

# Safe at Home BAASE

***A self-management programme to reduce fall risk among people with MS***

**Marcia Finlayson, PhD, OT (C), OTR/L**  
MS Certified Specialist &  
Associate Professor, Department of Occupational Therapy  
University of Illinois at Chicago



# Objectives

- Provide an overview of self-management, including key skills addressed during self-management programmes
- Describe the development, implementation and evaluation of the *Safe at Home BAASE* program, a fall prevention and self-management programme for people with MS



# What is self-management?

- Many definitions - no consensus
- General focus is on living well despite challenges of chronic conditions or other long-term challenges
- Has been described as:
  - A set of specific behaviours, an outcome and a process



# Self-management - Behaviours

- Primary tasks:
  - Medical, role and emotional management
- Behaviors in which people engage to:
  - Promote health, monitor and manage symptoms, reduce impact of chronic condition on daily life
- Done in collaboration with a health care provider (with guidance as needed)



---

---

## Self-management - Outcome

---

---

- Greater skills and knowledge to manage chronic condition
- Increased confidence and motivation to use skills and knowledge to manage a chronic condition
- Increased perceived control over the chronic illness
- Improved functional and clinical outcomes
- Reduced costs to the health care system

---

---

## Self-management - Process

---

---

- A type of training provided to people with chronic conditions
  - Essential elements (skills):
    - Problem-solving; decision-making; action planning (goal setting); developing partnerships with health care providers; Finding and using resources; self-tailoring
- Driven by problems identified by the participants

---

---

## Self-management - Process

---

---

- Examples of programmes
  - Arthritis Self-Management Program
  - Chronic Disease Self-Management Program
  - Expert Patient Programme
- Key features
  - Group-based, ~6 – 2 hr sessions
  - Usually lay-lead, or co-lead

---

---

## Patient education vs Self-management

*(Bodenheimer et al, 2002)*

---

---

- | Patient Education  | Self-management  |
|--|--|
| <ul style="list-style-type: none"><li>• Teaches technical, disease-oriented skills</li><li>• Addresses wide-spread common problems</li><li>• Disease specific</li><li>• Improve compliance to improve outcomes</li><li>• Health professional has expertise</li></ul> | <ul style="list-style-type: none"><li>• Teaches skills to act on problems</li><li>• Addresses problems identified by participants</li><li>• Often general</li><li>• Improve confidence to improve outcomes</li><li>• Patient has expertise</li></ul> |

---

---

## Applying Self-Management Principles to...

---

---

### Falls Prevention and Management in Multiple Sclerosis

---

---

## Background

---

---

- Falls are a leading cause of injury across all ages
- Attention to fall prevention is growing, but focus of research has been on well elderly
- Falls are a major problem for people with MS and other neurological conditions
  - Problems with balance, visual changes, cognitive impairments, mobility limitations
  - Correspond with common fall risk factors

---

---

## Developing “Safe at Home BAASE”

---

---

- Emerged over the course of a three phase study that sought to:
  - Determine prevalence of and risk factors for falls among people with MS
  - Evaluate correspondence between MS fall risk factors and “Matter of Balance”
    - Can we modify it for people with MS?
  - Pilot test the program

---

---

## Phase 1

---

---

- US national random sample: NARCOMS
  - 700 invited, 359 completed (51%)
    - Age: 67 years (sd=7), range 55-94
    - Years since dx: 21 (sd=12), median=19
  - Telephone interviews:
    - Socio-demographics; MS history and status; falls history, recent story, efficacy, risk factors; program preferences

---

---

## Phase 1: Key Findings

---

---

- 30% reported falling once a month or more
  - 26% of these people - falling at least 2x/week
- 51% reported injurious falls
  - Risk factors for injurious falls: FoF, osteoporosis
- Risk factors for falls
  - being male, FoF, variable or deteriorating MS, AT use, problems with balance or mobility, poor concentration, incontinence of bladder

---

---

## Phase 2

---

---

- Utilized an international Work Group
  - 3 PTs, 1 MD, 1 RN, 3 OTs
    - 2 of 8 have MS themselves
- Expected to modify program “Matter of Balance” using Phase 1 data
  - MOB – reducing FOF & increasing activity
  - Phase 1 findings did not support this direction

---

---

## Phase 2

---

---

- Result: “Safe at Home BAASE”
- Work Group assisted in determining:
  - Guiding principles
  - Overarching programme goals
  - Content & implementation objectives for each session
  - Organization, flow, and activities to address content objectives
  - Outcome measures

---

---

## Key Guiding Principles

---

---

- Deliver with a strong focus on Person-Environment-Occupation fit to reduce risk
- Use experiential activities to promote knowledge and skill transfer
  - Goal setting, practice activities
- Promote a supportive & safe environment to enable participants to practice & refine fall prevention & management skills
  - Sharing, problem-solving, self-assessment and reflection

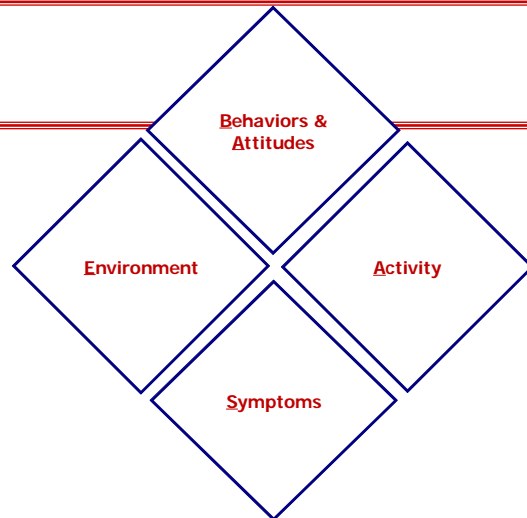
## Goals and Outcome Measures

Program Goal	Outcome Measures
Increase knowledge of fall risk factors	<ul style="list-style-type: none"> <li>Falls Control Scale (<i>Tennstedt et al, 1998</i>)</li> <li>Falls Management Scale</li> <li>Falls Prevention &amp; Management Questionnaire</li> </ul>
Increase knowledge and skills to manage falls and falls risk	<ul style="list-style-type: none"> <li>Falls Management Scale</li> <li>Falls Prevention &amp; Management Questionnaire</li> </ul>
Modify current behaviors to reduce personal fall risk	<ul style="list-style-type: none"> <li>Falls Prevention Strategies Survey</li> </ul>

Additional measures: Falls Efficacy Scale (Tinetti, Richman & Powell, 1990) and FoF Item (adapted from Walker & Howland, 1991)

## Safe at Home BAASE

- 5 weekly sessions, with a follow-up session 4 weeks later
- Implementation process theoretically guided by:
  - Cognitive Behavioral Therapy
- Contents guided by:
  - Phase 1 findings and other research
  - Person-Environment-Occupation Model, Self-management principles



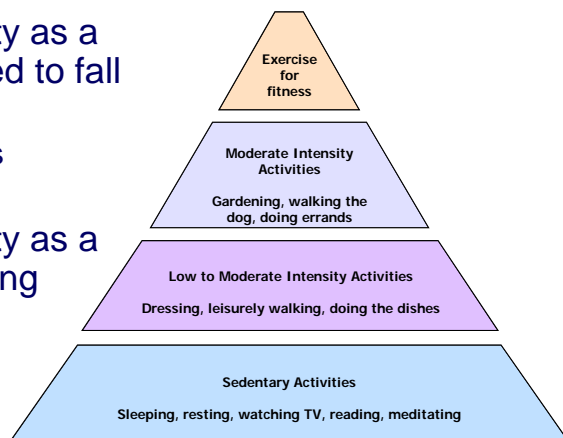
Safe at Home **BAASE**: A Falls Prevention Program for People with MS

## Outline of Sessions

1. Introduction to **BAASE** & Changing Behaviors & Attitudes
2. Managing MS **S**ymptoms: Mobility Aids & Physical Activity
3. Managing MS **S**ymptoms: Fatigue & Modifying Activities
4. Managing the **E**nvironment: Home and Community
5. Managing Falls: **BAASE** Review & Goal Setting
6. Applying the **BAASE**: Progress Update & Program Evaluation

## Example: Teaching Content

- Physical activity as a behavior related to fall risk
  - Active choices
  - Analyzing risk
- Physical activity as a way of managing symptoms
  - Balance
  - Strength
  - Endurance



## Homework Example: Fall Analysis

- What day did you fall?
- What time was it when the fall occurred?
- Where did the fall occur?
- What were you doing when you fell?
- Did your fall cause an injury?
  - (If yes) Did you seek medical attention?
- How much each component of the BAASE contribute to the fall?
- How concerned are you that you will fall again in a similar situation?

## Example: Session 4 Highlights

- Warm-up – Surprise Shoe Check
- Brief program review
- Homework Review: Findings from Activity Modification
- Discussion – Fall Hazards in the Home and Community
- Photo Analysis
- Advocacy Letter



## Phase 3

- Conducted in Chicago in 2006-07
- Target group: PwMS, aged 45+
- Recruitment very challenging
- Total of 111 calls
  - 40 not screened (not interested, unable to participate, transportation), 24 ineligible, 10 eligible did not consent, 2 could not be scheduled
  - Had 28 participants who started, with 23 attending at least 3/6 sessions

---

---

## Participants (N=23)

---

---

- 19 women, 4 men
- 21 with > than HS education
- 13 on disability or medical leave; 7 retired; 2 unemployed; 1 working full time
- MS stable (12), deteriorating (5), variable (4), improving (2)
- Mean age: 59 (sd=5), range: 50-68
- Years since dx: 16 (sd=3), range: 3-40

---

---

## Pre-Post Comparisons

---

---

- Falls Control Scale (4 items):
  - Higher score = greater sense of control (4-20)
  - Mean Pre score = 15.0
  - Mean Post score = 17.2
  - The paired t-test indicated significant improvement in perceived ability to control fall risk ( $t=4.49$ ,  $p=.0002$ ).
    - Average improvement = 2.26

---

---

## Pre-Post Comparisons

---

---

- Falls Management Scale (5 items)
  - Higher score = better management certainty (5-20)
  - Mean Pre score = 13.2
  - Mean Post score = 15.8
  - The paired t-test indicated significant improvement in perceived management certainty ( $t=4.61$ ,  $p=.0001$ )
    - Average improvement = 2.65

---

---

## Pre-Post Comparisons

---

---

- Falls Prevention and Management Questionnaire (12 items)
  - Higher score = greater capability for prevention and management (0-48)
  - Mean Pre score: 31.0
  - Mean Post score: 39.9
  - Average improvement 8.9 ( $t=4.66$ ,  $p=.0001$ ).

## Pre-Post Comparisons

- The most common items with improvement were:
  - “I have a specific plan to safely increase my physical activity levels to reduce my fall risk” (n=17, 74%),
  - “I know how to safely get up after a fall” (n=16, 70%),
  - “I know what questions to ask my doctor or pharmacist about my medications so that I can reduce my fall risk” (n=15, 65%), and
  - “I know how to check the safety of my mobility aids to reduce my fall risk” (n=15, 65%).

## Falls Prevention Strategies Survey

Strategies/Behavior Changes	% change
Careful about using the 'right' mobility device	100
Stay physically active safely	100
Change how I do different activities	100
Plan activities to manage my MS symptoms	100
Ask for help with some activities	100
Put a plan in place in case I fall	87
Have chosen not to do an activity	80
Check condition of mobility aids regularly	67

## Falls Prevention Strategies Survey

Strategies/Behavior Changes	% change
Use grab-bars in my bathroom	50
Improved the lighting in my home	37
Asked HCP - ways to reduce my fall risk	20
Asked about meds	14
Chosen shoes I wear	0
Moved furniture or other items	0

## Pre-Post Comparisons

- Falls Self-Efficacy (10 items):
  - Higher score = more confident (0-100)
  - Mean Pre score: 78.0
  - Mean Post score: 87.9
  - Wilcoxon Sign-Rank test indicated significant improvement ( $p=.0016$ ).
    - Average change = 9.64.

---

---

## Participant Feedback

---

---

- Outcomes:
  - Much more aware of fall risk factors
  - Increased confidence that falls can be managed
  - More thoughtful about activities now

---

---

## Participant Feedback

---

---

- Structure & Process:
  - Homework useful for application
  - Enjoyed talking with other PwMS (validating, motivating)
  - BAASE facilitated problem-solving
- Refinements:
  - Longer program with more content on cognitive issues and physical activity, more discussion, more time to review homework

---

---

## Facilitator Feedback

---

---

- BAASE theme – useful teaching tool
- CBT process - challenging assumptions
- Group process
- Homework in general
  - Exercise continuum, pedometer to track physical activity, & Theraband
  - Fatigue rating
  - Photo activity

---

---

## Phase 3: Strengths & Limitations

---

---

- Strengths
  - Raised issues for further development
  - Established feasibility and potential
- Limitations
  - Small sample size
  - No comparison or control group
  - No long term follow-up

# Available Materials

- Safe at Home BAASE intervention protocol
  - Full manual for facilitators; includes all participant hand-outs/worksheets
  - Cost – copying and shipping
- Falls Prevention Strategies Survey
  - Can be e-mailed
- Contact: [marciaf@uic.edu](mailto:marciaf@uic.edu)



<i>Research Team</i>	
<i>PI</i>	Marcia Finlayson
<i>Co-PI</i>	Elizabeth Peterson
<i>OTs</i>	Jennifer Garcia, Carole Schwartz, Megan Dosmann
<i>Research Assistants</i>	Eynat Shevil, Danielle Lemon, Maria Seymour
<i>Statistician</i>	Louis Fogg & Chris Cho
<i>Work Group members</i>	Lena von Koch, Donna Fry, Julie Seltzer, Jane Marone, Robin Mazzuca, Toni Van Denend, Kathy Rockefeller, Kelly Larsen

This project was supported by the Retirement Research Foundation