WHI Ignite: Modification of the Home Environment for Aging in Place

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Home Environmental Modifications (HEMs)

- Physical adaptations to the home necessary to increase independence, promote health, and prevent further decline or injury.
- Enable person to function with independence and prevent institutionalization – Occupational Therapy
- Goals:
  - Prevent falls &
  - Preserve activities of daily living (ADLs; bathing, dressing, other self-care activities) to instrumental activities of daily living (IADLs; preparing meals, doing laundry, performing home maintenance chores) to play and/or leisure activities
Examples
Participants were asked to identify all changes or additions made to the home for themselves or someone else.

- Railings or Banisters
- Increasing Lighting
- Tacking down carpets or rugs
- Sink Counter Heights
- Grab bars
- Indoor or Outdoor Ramps
- Non-Slip Surfaces
- Decreasing Clutter
Self Reported Measures of Disability

Activities of Daily Living
- Bathing
- Transferring
- Dressing
- Eating

Instrumental Activities of Daily Living
- Taking Medication
- Grocery Shopping
Findings in WHI

• >50% of all women report some modifications to home environment
• ↑ utilization of HEMs ↔ ↓ function (ADLs, IADLs)
• ↑ utilization of HEMs ↔ ↑ falls
• Poor health history ↔ ↑ utilization of HEMs
  • Particularly strongly associated with prior hip fracture, stroke
  • Makes prospective analyses challenging!
• Prospectively, utilization of HEMs is associated with
  • ↓ function (ADLs, IADLs)
  • Nonsignificant ↓ Falls: HR: 0.82 (95% CI: 0.61, 1.11)
Clinical trial evidence:

• Effect of a Biobehavioral Environmental Approach on Disability Among Low-Income Older Adults: A Randomized Clinical Trial. (Szanton et al, JAMA Intern Med 2019)
  • Low-income community-dwelling older adults → decrease in disability

• Home modifications to reduce injuries from falls in the Home Injury Prevention Intervention (HIPI) study: a cluster-randomised controlled trial (Keall et al, Lancet 2015; 385: 231–38)
  • Reduced risk of falls, injury

• Preventing Falls in Community-Dwelling Frail Older People Using a Home Intervention Team (HIT): Results From the Randomized Falls-HIT Trial (Nikolaus & Bach, JAGS 51:300–305, 2003)
  • The intervention group had 31% fewer falls than the control group (incidence rate ratio (IRR) 0.69, 95% confidence interval (CI) 0.51–0.97).

• A Randomized Trial of a Multicomponent Home Intervention to Reduce Functional Difficulties in Older Adults (Gitlin et al, JAGS 2006)
  • 6mo - Reduced ADLs, IADLS, improved Self-efficacy
Potential to Build on LLS-2 to advance in-place, accurate, HE assessments

• Assessing other in-place environmental factors:
  • Noise exposure w/in the home and immediate surroundings
  • In-home air quality; Radon exposure
  • Home configuration (stairs, flexibility w/r to HEMs, etc.)
  • In-home toxin exposure

• Conduct in-home assessments of home environment as basis for an RCT w/in the LLS-2 cohort
  • Complement ASC mail-out based proposal w/more detailed and specific interventions targeted to the home
  • Coupling w/PCORI grant, leveraging the more detailed participant data available w/in WHI
National Institute on Aging’s strategic directions

• Improving the Health, Well-Being, and Independence of Adults as They Age

• **Goal C:** Develop effective interventions to maintain health, well-being, and function and prevent or reduce the burden of age-related diseases, disorders, and disabilities.

• **Goal E:** Improve our understanding of the consequences of an aging society to inform intervention development and policy decisions.

• **Goal F:** Understand health differences and develop strategies to improve the health status of older adults in diverse populations.
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