O'Riordan, 2017).

- HCA Inpatient Fall Stats Feb.-Apr. 2023 **11 Falls** (pre project)
- HCA Inpatient Fall Stats May.-Jul. 2023 **7 Falls** (during)

The incidence of new-onset visual impairment following a stroke are positioned at around 60% (Rowe, et al., 2019).

- From June 2021-June 2022 HCA Largo West admitted **129** patients who suffered a CVA (**24.52%** of yearly admissions)
- Neurologic conditions (including CVA) comprised **70.91%** of yearly admissions.

**FALL RISK**

American Nurse. (2015). Fall wrist band [Photograph]. https://www.myamericannurse.com/tailoring-falls-prevention-interventions/

## Literature Review Summary

- The National Institute for Health recommends that all inpatients over the age of 65 or between 50-64 years identified as a high fall risk should be considered the most at-risk population and should have a multifactorial falls risk assessment.
- Identification of multiple underlying risk factors combined with effective interventions to address each has been proven to minimize the occurrence of inpatient falls by up to 20–30%.
- Utilizing single interventions, for example, fall risk wristbands, bed signage, medication review, urinalysis, vitamin D prescription, and bed/chair alarms has proven unsuccessful in decreasing fall rates. However, identifying and accounting for a patients intrinsic and extrinsic risk factors via screenings, assessments and targeted interventions often has more positive outcomes (Morris & O'Riordan, 2017).
- The most successful fall prevention programs incorporated a complete personal assessment, individual safety recommendations, and a multidisciplinary program with strategies tailored specifically to the setting and individual participants (Neyens et al., 2011).
- When healthcare professionals consistently provided education via one-on-one instruction it encouraged participation in rehabilitation interventions and allowed patients to develop a proficiency of fall prevention knowledge (Wu et al., 2022).
- Identifying patients with visual impairments, providing early interventions and compensatory strategies may positively influence general rehabilitation, quality of life and activities of daily living (Rowe et al., 2018).



Figure 1: Chart displaying elements of the fall prevention program

## Capstone Project Description

Program Overview:
- 3-month program focused on providing patient specific interventions for visual deficits and fall prevention education
- Compared MVPT-4 to TUG Test to determine efficacy as a fall risk assessment
- Determine patients of highest fall risk based on MVPT-4 and screening results
- 1-on-1 sessions 30 mins
- Total: 123 intervention sessions-98 Fall Risk/Vision Screenings-33 MVPT-4 Assessments Administered
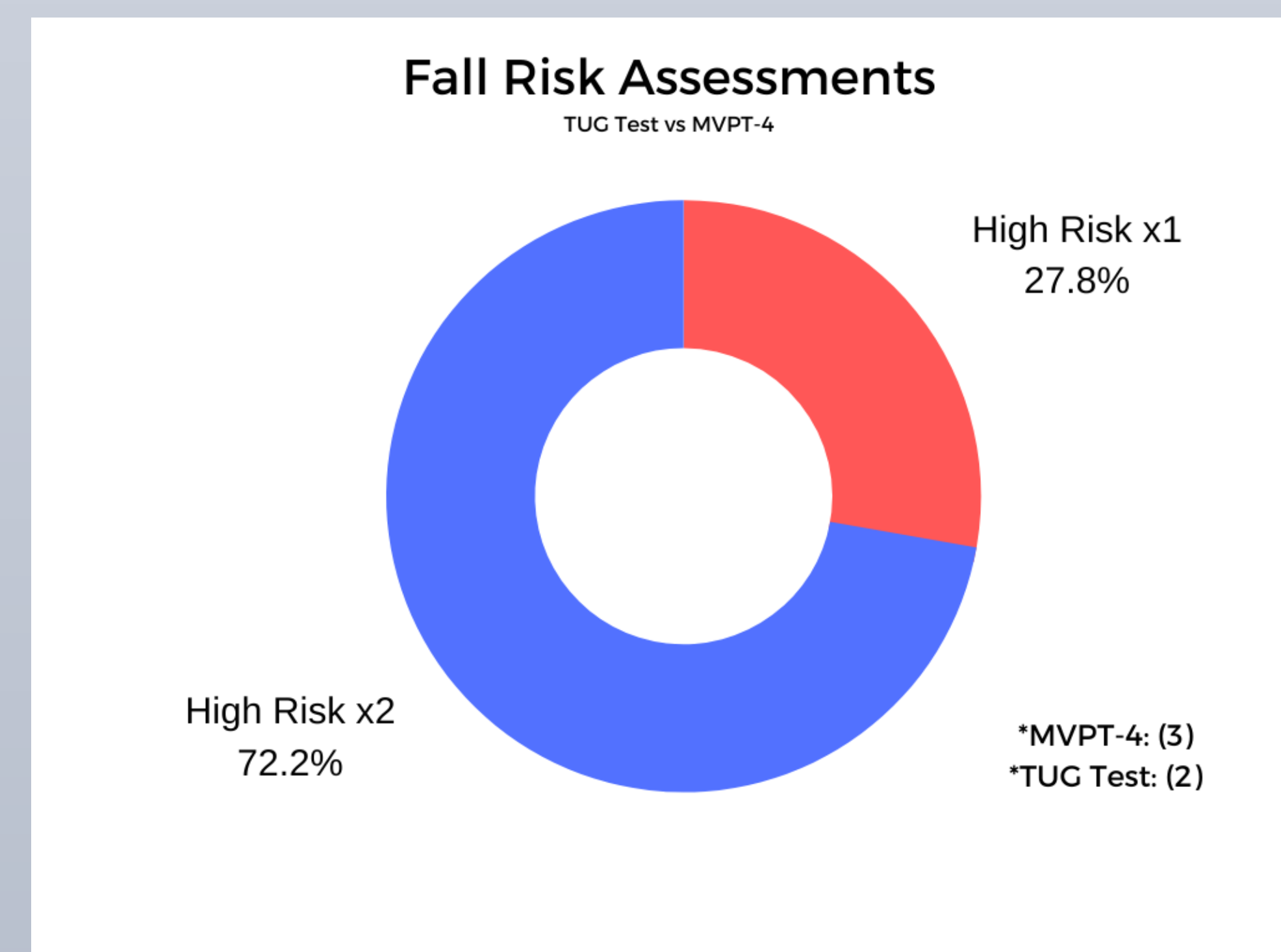


**Fall Risk Assessments**
TUG Test vs MVPT-4

High Risk x1 27.8%
High Risk x2 72.2%
*MVPT-4: (3)
*TUG Test: (2)

Figure 2: Graph for MVPT-4 vs TUG to display how visual perception deficits correlate to fall risk or adds additional patient information
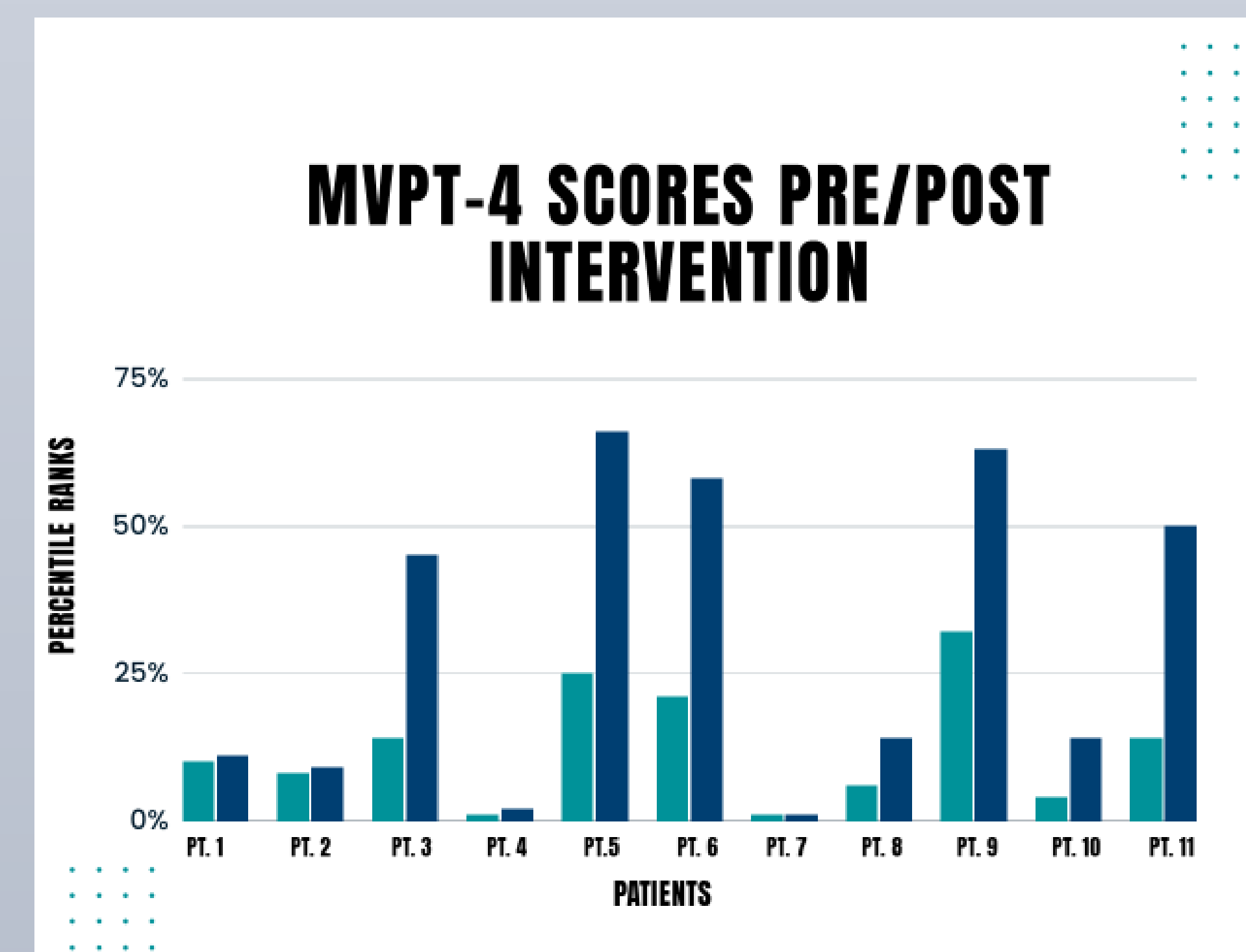


**MVPT-4 SCORES PRE/POST INTERVENTION**

Figure 3: Graph for pts admission/discharge MVPT score changes

## Learning Objectives Achieved

- Created an evidence-based program to determine patients true fall risk within this inpatient setting.
- Determined MVPT-4 and TUG Test results to be of equal importance in determining fall risk.
- Increased outcome MVPT-4 percentile rank in 91% of patients.
- Reduced the number of falls sustained by the adult population within the facility.
- Created and presented a proposal for the facility to purchase the MVPT-4 assessment.
- Provided multiple in-service presentations on screenings/assessments to further educate therapy staff on fall prevention and vision therapy interventions utilized throughout the project.
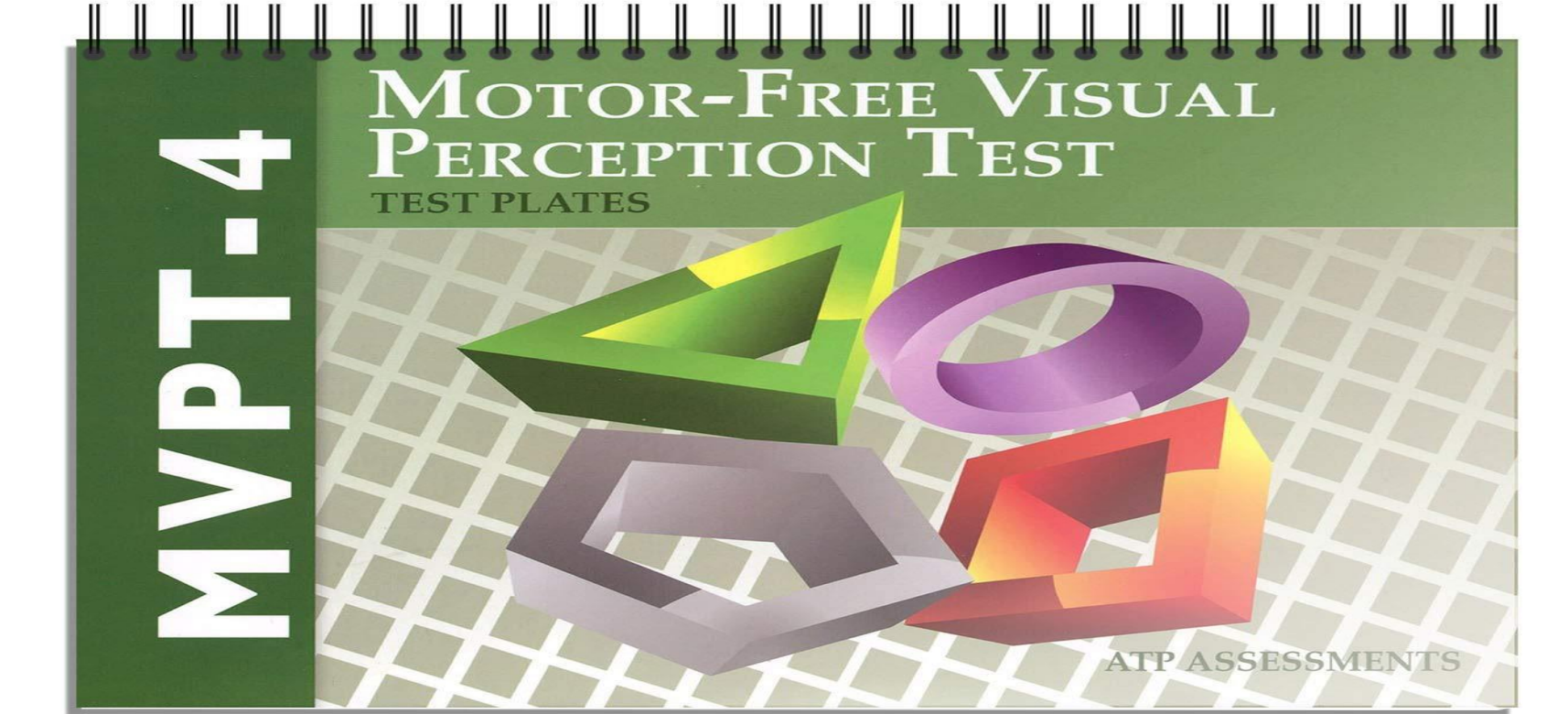


Figure 4: MVPT-4 Assessment

## Implications for OT Practice

- Assessment of mobility and visual perception provides the best indication of fall risk
- Spatial relationship deficits often correlates to higher fall risk
- Provide visual perception interventions for all areas, not strictly for areas of deficit
- Provide fall prevention/home modification education in a consistent repetitive manner to maximize retention and carryover (specifically with elderly/cognitively impaired patients)
- The Health Belief Model (HBM) is an effective way to comprehend patient perspective on fall risk/prevention
- Multidiscipline collaboration allows greatest chance for successful fall prevention program

## References & Acknowledgements