

Montana Chronic Disease Prevention and Health Promotion Bureau
Injury Prevention Program
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Injury Prevention Program Surveillance Report, Spring 2014

Successfully Preventing Falls

Report Highlights:

- Stepping On, a community-based fall prevention program, reduces falls among participants in Montana.
- After completing the program, participants report less fear about falling and increased safety measures to prevent falling.
- Stepping On is being offered in many communities throughout Montana.

Stepping On participants cut their rate of falling in half after completing the program

Falls among older adults aged 65 years and older in the United States represent a major public health problem. Every 29 minutes, an older adult dies as the result of a fall and every 15 seconds, an older adult is treated in the emergency department for a fall-related injury (1). Falls threaten an older person's independence and generate an economic toll in personal and healthcare costs. In 2010, the estimated direct medical costs of non-fatal and fatal falls in the U.S. were over \$30 billion dollars. By 2020, the annual direct and indirect costs of fall injuries are expected to reach \$ 59.6 billion, which includes Medicare costs of over \$32 billion (2).

The good news is that research studies suggest multi-factorial intervention programs for fall prevention are effective (3). In one such study, Clemons and colleagues published the findings from a randomized clinical trial evaluating the impact of a fall prevention intervention (Stepping On) among older persons (4). They recruited at-risk community-dwelling older adults and found a 31% reduction in falls among participants completing the intervention compared to falls among controls. Since 2010, the Montana Department of Public Health and Human Services (DPHHS) has worked in collaboration with many local agencies to implement Stepping On. This report describes the implementation of the program and the fall-related outcomes achieved by participants three months after the end of the course.

Figure 1. Communities with Stepping On Programs, Montana, March 2014:

- Whitefish
- Kalispell
- Bigfork

- Polson
- Plains
- Missoula
- Hamilton
- Bozeman
- Butte
- Anaconda
- Philipsburg
- Helena
- Great Falls
- Choteau
- Dutton
- Shelby
- Joplin
- Big Sandy
- Havre
- Harlem
- Fromberg
- Glasgow
- Sidney
- Glendive
- Terry
- Miles City
- Hysham
- Hardin

Stepping On Course Description and Eligibility

Eligibility:

- 60+ years old and
- History of fall in last 12 months or
- Fear of falling

Stepping On is a community-based fall prevention program that addresses multiple fall-related risks. The curriculum is delivered over seven weeks. Participants meet once a week for two-hour sessions. At each weekly session, participants learn about fall risks, home and community safety, vision and vitamin D, medication management, and how to perform strength and balance exercises (Table 1). At the end of each weekly session, participants are given a homework assignment related to skills they were taught during the session. The Stepping On leaders use the topics of these homework assignments to facilitate

participant discussion at the next weekly session. Participants are also instructed to practice their strength and balance exercises at home each week and document these activities on an exercise chart. Participants are invited to a “Reunion” session three months after completing the weekly sessions, to boost their knowledge of risk reduction and reinforce a routine of strength and daily balance exercises.

The group size for each Stepping On course is kept between 8 to 14 participants to promote discussion among participants. Sites charge a nominal registration fee (\$10-\$30) and will waive the fee for those unable to pay. Participants are recruited from a variety of sources including newspapers and brochures, assisted living centers, and health care provider offices. Word of mouth has also been a successful way to recruit participants.

Table 1. Description of Stepping On course

Session

Description of session

- Class 1
 - Introduction to course and class-mates, collect baseline information, learn and perform strength and balance exercises
- Class 2
 - Reinforce strength and balance exercises, use of walking aids
- Class 3
 - Address home hazards and safety
- Class 4
 - Community safety, vision, and footwear
- Class 5
 - Medication management, bone health, and sleeping better
- Class 6
 - Getting out and about on uneven ground and steps and stairs, navigating inclement weather, discuss hip protectors
- Class 7
 - Review and plan ahead for goal achievement, course evaluation
 - Home hazard review (Phone call)
 - Assist with follow-through of fall prevention strategies and activities, reinforce fall prevention activities
- 3 month “Reunion” session
 - Reinforce course information and exercises, discuss accomplishments, resurvey using survey from baseline assessment

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Stepping On Participant Outcomes

From June 2010 through October 2013 eight Stepping On sites completed data sets to describe participant experiences. During this time period, 270 people enrolled in Stepping On at these eight sites. The mean number of classes attended by enrollees was 6 (standard deviation 1.5). Sixty-eight percent (n=184) completed at least five of the seven sessions and attended the three month reunion session. The mean age of participants completing the class was 81 years and the majority were non-Hispanic white and female (data not shown). There were no major demographic differences identified between participants who completed the course and those who did not complete the course.

Twenty-eight percent of participants said they had fallen one or more times in the three months before the course started (Table 2). At the three month follow-up, 20% of participants said they had fallen one or more times in the last three months. There was a 50% decrease in the percent of participants who had fallen two or more times in the preceding three months from baseline as compared to the three month reunion session.

At baseline, 33% of participants reported having restricted their activities in the last three months due to a fear of falling. At the three-month follow-up, that percent had decreased to 23% (Table 2). There was a significant increase in the mean Fall Behavior Scale score, indicating participants were performing safer behaviors; a decrease in the mean perceived fear score; and a decrease in the mean number of falls experienced in the last three months among participants.

Table 2. Falls and fall-related behaviors during the 3 months of follow-up among participants completing the intervention, Montana, 2013.

	Baseline	Follow-up	
	% (N)	% (N)	p value*
≥1 falls	28 (49)	20 (36)	0.10
>2 falls	12 (22)	6 (10)	0.003**
Restrict activities due to fear of falling	33 (57)	23 (39)	<0.001**
	Mean (SD)	Mean (SD)	p value†
Fall behavioral scale‡	2.97 (0.42)	3.17 (0.39)	<0.001**
Modified falls efficacy scale§	2.48 (0.75)	2.51 (0.71)	0.23
Perceived fear of falling scale	2.15 (0.89)	1.98 (0.86)	0.007**

	Baseline	Follow-up	
Number of falls in last 3 months	0.59 (1.53)	0.28 (0.64)	0.003**

* Fisher's exact test

** Statistically significant

† Wilcoxon signed-rank test was used for non-normally distributed variables and paired t-test for normally distributed variables

‡ Higher score indicates safer behaviors, range 1-4

§ Lower score indicates more confidence in doing activities, range 1-4

|| Lower score indicates reduced fear of falling, range 0-4

SD, Standard deviation

References

1.-2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based injury statistics query and reporting system (WISQARS).

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3. Gillespie LD, Gillespie WJ, Robertson MC, Lamb SE, Cumming RG, Rowe BH. Interventions for preventing falls in elderly people. *Cochrane Data-base Syst Rev* 2009;(2):CD000340.

4. Clemson L, Cumming RG, Kendig H, Swann M, Heard R, Taylor K. The effectiveness of a community-based program for reducing the incidence of falls in the elderly: a randomized trial. *J Am Geriatr Soc* 2004;52(9):1487-94.

Clinical Recommendations

Assess fall risk with your patients using a recommended tool like the STEADI toolkit

(www.cdc.gov/steady/). Provide patients with information on reducing fall risks at home and

maintaining strength and balance. Regularly review your patient's medications to prevent interactions that may increase fall risk. Refer patients with a fall risk to a fall prevention program, such as Stepping

On.