

Comparison of Fall Risk Education Methods for Primary Prevention with Community-Dwelling Older Adults in a Senior Center Setting

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ABSTRACT

Purpose: The purpose of this study was to determine which of 2 primary prevention education programs was more effective in increasing knowledge and prompting behavior change to reduce fall risks among community-dwelling older adults who attended Senior Centers. **Methods:** A convenience sample (N=69) was recruited at 4 local senior centers to compare 2 fall risk education methods. Subjects were divided randomly by location into a class and pamphlet (CP) group (n = 35) that received a one-hour class plus written information and a pamphlet only (PO) group (n = 34) that received only written information. Pretesting for level of knowledge was conducted at baseline and at 2 weeks following the intervention and data were also collected on risk factor reduction behaviors. **Results:** There was no significant difference (p=0.34) between groups for knowledge posttests. The CP group reported 121 changes to reduce fall risk while the PO group reported 120 changes. Subjects who had been injured by past falls (n=22) were significantly (p=0.04) more likely to report changes than those who had not fallen or were not injured by a fall. **Conclusion:** Both methods prompted fall risk reduction behaviors. This study provides an example of community-based, primary prevention programs designed to reduce fall risk factors among older adults.

Key Words: primary prevention, fall risk, education, older adults

INTRODUCTION

As the population ages, the concern for issues related to aging continues to grow. In the United States alone, the percentage of older adults over the age of 65 in the population has tripled over the past century.¹ Approximately one-third of adults over age 65 fall each year, leading to complications and

high health care costs.²⁻⁴ Additionally, over 80% of the older persons admitted to the hospital as the result of falls do not return to their previous level of independence.^{5,6} Following a fall, an older person may experience one or more emotional problems including shame, depression, loss of confidence, anxiety, and fears of diverse nature.^{7,8} A vicious cycle of self-limitation and decreased self-efficacy often follows.^{7,9}

In order to meet the needs of older adults in the community, primary prevention efforts must address the problem of falling among this population. This effort is supported by the 'Healthy People' program coordinated by the United States Department of Health and Human Services.¹ Healthy People is a national health promotion and disease prevention initiative launched in 1979 which brings together government agencies, nonprofit, voluntary, and professional organizations with businesses, communities, and individuals to improve the health of all Americans. 'Healthy People 2010' provides national health objectives that build on the initiatives pursued over the past 2 decades. Fall risk reduction and prevention programs clearly coincide with the health objectives set forth in Healthy People 2010 (Table 1).

In line with the Healthy People initiatives, *The Guide to Physical Therapist Practice*¹⁰ has identified a practice pattern specifically relevant to fall prevention. *Neuromuscular Pattern A: Primary Prevention/Risk Reduction for Loss of Balance & Falling* describes the generally accepted elements of patient/client management for clinical practice in this area. The intervention component for patient/client-related instruction includes programs designed to improve awareness, knowledge of risk factors, decision-making, and safety.

Prior studies have found a need for fall-related education among community-dwelling older adults. Carter et al¹¹ found that 42% of the 425 community-dwelling older adult subjects

Table 1. Health Objectives from "Healthy People 2010" that Coincide with Fall Risk Reduction

7-12	Increase the proportion of older adults who have participated during the preceding year in at least one organized health promotion activity.
15-27	Reduce deaths from falls.
15-28	Reduce hip fractures among older adults.

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were unable to identify more than 2 modifications that could be made to prevent falls. They also found that 68% of subjects assessed their houses as being very safe. However, researchers found that 30% of these subjects had 5 or more environmental risk factors in their homes, which supports the need for fall risk education among older adults.

Previous studies that delivered fall-related education to older adults in the community have had mixed results. Ness et al¹² were successful in prompting at least 1 risk reduction behavior in 72% of 68 older adult participants following a balance screening and one-on-one educational session. However, El-Faizy and Reinsch¹³ found no difference in implementation of home safety recommendations or incidence of falls between a group of older adults (n=14) who received home safety assessments, written educational materials, and reflective tape for safety versus a control group (n=14) who did not receive educational materials. Numerous studies have included education as a component of effective multifaceted fall prevention programs.¹²⁻¹⁶ However, the impact of education alone on primary fall risk reduction is unknown.¹⁷

Because changes in risk-taking behaviors are often the target of educational programs, most of the studies fall short in considering health behavior change theory applied to older adults. By using a well-developed theory, a researcher could design a program for promotion of behavior change related to fall prevention. For example, the Social Cognitive Theory (SCT)¹⁸ is a multifaceted theory that includes cognitive, emotional, and behavioral elements in relation to the impact of the environment. With regard to behavioral goals, Bandura¹⁹ contends that behavior is strongly stimulated by self-influence. Several constructs of SCT are applicable for fall prevention research based on constructs that explain behavior and those that initiate behavior change.

Our purposes for this study were to determine: (1) if the educational interventions increased knowledge of fall risk factors and risk reduction strategies and (2) if the participants subsequently modified their behavior to reduce fall risks. This intervention coincides with Neuromuscular Practice Pattern A: Primary Prevention/Risk Reduction for Loss of Balance and Falling. We hypothesized that older adults who participated in a theoretically grounded (ie, SCT) educational class discussing fall prevention, in addition to receiving written pamphlets, would have a greater increase in knowledge of risk factors and report more changes to reduce these risks than those who only received written pamphlets. We expected this finding based on past research in which older adults appeared to benefit from small group settings and social support.^{14,20}

METHODS

Subjects

A convenience sample of 69 community-dwelling older adults, ranging in age from 57 to 88 years (mean = 64.8 years), was recruited from 4 different senior centers in Scranton, Pennsylvania. Subjects were recruited by flyers and word of mouth asking for volunteers to attend a fall risk education ses-

sion at their local senior center. To be eligible for inclusion in this study, individuals had to be over the age of 60 and independent ambulators (with or without use of a device) who lived in the community and accessed their local senior center. This study used a pretest-posttest design with blocked randomization by location. The 4 locations were randomly divided so that 2 centers received a one-hour fall prevention class plus written information in a pamphlet (CP), while the other 2 locations received the pamphlet only (PO). The CP group included 35 subjects (34 female and 1 male; average age = 68.7 years), while the PO group consisted of 34 subjects (26 female and 8 male; average age = 68.6 years). Sociodemographic data for each group are reported in Table 2. Each subject volunteered to participate in this study and signed an informed consent form prior to data collection. Confidentiality was maintained by the utilization of data coding. This study was approved by the Physical Therapy Departmental Review Board (PTDRB) at the University of Scranton to ensure protection of human subjects.

Instrumentation

All written materials were typed in a simple, 14 point font and printed on off-white paper to allow ease of reading. A 75-item checklist was used to assess the subjects' knowledge of fall risk factors and reduction techniques. The items were composed by the investigators, based on surveys used in past research on fall prevention²¹⁻²³ and program content. The checklist included items to identify personal behaviors, health characteristics, and environmental factors that may contribute to falls (Appendix 1). The content of the educational program and pamphlets was reflected in the checklist to provide face validity. Each item on the list was considered a yes/no question with a yes response indicated by a check in the box. The checklist was scored as a percentage with 0% indicating no correct responses and 100% indicating that all items were correct. Both subject groups used the same checklist in the pretest and posttest. The order of the questions was changed in the posttest to reduce the effects of repeated testing. In addition to the posttest, another form was administered to record the amount and type of modifications reported by subjects to reduce fall risks. The form provided a list of options to check, as well as a space for open-ended self report of any changes that were made. The responses were summed and categorized as either environmental or personal risk factors.

Procedures

This program was conducted as a community-service effort for primary prevention/risk reduction by the University of Scranton Department of Physical Therapy faculty and graduate student research assistants (RAs). The estimated cost for program materials and printing for both groups was approximately \$100. After obtaining informed consent, subjects were asked to complete a sociodemographic intake form and the knowledge pretest checklist. The PO group was given pamphlets with written explanations on fall risk factors and methods to improve home safety, perform proper body mechanics, and change per-

Table 2. Demographic Data for Older Adults Participating in Fall Risk Education Programs by Group

Demographics	Class Plus Pamphlet Group (n=24)		Pamphlet Only Group (n=25)	
	Number	%	Number	%
Gender				
Male	1	4	7	28
Female	23	96	18	72
Living Situation				
Alone	15	63	17	68
With spouse/family	7	29	6	24
No response	1	4	2	8
Education Level Completed				
Elementary	1	4	8	32
High School	15	63	13	52
College	6	26	4	16
No response	1	4	0	0
Fall History*				
Fell during past year	7	29	8	32
Injured	1	4	6	24
Not Injured	6	26	2	8
No falls	13	54	17	68
No response	4	17	0	0
Use of Assistive Device				
Cane or walker	4	17	1	4
No device	19	79	19	76
No response	1	4	1	4
Use of Medications				
0 – 4	9	38	7	28
greater than 4	14	58	13	52
No response	1	4	1	4

* indicates statistically significant difference (p< .05) in number of changes reported to reduce fall risks by fallers vs. nonfallers

sonal habits to reduce fall risk. No additional oral information or explanation was provided.

Following completion of informed consent and pretesting (which lasted approximately 30 minutes), the CP group attended a single one-hour fall risk education class that covered the same topics as the pamphlets, but with greater detail. These topics included: descriptions of intrinsic/personal risk factors (eg, weakness, poor vision, impaired balance, foot problems) and extrinsic/environmental risk factors (eg, home hazards such as throw rugs, poor lighting, slippery floors) for falls and discussion of strategies to reduce fall risk factors (eg, participate in fitness programs; improve home safety with grab bars, lighting, reorganization of cabinet contents/clutter/furniture; use proper body mechanics; avoid risk-taking behaviors). In addition, the CP group watched a video titled, *Fear of Falling: A Matter of Balance*²⁴ to hear the opinions of other older adult peers who made modifications to decrease fall risks. Subjects in this group were also able to interact with

the instructors and ask questions during the class. The same instructors conducted all of the sessions and only 1 session was offered at each of the 2 locations. The session was designed to fit into the senior centers' pre-existing monthly in-service schedule. The program goals and expected outcomes were consistent with Neuromuscular Practice Pattern A¹⁰ as noted in Table 3.

As a theoretical foundation for this intervention, SCT¹⁸ was used to address individual behavior in a group context and emphasize the role of social support. With respect to explanatory constructs, SCT considers an individual's behavioral capability and self-control. To initiate behavior change, constructs such as observational learning and reinforcements are applied. In fall prevention, the environmental issues must be addressed, not only for safety reasons, but also to improve the self-efficacy of the person by enabling the increase of control through immediate reduction of some risk factors.¹⁹ Refer to Table 4 for definitions of SCT constructs.

Table 3. Fall Risk Reduction Program Interventions with Associated Goals and Expected Outcomes using *The Guide to Physical Therapist Practice NeuroMuscular Pattern A*¹⁰

Program Intervention: <i>Primary Prevention/Risk Reduction for Loss of Balance and Falling</i>	
<p><i>Coordination, Communication, and Documentation:</i></p> <ul style="list-style-type: none"> • Informed consent • Collaboration and communication with agencies (ie, Senior Centers, Area Agency on Aging) • Communication including education plan and documentation • Data collection, analysis and reporting of outcome data (ie, sociodemographic intake forms, knowledge checklists, risk reduction behavior outcome forms) • Education on referrals to other professionals or resources (on a group level) <p><i>Patient/Client-Related Instruction:</i> Instruction and education of participants regarding:</p> <ul style="list-style-type: none"> • Fall risk factors • Plan for intervention • Enhancement of performance • Health, wellness and fitness programs 	<p><i>Anticipated Goals and Expected Outcomes:</i></p> <ul style="list-style-type: none"> • Participant understands anticipated goals and expected outcomes of program (ie, informed consent) • Collaboration and coordination occurs with agencies • Communication occurs through education plan and documentation • Data are collected, analyzed, and reported • Referrals are sought based on group education • Participant knowledge and awareness of fall risk factors and reduction strategies are increased • Behaviors that foster healthy habits, wellness and prevention are initiated • Fall risk factors are reduced • Safety of participant is improved • Decision-making is enhanced regarding participant and the use of health care resources • Awareness and use of community resources are improved

Following the educational interventions, subjects in both groups were encouraged to use the information received to change those factors in their lives that could cause falls. Incentive prizes (ie, baskets of low-cost household items) were offered for the 3 subjects in each group who reported the most changes. Two weeks after receiving the intervention, both

subject groups completed a post-test checklist to measure their knowledge of fall risks and prevention techniques that were explained in the educational pamphlets and classes. A follow-up form determined whether the subjects changed any aspects of their environment or personal behaviors in the prior 2 weeks to reduce fall risks.

Table 4. Application of Social Cognitive Theory (SCT) to Community-Based Fall Risk Reduction Program

SCT Constructs	Examples of Construct Use
Behavioral capabilities	Participants gain knowledge during educational class on how to identify fall risk factors and make changes for fall risk reduction.
Observational learning	Viewing a video of older adult peers provides demonstrations for implementation of fall prevention in the home.
Expectations	Educator directs discussion on negative consequences of falling and positive aspects of a prevention based on program objectives.
Expectancies	Group discussion portrays fall prevention as meaningful and valuable for older adults dwelling at home.
Reinforcement	Household items are awarded to participants as prizes for those who made the most risk reduction changes during follow-up visit.
Self-efficacy	Participants gain confidence as they implement the risk reduction methods and report progress by using the program instruments.
Reciprocal determinism	Participants learn how to impact the environment to decrease fall risk. The environment is modified to improve safety. There may be fewer falls or near falls in the home.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 12.0 for Windows. The knowledge posttest scores were compared by group using analysis of covariance (ANCOVA) with the pretest scores as the covariate. A *t* test was used to compare group averages for the number of fall risk reduction changes reported following the intervention. ANCOVAs were also performed to determine the presence of any confounding variables (ie, age, gender, education level, prior injury by past falls, or past fall prevention experiences) that may have impacted the knowledge test scores or the number of fall risk modifications reported by subjects. The probability level required to reach statistical significance was set at $p < 0.05$. Descriptive statistics were provided to characterize our sample and the type of fall risk reduction methods employed by the participants.

Eighteen subjects dropped out of the study midway, and the pretest data of 2 subjects were missing, resulting in incomplete data sets for 20 subjects (11 in the experimental and 9 in the comparison group). There were no statistically significant differences between the subjects who dropped out ($n=18$) and those who completed the study ($n=49$) based on *t* tests and chi square analyses of ratio (ie, pretest scores, age) and nominal data (ie, sociodemographics in Table 2) respectively.

RESULTS

A total of 49 subjects completed the program, 24 in the CP group and 25 in the PO group. The group knowledge checklist scores improved from pretest (CP= 70.4%; PO= 72.9%) to posttest (CP= 77.4%; PO= 75.8%). However, the ANCOVA analysis on posttest scores between groups (using the pretest scores as the covariate) showed no significant group difference ($p=0.32$) in level of knowledge following the intervention.

To determine the presence of any confounding variables, an ANCOVA using multiple covariates found no significant difference between the change in pretest and posttest knowledge scores with respect to age ($p=0.35$), gender ($p=0.75$), education level ($p=0.18$), prior injury by past falls ($p=0.21$), or past fall prevention experiences ($p=0.79$).

In addition, an ANCOVA using the same multiple covariates revealed no significant difference in the number of changes reported to reduce falls risks with respect to age ($p=0.76$), gender ($p=0.22$), education level ($p=0.19$), or past fall prevention experiences ($p=0.74$). However, subjects who were injured by past falls ($n=22$) were significantly ($p=0.04$) more likely to report changes than those who had not fallen or were not injured by a fall.

There was a self-reported total of 241 changes made for both groups (CP=121, PO=120). A *t* test showed no statistically significant difference between groups ($p = 0.79$) for number of changes made to reduce fall risks. Within the CP group, an average of 5.0 changes to reduce risk factors were reported by each subject, compared to 4.8 by subjects in the PO group over the 2-week follow up period. Refer to Table 5 for details on the type and amount of changes made by each group.

A descriptive analysis was conducted on the number of changes made by subjects to reduce fall risks in the past. Self-report data revealed 58.8% ($n=17$) of those who responded in the CP group and 40% ($n=25$) of those responding in the PO group reported making prior fall risk reduction changes to improve safety.

DISCUSSION

The goals of this study were to determine which of 2 methods was most effective for increasing the knowledge of fall risks and whether this change in knowledge would lead to changes in behavior or environment in order to decrease these risks. Our hypothesis that the education classes plus written information (CP) would increase knowledge significantly more than the written pamphlet alone (PO) was not supported. Although posttest scores did improve by 2.9% - 7.0%, there was no significant difference in knowledge of fall risk factors based on pre- to posttest scores between the 2 groups. This showed that participating in a fall prevention class did not increase a subject's ability to recognize fall risk factors more than simply receiving printed information. However, a total of 241 changes were reported by both groups indicating that either approach can be effective as a means for providing a community-based educational program for older adults. Perhaps the attention provided by repeated contact, social interaction, and prize incentives played a role in motivating both groups to make changes.¹⁸⁻²⁰

Subjects' age, gender, education level, and past experience with fall prevention did not have a significant effect as to whether they increased their knowledge about risks, or whether they reported changes. Subjects who were most likely to make changes were those that had fallen in the past and were injured by the fall. A possible reason for this correlation is fear of falling, because the older adults who had experienced a fall knew first hand about the complications that could result.⁷⁻⁹ Future educational programs on this topic should measure fear of falling to determine the relationship between behavior change and risk reduction.

Most of the reported changes made by both groups to reduce fall risks were behavioral and low cost (Table 5), such as asking for help when carrying large objects. This may be related to a number of reasons including time, financial constraints, and motivation.²¹ Many of the individuals in this study reported having already made more costly or time consuming changes, such as installing grab bars in the shower. This finding confirms that finances and available resources are important considerations when older adults choose to make changes. Fall prevention programs should include no cost or minimal cost environmental recommendations. For those changes that are associated with a financial burden, community resources need to be identified to assist the older adult to make these more costly changes.

A theory such as SCT may be appropriate with group interventions aimed at fall prevention. It is a dynamic theory that addresses the reciprocal influence of the environment on

Table 5. List of Fall Risk Factor Modifications Performed by Community-Dwelling Older Adults Following Fall Risk Education Program by Group

Type of Change Made	Class Plus Pamphlet (CP)	Pamphlet Only (PO)	Totals
	Group (n=24)	Group (n=25)	
Environmental Risks			
Removed throw rugs	6	7	13
Secure handrails*	1	0	1
Install nightlights*	7	8	15
Mark step edges with tape*	0	0	0
Install rubber bath/tub mats*	4	5	9
Rearrange kitchen shelves	5	1	6
Remove extension cords from walkways	3	1	4
Replace/repair worn carpeting*	0	0	0
Remove clutter from walkways	7	2	9
Monitor location of pets	1	0	1
Use low gloss wax on floors	0	2	2
Install high wattage/glare free bulbs*	2	3	5
Use chairs with armrests	5	4	9
Install grab bars in bathroom*	1	2	3
Keep lights on in hallways and stairwells	6	5	11
Keep flashlight next to bed	9	8	17
Total Environmental Changes	57	48	105
Personal Risks			
Begin regular exercise routine	5	6	11
Use cane/walker as instructed	2	3	5
Decrease alcohol intake	1	0	1
Carry cordless phone around house	6	3	9
Avoid walking in socks/stockings	5	10	15
Clean eyeglasses daily	8	9	17
Wear prescription glasses/sunglasses	5	6	11
Get help with carrying large items	7	9	16
Inspect feet daily	5	6	11
Get earwax removed as needed*	2	2	4
Label and organize medications	6	5	11
Seek treatment for visual problems*	3	4	7
Monitor blood sugar levels regularly	4	4	8
Monitor blood pressure regularly	4	4	8
Other	0	2	2
Total Behavioral Changes	61	73	136
Total Risk Reduction Changes	120	121	241
* Denotes changes associated with cost.			

behavior. The group interaction allowed participants to share ideas and experiences, which in turn developed expectations to predict a positive program outcome, expectancies to place value on the outcome, and behavioral capabilities related to fall risk reduction. Although our effort was intended to focus on social support with the class, both groups had the advantage of social interaction and peer support which are the foundation of SCT. Researchers suggest the use of a health behavior theory to promote adherence to an intervention program by considering factors such as relapse, perceived self-efficacy, barriers/benefits, and social support.^{25,26}

With respect to *The Guide to Physical Therapist Practice Neuromuscular Pattern A*,¹⁰ facilitating behavior change to encourage fall risk reduction among older adults is a necessary step to promote primary prevention of the devastation associated with falling. Apart from prevention of the obvious physical injuries, there are also psychological effects including emotional problems such as shame, depression, loss of confidence, anxiety, and fear.^{7,8} For some older adults, a fall can represent an initial confrontation with frailty or a threat to independence and functional ability. Significant lifestyle changes and emotional distress often result with subsequent self-limitation and decreased self-efficacy.^{7,9} Therefore, preventative measures are essential to avoid these complications. Physical therapists are in a unique position to provide primary prevention on an individual level in the clinic, as well as on the group level through community outreach programs such as this.

Education in a community based setting is a cost-effective means of reaching a large number of older adults. Over a 2-week period, we were able to connect with 69 individuals at senior center locations and educate them on ways to decrease fall risks. Our budget of approximately \$100 covered cost of printing and prizes, while the student RAs and faculty provided community service on a volunteer basis. Although an educational class did not prove significantly more effective than written materials in increasing knowledge of risk factors, the outreach in itself made an impact, as a total of 241 changes were reported among all subjects. Fall risk reduction and prevention clearly coincide with the national health objectives set forth in Healthy People 2010¹ and the content of the American Physical Therapy Association's Vision 20/20 statement²⁷ with its emphasis on health and wellness. A literature review by Marks and Allegrante²⁸ suggests that there is compelling evidence from public health research to support health promotion policy for making societal investments in community falls prevention programs. Accordingly, physical therapists should take a more proactive approach with the management of older adults whom they serve.

With respect to research limitations, several issues should be considered. In this study, no measures of cognition were used as inclusion criteria because it was assumed that a community-dwelling older adult who could access a senior center is cognitively intact. However, during the study many participants required assistance to complete forms and understand the questions being asked. In addition, several subjects

showed difficulty in completing the questionnaires, secondary to reported problems with vision or reading deficits. As noted above, the possibility of co-intervention existed because even those subjects in the PO group had the opportunity to interact with peers following our visit, which may have offered the benefits of group interaction and peer support thereby extending the application of the SCT to both groups. Furthermore, environmental conditions during the educational presentations varied by senior center. One senior center provided a quiet, closed environment for the education class, while the other was affected by interference due to high noise and activity levels of nonparticipating seniors. Future research should focus on determining the most effective methods, design, theoretical foundation, and follow-up for primary prevention of falls in a community-based setting.

CONCLUSION

There was no significant difference found in change of knowledge or modification of fall risk factors, when comparing groups educated by pamphlets alone or by a class presentation and pamphlets. Distributing evidence-based fall prevention pamphlets achieved similar goals as the more socially engaging class intervention when both groups were offered prize incentives and repeated contact by educators.

The best method for educating older adults on fall risk reduction remains unclear. However, it was possible to reach a large group and motivate participants to make changes to reduce fall risks as evidenced by the large number of changes (N = 241) reported by both groups to decrease risk factors. In order to address primary prevention, education in a community-based setting is a feasible means for physical therapists to reach a large number of older adults and offer consultation on important public health issues such as fall prevention. By considering fall prevention as part of routine health promotion, physical therapists can play an important role in primary prevention of falls among older adults in the community.

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Appendix 1. Fall Risk Knowledge Checklist

Please place a check in the box next to your answers.

Health Related Factors

Which of the following general health problems may increase risk for falls?

- | | |
|---|---|
| <input type="checkbox"/> Dizziness | <input type="checkbox"/> Low blood sugar |
| <input type="checkbox"/> Leg weakness | <input type="checkbox"/> Sun burn |
| <input type="checkbox"/> Heart murmur | <input type="checkbox"/> Foot problems |
| <input type="checkbox"/> Poor bladder/bowel control | <input type="checkbox"/> Frozen shoulder |
| <input type="checkbox"/> Ear infections | <input type="checkbox"/> Low blood pressure |
| <input type="checkbox"/> Varicose Veins | <input type="checkbox"/> Skin rash |
| <input type="checkbox"/> Kidney Stones | <input type="checkbox"/> Pacemaker |

Appendix 1. Continued

Which of the following diseases may increase risk for falls?

- | | |
|--|--|
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Parkinson's Disease |
| <input type="checkbox"/> Heart Disease | <input type="checkbox"/> Arthritis |
| <input type="checkbox"/> Colitis | <input type="checkbox"/> AIDS |

Which of the following mental health problems may increase risk for falls?

- | | |
|--|--|
| <input type="checkbox"/> Confusion | <input type="checkbox"/> Anxiety |
| <input type="checkbox"/> Split personality | <input type="checkbox"/> Fear of falls |
| <input type="checkbox"/> Depression | <input type="checkbox"/> Hypochondria |

Behavioral Factors

Which of the following social behaviors may increase risk for falls?

- | | |
|--|---|
| <input type="checkbox"/> Inactivity/Avoiding exercise | <input type="checkbox"/> Dancing |
| <input type="checkbox"/> Going to church/temple | <input type="checkbox"/> Drinking alcohol |
| <input type="checkbox"/> Not using a prescribed cane or walker | <input type="checkbox"/> Attending aerobics classes |

Which of the following household activities may increase risk for falls?

- Climbing on chairs/step-stools to reach objects
- Walking in socks/stockings through the house
- Reaching into oven
- Holding on to towel rod to get in/out of bath
- Sweeping the kitchen floor
- Vacuuming the living room carpet

Which of the following health related behaviors may increase risk for falls?

- Taking aspirin
- Taking more than 4 medications
- Wearing orthotic shoes
- Taking someone else's medication
- Taking sleeping pills/muscle relaxants
- Wearing arch supports
- Wearing dirty/broken/old prescription glasses
- Taking herbal medicines
- Maintaining proper blood sugar levels

Environmental Factors

Which of the following items may increase risk for falls outside of the home?

- | | |
|---|--|
| <input type="checkbox"/> Broken/cracked sidewalks | <input type="checkbox"/> Uneven walkway |
| <input type="checkbox"/> Heavy or quick closing doors | <input type="checkbox"/> Marked step edges |
| <input type="checkbox"/> Low-cut grass | <input type="checkbox"/> Icy sidewalks |
| <input type="checkbox"/> Loose handrails | <input type="checkbox"/> Porch light |

Which of the following items may increase risks for falls inside of the home?

- | | |
|---|---|
| <input type="checkbox"/> Low chairs and sofas | <input type="checkbox"/> Low electrical outlets |
| <input type="checkbox"/> Narrow or cluttered hallways | <input type="checkbox"/> TV remote control |
| <input type="checkbox"/> Low pile carpets | <input type="checkbox"/> Throw rugs |
| <input type="checkbox"/> Grab bars in the shower | <input type="checkbox"/> Wet floors |
| <input type="checkbox"/> Dim lighting | <input type="checkbox"/> Cordless phones |
| <input type="checkbox"/> Smoke detectors | <input type="checkbox"/> Night lights |
| <input type="checkbox"/> Waxed floors | <input type="checkbox"/> Worn carpeting |
| <input type="checkbox"/> High bed height | <input type="checkbox"/> Chairs with armrests |
| <input type="checkbox"/> Fire extinguisher | <input type="checkbox"/> Elevated toilet seat |
| <input type="checkbox"/> Pets, such as cats or dogs | <input type="checkbox"/> Extension cords/wires on floor |