Breaking the Fall: Community Injury Prevention Strategies for Older Adults

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Featured Speakers

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Disclosure Statements

The planners and presenters do not have any financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in this activity.

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**Why Falls Prevention?**

- One-third of all older adults 65+ fall each year
- The leading cause of injury, injury-related hospitalization, and injury-related deaths among older adults
- In 2010, falls among older adults accounted for:
  - 2.3 million emergency department visits
  - 650,000+ hospitalizations
  - 20,000+ deaths

**Consequences of Falls**

- Negative consequences for mobility, independence, physical and mental health
- Fractures: Hip, arm, hand, ankle, others
- Head trauma and traumatic brain injury
- Fear of falling
  - Reduced activity → increased risk of falling
  - Decreased quality of life
- Sentinel event leading to major decline in health

**What do we know?**

- Falls are not a normal part of aging
- Falls can be prevented
- Falls have known risk factors and causes
- We know what works to reduce falls
- Fall prevention strategies and programs need to be more widely implemented

**Risk Factors for Older Adult Falls**

- **Personal**
  - Non-Modifiable: Age, Gender, Race
  - Modifiable: Past history of falls
- **Environmental**
  - Non-Modifiable: Home, Outdoor, Built Environment
  - Modifiable: Home, Outdoor, Built Environment

**Personal Risk Factors: Non-Modifiable**

- **Age**: Fall risk and injury rates increase with age
- **Gender**: Females more likely to fall; to be injured in fall
- **Race**: Males more likely to die from a fall
- **Past history of falls**: 3 times more likely to fall
### Personal Risk Factors: Modifiable

- Lower body weakness
- Problems with gait and balance
- Sleep disturbances
- Fear of falling
- Taking 4+ medications; any psychoactive medication

### Personal Risk Factors: Modifiable

- Use of walker or cane
- Vision impairment
- Chronic diseases and conditions
  - Such as:
    - Diabetes
    - Parkinson’s disease
    - Osteoporosis
    - Stroke
    - Incontinence
    - Alzheimer’s disease

### Environmental Risk Factors: Home Environment

- 55% of fall injuries occur inside home
- Home environment implicated in 30-40% of falls
- Most common:
  - 1 tripping/slipping while walking forward
  - 2 transferring
  - 3 on stairs or steps
- Most housing stock is “Peter Pan” housing

### Environmental Risk Factors: Home Environment

Problem areas:
- Outside steps
- Inside stairs
- Unsafe bathrooms

### Environmental Risk Factors: Home Environment

Hazards:
- Clutter
- Electrical cords
- Throw rugs
- Loose carpets
- Slippery surfaces
- Changes in floor surface
- Unstable furniture
- Inappropriate chair or cabinet heights
- Poor or inadequate lighting
- Pets and pet-related objects

### Environmental Risk Factors: Home Environment

Lack of supportive features
- Lack of stair railings
- Lack of grab bars
- Ramps
- Easy-access bathrooms
### Environmental Risk Factors: Outdoor and Built Environment

<table>
<thead>
<tr>
<th>Risk Factor</th>
</tr>
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<tbody>
<tr>
<td>• Uneven /cracked pavement or surfaces, uneven steps</td>
</tr>
<tr>
<td>• Slippery walking surfaces</td>
</tr>
<tr>
<td>• Obstacles in walkways</td>
</tr>
<tr>
<td>• Poor lighting</td>
</tr>
<tr>
<td>• Tree roots</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk Factor</th>
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</thead>
<tbody>
<tr>
<td>• Snow / ice on walkways or steps</td>
</tr>
<tr>
<td>• Building mats, door sills</td>
</tr>
<tr>
<td>• Poorly designed or maintained buildings</td>
</tr>
<tr>
<td>• Lack of safety features</td>
</tr>
<tr>
<td>• Poor lighting / glare</td>
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### What works to prevent falls?

<table>
<thead>
<tr>
<th>Prevention Measures</th>
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<tbody>
<tr>
<td>• Strength and balance exercise</td>
</tr>
<tr>
<td>• Medication review</td>
</tr>
<tr>
<td>• Vision exam</td>
</tr>
<tr>
<td>• Home hazard modification</td>
</tr>
<tr>
<td>• Multifactorial approach best</td>
</tr>
</tbody>
</table>

### Tai-Chi: Moving for Better Balance

<table>
<thead>
<tr>
<th>Benefits</th>
</tr>
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<tbody>
<tr>
<td>• Dr. Fushong Li, Oregon Research Institute, 2004</td>
</tr>
<tr>
<td>• Simplified version of 8 Tai Chi forms designed for older adults</td>
</tr>
<tr>
<td>• 12-week program; 2 sixty-minute sessions per week plus at-home practice</td>
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<tr>
<td>• Participants demonstrated</td>
</tr>
<tr>
<td>- Fewer falls</td>
</tr>
<tr>
<td>- Fewer injurious falls</td>
</tr>
<tr>
<td>- Improved balance</td>
</tr>
<tr>
<td>- Reduced fear of falling</td>
</tr>
<tr>
<td>- Improved physical performance</td>
</tr>
<tr>
<td>• Improves leg and core strength and balance</td>
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### Stepping On

<table>
<thead>
<tr>
<th>Details</th>
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<tbody>
<tr>
<td>• Dr. Lindy Clemson, University of Sydney; Dr. Jane Mahoney, University of Wisconsin, 2006</td>
</tr>
<tr>
<td>• Multifactorial falls-prevention program</td>
</tr>
<tr>
<td>- improving balance and strength</td>
</tr>
<tr>
<td>- safe footwear</td>
</tr>
<tr>
<td>- home and community safety</td>
</tr>
<tr>
<td>- medication review</td>
</tr>
<tr>
<td>- vision screening</td>
</tr>
<tr>
<td>• 7 weekly 2-hr sessions led by content experts</td>
</tr>
<tr>
<td>• Participants demonstrated</td>
</tr>
<tr>
<td>- Fewer falls</td>
</tr>
<tr>
<td>- Maintenance of confidence in avoiding a fall</td>
</tr>
<tr>
<td>- Greater use of protective behavioral factors</td>
</tr>
<tr>
<td>• Increases self-efficacy and promotes behavior change</td>
</tr>
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### Otago Exercise Program

<table>
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<tr>
<th>Details</th>
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<tbody>
<tr>
<td>• Drs. Campbell &amp; Robertson, Univ. of Otago, NZ, 2001</td>
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<tr>
<td>• Muscle strengthening and balance retraining exercises, plus walking plan</td>
</tr>
<tr>
<td>• Year-long; 7 home visits plus 7 phone calls</td>
</tr>
<tr>
<td>• Delivered by PT or nurse receiving PT supervision</td>
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<tr>
<td>• Participants expected to:</td>
</tr>
<tr>
<td>- exercise 3 times a week (30 minutes at a time)</td>
</tr>
<tr>
<td>- walk at least twice a week</td>
</tr>
<tr>
<td>• Participants demonstrated</td>
</tr>
<tr>
<td>- Reduced falls, especially among the oldest old</td>
</tr>
<tr>
<td>• Increases leg strength and balance</td>
</tr>
</tbody>
</table>
**A Matter of Balance**

- Dr. Sharon Tennstedt, Boston University, 1998
- Focuses on fear of falling
- Emphasizes practical strategies to
  - Increase activity levels
  - View falls and fear of falling as controllable
  - Increase activity, exercise, strength and balance
  - Change environment
- 8 2-hr small group sessions led by volunteer lay leaders
- Participants demonstrated
  - Increased falls efficacy
  - Increased activity
  - Greater mobility control
  - Improved social function
- Increases self-efficacy for avoiding falls

**Current Falls Prevention Initiatives**

- Step Up to Stop Falls in Western and Central NY (http://www.stepupwestcen.org)
- State Coalitions (http://www.alc.org/InjuryPreventionMap)
- Centers for Disease Control and Prevention (http://www.cdc.gov/HomeandRecreationalSafety/Falls/index.html)
- NYSOPEP New York State Osteoporosis Prevention Education Program (http://www.nysopep.org/)

**Community Coalitions**

- Impact on health of a community
  - Injury Control strategies
    - Education
    - Policy setting
    - Environmental strategies
    - Legislation
  - Group vs. single organization effort
    - Strategies to promote lasting change
    - Lead agency
      - Coordinated, cooperative effort

**Elements of Effective Coalitions**

- Common goal
- Issue-oriented
- Recruit members
  - Complementary skills
- Agree on Action Plan
- Open to changes in programs/processes
- Acknowledge contributions of all
- Commitment to making group work

**Elements of Effective Coalitions**

- Diverse backgrounds
- Knowledge regarding issue can vary
- Over time, increase knowledge of members
  - Effectiveness evolves over time
- Shared decision making
- Organizational linkage
- Community leadership
- Positive organizational climate

**Functions of Community Coalitions Regarding Community Education**

- Increase influence of individual community institutions
- Minimize duplication of services
- Exploit new resources in changing environment
- More comprehensive strategies
- Improve capacity to plan and evaluate
- Strengthen response to community needs
- Enhance capacity of local leaders, organizations to educate the community
**Suffolk County Falls Prevention Coalition**

- Members
  - Suffolk County Department of Health Services
  - Hospitals (7 out of 11 area hospitals)
  - AARP
  - Pharmacist
  - Geriatric Internist
  - Office for Aging
  - Biostatistician
  - Colleges
  - Home Health Agencies

**Suffolk County Action Plan**

- Health Education
- Data Analysis
- Tai Chi
- Falls Summit
- ’Stepping On’
- ‘Staying Independent for Life’
- Communications Plan
- Assignment of Falls Prevention Coordinator
  - Coordinating roll out of ‘Stepping On’ program
  - Conducting Falls Prevention Awareness sessions
- Next steps

**Effective Messaging:**

What Older Adults Want to Know About Falls

**Components of Health Communication**

- Adult learning principles
- Successful aging
- What people want to know
- Literacy
- Cognition
- Designing successful interventions
- Knowledge change vs. Behavior change

**Principles of Adult Learning**

- Learn best in response to a perceived need
  - Problems related to falling and one’s risk?
- Progress from known to the unknown
  - What one knows re: falls – self, friends, adult children, myths
- Progress from simple to complex concepts
  - Home modification
  - Medications
  - Tai chi, exercise

**Principles of Adult Learning**

- Active participation promotes learning
  - Discussion
  - “Do you understand?” versus “Tell me about...”
- Opportunities to practice skill during session
  - Tai Chi
- Reinforce positive behavior
  - “How would you...?”
- Provide immediate feedback
  - Helps to correct any misconceptions
  - Reinforce skills learned
### Interrelated with....
- Perceptions regarding themselves
- What people perceive as important to them
- Perceived threat of a health problem
- Perceived ability to effectively respond to or avoid threat

### Successful Aging
- 90% have given serious thought to both aging and aging successfully
- Have identified attributes that are important to aging successfully

### Important Attributes
- Staying healthy until near death
- Staying involved with the world and others
- Ability to make choices regarding things that affect aging (e.g., exercise)
- Ability to meet one's needs and wants
- Ability to care for self
- Feel good about oneself
- Cope with challenges of aging
- Staying free of chronic health problems.

### Pertinent Perceptions and Beliefs
- Perception that prevention programs are relevant to their lives
- Barriers include denial of risk and poor self-efficacy
- Interventions:
  - Lifestyle enhancing
  - Strategy for remaining independent

### Effective Messaging: Focus on Fears?
- Fear arousal messages
  - May precipitate denial that undermines preventive action
  - Response to a threat that arouses fear related to a decision regarding this threat as well as intention to implement preventive behavior
  - High level of fear; low level of intention to take action
    - Fear of losing home
    - Fear of losing independence

### Effective Messaging: Focus on Self-Efficacy?
- Self-efficacy
  - Perceived belief that one has the ability to perform given recommended response + perception that this response works
  - Health threat message that does not involve self-efficacy
    - Promotes avoidance of fear via Denial
    - Defense avoidance (e.g., too scary, don't think about it)
    - Reactance (e.g., people are just being manipulative, dismissing the fear)
“Good intentions?”

- When falls prevention messages are presented within the context of:
  - Self-efficacy: Asked whether this activity would be appropriate for them, appropriate to undertake, suitable. .....OR....
  - Fear/Threat: Risks of falls, consequences of falls, etc.
- Which approach results in stronger intention to change behavior?

Falls: Related Risk Factors for Poor Health Literacy

- Immigrants
- Not High School graduate
- Ethnic minorities
- Physical, mental or health conditions
- Visual difficulties
- Aged 65 or older

% Of Population At Each Literacy Level According To Age

<table>
<thead>
<tr>
<th>United States</th>
<th>Below Basic</th>
<th>Basic</th>
<th>Intermediate</th>
<th>Proficient</th>
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<tbody>
<tr>
<td>16 to 18</td>
<td>11</td>
<td>23</td>
<td>58</td>
<td>8</td>
</tr>
<tr>
<td>19 to 24</td>
<td>10</td>
<td>21</td>
<td>58</td>
<td>11</td>
</tr>
<tr>
<td>25 to 39</td>
<td>10</td>
<td>18</td>
<td>55</td>
<td>16</td>
</tr>
<tr>
<td>40 to 49</td>
<td>11</td>
<td>21</td>
<td>53</td>
<td>12</td>
</tr>
<tr>
<td>50 to 64</td>
<td>13</td>
<td>21</td>
<td>53</td>
<td>12</td>
</tr>
<tr>
<td>65+</td>
<td>29</td>
<td>30</td>
<td>38</td>
<td>3</td>
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</tbody>
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(The Health Literacy of America’s Adults, U.S. Dept. of Education, 2006)

Lower Literacy Skills Among the Elderly

- Reading involves possession of adequate:
  - Concentration
  - Vision
  - Word recognition
  - Ability to process
  - Working memory
- Includes a variety of additional components beyond reading:
  - Listening
  - Speaking
  - Conceptual knowledge

Low Literacy Skills: The Impact

- Health literacy may be one pathway that explains the well-established link between education and health;
- Decreased ability to share in decision-making
- Lower adherence to treatment
- Higher costs

Focus Group Regarding Falls Prevention...

- What They Want to Know
  - Do not want to know about falls!
    - Makes them feel old, scared
  - Want to know about
    - Feeling good, staying healthy and independent
    - Positive message
  - Do not want messages to involve their adult children
  - Do not want health care provider messages

11/15/2012
Results!

<table>
<thead>
<tr>
<th>Knowledge of Appropriate Falls Prevention Practices</th>
<th>Prior to Reading Materials</th>
<th>After Reading Materials</th>
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</thead>
<tbody>
<tr>
<td>% who identify appropriate falls prevention practices</td>
<td>16% (7/45)</td>
<td>40% (18/45)*</td>
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<table>
<thead>
<tr>
<th>Change in Intent to Modify Behavior</th>
<th>After Reading Materials</th>
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<tbody>
<tr>
<td>Very likely to implement falls prevention practices</td>
<td>14% (7/50)</td>
</tr>
</tbody>
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Moving Forward Recommendations

- Coalition Development
- Community Awareness regarding prevention
- Linkage of at-risk with community-based programs
- Primary care screening and referral – e.g., TUG test
- Focus beyond home hazards

References


Evaluations

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Thank you!