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### Objectives

- Describe the prevalence of falls, and the costs associated with falls in the home
- Highlight OTs unique skill set to assess individuals and the home environment, promoting ourselves as leaders in home safety and home modifications supported by evidenced based research
- Identify avenues for collaboration with clients across diverse industry sectors that will promote advocacy for the OT profession and viable revenue streams for a home modification business or service line

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- Graduate of UTHSC
- OT for 21 years
- MSA Healthcare Admin CMU
- Worked in variety of settings as staff OT and in mgmt
- Home health niche
- Certified Aging In Place Specialist (NAHB)
- Executive Certification in Home Modification (USC)
- Certified Fall Prevention Specialist (PESI)
- Small Residential Contractor


### About Me

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- The U.S. population is aging
- Today, there are than 46 million older adults age 65+
- That number is expected to grow to 90 million by 2050
- By 2032, the seniors population is projected to increase by 18 million due to the last baby boomer cohort
- 1 in 5 Americans is projected to be 65+ by 2030
- In TN, number of seniors aged 60+ expected to increase by 30% from 1.6 million in 2020 to 2.1million in 2040

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- One-fourth of Americans aged 65+ fall each year
- Every 11 seconds, an older adult is seen in an ER for a fall-related injury
- Falls are the most common cause of TBI
- 60% of falls happen inside the home
- Falls and their after effects cost the U.S. healthcare system approx \$50 billion annually
- In 2018, approx 30% of older adults in TN reported a fall

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- 61 million adults in the U.S. live with a disability
- This excludes the 1.2 million in nursing facilities
- 1 in 4, or 26%, of adults in the U.S. have some type of disability
- The percentage of peopel living with a disability is highest in southern states
- Prevalence of people with a disability (all ages) in TN is 15.5%

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According to the CDC,

**1 in 4 Americans**

has a disability that affects how they interact with their environment to perform daily tasks.



**Only 0.15%**

of all homes in the U.S. are wheelchair accessible

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Occupational therapy practitioners have a holistic perspective, in which the focus is on adapting the environment and/or task to fit the person, and the person is an integral part of the therapy team. It is an evidence-based practice deeply rooted in science.

- AOTA

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**"Occupational therapy practitioners have a long established proficiency in addressing the impact of the environment on occupational performance. As such, home modification recommendations and services fall well within the scope of occupational therapy and are recognized in most state practice acts."**

(AOTA 2020)

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Home Hazard Removal Program - HARP**

- Newly Improved Evidenced Based Program through ACL
- Funder through Older Americans Act, Title IIID, Prevention & Public Health Fund Fall Prevention Grants
- Met ACL's definition of evidenced-based (tool used NCOA)
- Assessment by OT, Intervention, Intervention Plan, Training
- 310 Participants (155 randomized to the intervention; 155 randomized to usual care;
- Outcomes - Avg, per-person # of falls over 12 months for the HARP group 1.5, compared to 2.3 in control group
- Participants who received HARP had a 38% reduction in their rate of falls; grab bar most frequent home mod
- Per-participant cost of HARP: \$765.83; Decrease in healthcare cost utilization: \$1,613.63; 111% ROI!

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Effects of Home Mod Interventions on the Participation of Community Dwelling Adults with Health Conditions: A Systematic Review**

• Stark, Keigloviets, Arbesman, Lieberman - 2017

• 36 articles reviewed

- Strong evidence supporting single and multi-component interventions including home modifications resulted in the following:
  - Improved function for people with a variety of conditions
  - Reduced risk and rate of falls
  - Reduced demand on caregivers

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Community Aging In Place, Advancing Better Living for Elders Program (CAPABLE)**

- Interdisciplinary team of professionals; Handyman: up to \$1500 in home repairs, modifications and/or AE
- Evidenced based 5 month program
- Addresses home environment
- Designed to increase mobility, functional ability & ability to age in place
- Increases function and lowers hospitalization & nursing home rates
- Cost Effect: Program cost on average \$2,825/person \$22,000 in reduced Medicare costs over 2 years

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Randomized Controlled Trial of Prevention of Falls in People Aged > or = to 75 with Severe Visual Impairment: VIP trial - Campbell, et al 2005**

- Home safety Program n=100; Home Hazard Asmt performed by an OT; Home Mods; Recommendations for Behavior Change
- Otago Exercise Program and Vitamin D supplementation n=97
- Combination of Home Safety & Exercise Program n=98
- Social Visits n=96
- Outcome: Home Safety Program reduced falls and was more cost effective than the exercise program

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Home Assessment and Modification Pighillis, et al. - 2011**

- OT or Home Care Worker completed a Home Assessment
- Study found intervention only effective when implemented by OTs.
- Fall rates reduced by 46% of those with assessments performed by OTs

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Unmet Need for Equipment to Help Bathing & Toileting Among Older U.S. Adults Lam, Shi, Boscardin - 2021**

- 2614 community dwelling older adults
- 42% of individuals 65+ lacked grab bars or appropriate bathroom AE to help them bathe /toilet
- Providers should ask about their home set, if clients are having increased falls or impairments
- Home safety tools that can empower clients and caregivers to identify hazards and solutions
- Home Safety Assessment to be completed by an OT
- Collaborative approach for installation

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Unmet Need for Equipment to Help Bathing & Toileting Among Older U.S. Adults Lam, Shi, Boscardin - 2021**

- Why older adults lack necessary AE?
  - Don't know when or what AE is needed
  - Don't know how to get AE or how to install
  - Confused about services available
  - Adults aren't educated on products that may be needed as they age

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Unmet Need for Equipment to Help Bathing & Toileting Among Older U.S. Adults Lam, Shi, Boscardin - 2021**

- Few Providers skilled at:
  - Identifying disability that warrants equipment
  - Asking questions about the home environment
  - Educating on available options and making appropriate recommendations
  - Referring clients to the right resources for the solutions they need

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**Evidenced-Based Research Supporting OT in Home Modifications**

**Handicap Accessible Homes May Improve Brain Function in People with Disabilities Farzan - 2019**

- 70% of older adults live in homes without any accessibility features.
- Those who live alone and have a disability have a quicker decline in brain function.
- < 4% of housing has single floor living, no steps into home, & appropriate size doorways & hallways for wheelchairs
- Accessible spaces improve physical health & reduce falls

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### Evidenced-Based Research Supporting OT in Home Modifications

#### Handicap Accessible Homes May Improve Brain Function in People with Disabilities

**Farzan - 2019**

- Older adults who had at least 1 accessible feature were less likely to have brain function decline or memory loss
- The home environment has a direct effect on both physical and mental health
- Article linked to Home Environment, Living Alone, and Trajectories of Cognitive Function Among Older Adults with Functional Limitations. Park, Kim, Amano, & Chen (2021)

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### Evidenced-Based Research Supporting OT in Home Modifications

#### CDC: The Potential to Reduce Falls & Avert Costs by Clinically Managing Fall Risk

**Stevens & Lee - 2018**

- Stevens & Lee Am J Prev Med. 2018 Sep; 55(3): 390-297. doi: 10.1016/j.amepre.2018.04.035
- Systematic Review of > 19 rigorous RCT with falls as outcome from '94-'17
- "The interventions with the potential to help the potential to help the greatest number of older adults were those that provided home modifications delivered by an OT (38.2 million)n and recommended daily vitamin D supplements (16.7 million)
- Home Modifications delivered by an OT have the potential to reduce 120,438 falls per year for an averted cost of \$442 million

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### Legislation Promoting Home Modifications

**Fair Housing Act**  
Reasonable accommodations


**Older Americans Act**  
funds critical services for olders adults -fall prevention & home mods

**Chronic Care Act**  
MA plans  
in home safety modifications

**Homes Renewed**  
tax incentives for home owners  
aging in place

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### Our Clients



Enhancing the Point of View of the Value of OT in Home Safety & Home Modifications

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### Clients Referrals

- Our Patients
- Adult Children - Aging
- Parents Social Workers
- Case Managers
- Physicians  
MIPS 154; MIPS 155
- Insurance Companies
- Work Comp

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### Clients Referrals

- DME Providers
- Realtors - SRES
- Contractors/Home Builders
- Local government-HUD  
CIL- HAP; OAHMP
- Special Population Groups  
MS, Parkinson's, SCI,  
DIDDS,  
Low vision, Dementia, etc
- Community Programs  
Area Agency on Aging, AARP, CAPABLE,  
Habitat for Humanity, Life Coordinated

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## Clients Referrals

- Fellow Colleagues
- Therapy outpatient
- Pediatrics  
CP, Autism - calming rooms
- Architects/Universal Design
- Interior Designers
- ATPs

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## CDC'S STEADI INITIATIVE

### Stopping Elderly Accidents, Deaths, and Injuries

- PT FOR GAIT & BALANCE
- COMMUNITY FALLS PREVENTION PROGRAMS
- OPTIMIZE MEDICATIONS
- HOME SAFETY EVALUATIONS PERFORMED BY OTS
- ADDRESS POSTURAL HYPOTENSION
- ASSESS & MANAGE CHRONIC CONDITIONS
- EDUCATION ON FALL RISKS & ENGAGED CLIENT IN PREVENTION PLAN
- REFERRALS TO SPECIALISTS, I.E. OPHTHALMOLOGISTS, PODIATRISTS
- VIT D SUPPLEMENTS

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## Reimbursement/Funding for Home Modifications

- Billable through insurance as long as medically necessary
- Self/Private pay - if not medically necessary
- Grant Funding- non-profits & for profits
- Workman's Compensation
- Auto No-Fault


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## The Process



<b>ASSESSMENT</b> IHOPE, Home for Life, Design, COPM, STEADI Initiative, Custom Evaluations (specific measurements for reach, wc height, leg height, door widths, etc).	<b>IMPLEMENTATION PLAN/ POC</b> Develop POC, including equipment recommendations & training
<b>IMPLEMENTATION</b> Equipment installation, interventions, trainings	<b>FOLLOW -UP</b> 3-6 months after discharge


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Fragmented home based delivery systems make this initiative extremely difficult resulting in decreased independence, patient and caregiver injury, delays in receiving the appropriate adaptive equipment, and a waste of financial resources. OTs in home mods are dedicated to bridging the gap between the the health and well being of older adults and the dwellings they live in; in order for them and their caregivers to live and thrive safely in the comfort of their home environment.

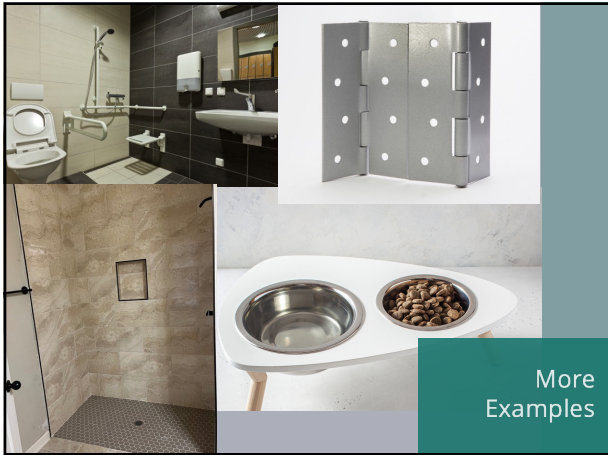
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## Examples of Home Modifications



- GRAB BARS
- RAMPS
- OFFSET HINGES
- ADAPTIVE EQUIPMENT (TUB TRANSFER BENCHES VS. CHAIRS)
- ACCESSIBLE SINKS/CABINETS
- TILT MIRRORS
- D RING HARDWARE
- LEVER HANDLES
- SUPERPOLES
- ELEVATED DOG/CAT BOWLS
- CURBLESS SHOWERS
- PULL DOWN SHELVING
- NON-SLIP FLOORING
- LIGHTING
- STAIRLIFTS
- BATHLIFTS

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More Examples

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### Other Examples

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More Examples

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**WEBSITE**  
otlivingwithoutlimits.com

**EMAIL ADDRESS**  
ot@livingwithoutlimits.info

**PHONE NUMBER**  
901-401-8085

**Contact Information**



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- <https://www.ncoa.org/news/resources-for-reporters/get-the-facts/falls-prevention-facts/>
- <https://stopfalls.org/faqs/where-do-falls-among-older-adults-occur-most-frequently/>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6103639/#R28>
- CDC Older Adult Fall Fact Sheet
- <https://www.cdc.gov/homeandrecreationalafety/falls/data/fallcost.htm>
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