

Older Persons' Perception of Risk of Falling: Implications for Fall-Prevention Campaigns

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Educational or awareness-raising strategies are commonly utilized in multistrategy fall-prevention programs.^{1,2} Although substantial evidence supports the effectiveness of multistrategy programs in reducing rates of falls, the particular contribution of educational input² and the impact of specific messages are less researched.

Traditional awareness-raising strategies in interventions for the prevention of falls have utilized 2 main messages: (1) falls are a significant health issue for older people (aged 65 years and older), and (2) falls are preventable. These messages have been utilized to counteract the common misconceptions that falls are only an issue for frail older persons and that falls are accidental and, therefore, not preventable.³ However, the lack of personal relevance of these messages for the older individual has been identified as an important obstacle to awareness-raising goals. As Hill et al. (2004) wrote,

There is an important assumption underlying the belief that education programs for older people are effective in reducing falls rates, namely that older people acknowledge that they are personally at risk of falls.^{2(p10)}

Older persons often have an overly positive perception of their state of health in general⁴ and their risk of falls in particular.⁵ In fact, they will actively disassociate themselves from the "old" label and the associated ageist stereotypes.⁶⁻⁸ For instance, Braun found that although older people who lived in the community considered falls to be an important, preventable health issue and understood the significance of risk factors in the context of older persons, they minimized their personal susceptibility.⁵ Similarly, through focus groups, Yardley et al. found that older people often supported fall-prevention advice for others, but not for themselves personally.⁹ Aminzadeh and Edwards reported that although older participants recognized many

Objectives. We examined older people's attitudes about falls and implications for the design of fall-prevention awareness campaigns.

Methods. We assessed data from (1) computer-assisted telephone surveys conducted in 2002 with Australians 60 years and older in Northern Rivers, New South Wales (site of a previous fall-prevention program; n = 1601), and Wide Bay, Queensland (comparison community; n = 1601), and (2) 8 focus groups (n = 73).

Results. Participants from the previous intervention site were less likely than were comparison participants to agree that falls are not preventable (odds ratio [OR] = 0.76; 95% confidence interval [CI] = 0.65, 0.90) and more likely to rate the prevention of falls a high priority (OR = 1.31; 95% CI = 1.09, 1.57). There was no difference between the groups for self-perceived risk of falls; more than 60% rated their risk as low. Those with a low perceived risk were more likely to be men, younger, partnered, and privately insured, and to report better health and no history of falls. Focus group data indicated that older people preferred messages that emphasized health and independence rather than falls.

Conclusions. Although older people accepted traditional fall-prevention messages, most viewed them as not personally relevant. Messages that promote health and independence may be more effective. (*Am J Public Health.* 2008;98:351-357. doi:10.2105/AJPH.2007.115055)

functional and safety gains from using a walking aid, the majority (including those who reported fear of falling, a history of falls, or problems with their back, hip, and knee joints) believed they did not need such a device.¹⁰

Falls often have negative connotations for older people. Associated with physical injury, functional impairment, psychological trauma, loss of independence, and death, falls are commonly viewed as a symbol of aging and an issue for frail older persons or "oldest old."^{3,10,11} Whereas a service provider may consider falls in terms of physical risk management, older people are often more concerned about the risk to their personal and social identities.⁶ Similarly, although seniors fear functional limitations that result from a fall, they are also concerned about social embarrassment, indignity, and damage to their confidence.¹² These negative perceptions have been recognized as major factors in older people's reluctance to admit both susceptibility to falls and the need for preventive behaviors.^{10,12} Those with good physical and mental health and a limited history

of falls are most likely to reject their personal risk of falling.^{3,5}

Prevention of falls is not always a conscious priority issue for older persons. A majority of focus group participants, when asked if they were concerned about having a fall, indicated that it was not something they had considered.¹³ Similarly, a survey of older persons found that falls were only of moderate concern, compared with other health issues.⁵

Quantitative interviews and focus groups and small questionnaire-based surveys of older community members have indicated that health promotion messages related to the prevention of falls may be negatively perceived. However, to our knowledge, no study has assessed the specific long-term impact of traditional messages about falls in an intervention context. We also sought to expand the limited amount of research related to message content and targeted subgroups. Specifically, we sought to examine the longer-term impact of traditional fall-prevention messages utilized in a community-based, fall-prevention intervention; to evaluate the demographic, health,

and fall-related characteristics associated with a low perceived personal risk of falling; and to evaluate older people's reactions to 3 message options, which focused on falls, independence, or health.

METHODS

Computer-Assisted Telephone Interview Survey

Computer-assisted telephone interviews were conducted in February 2002 with 3202 persons 60 years or older who lived in the communities of Northern Rivers, New South Wales (previous-intervention community), or Wide Bay, Queensland (comparison community). Interviews were stratified by gender (50% men, 50% women) and location (50% Northern Rivers, 50% Wide Bay). Telephone numbers were randomly selected from the previous 4 years' editions of the electronic residential White Pages. This method provides a reasonable proportion of unlisted numbers, because some numbers that are currently unlisted may have been listed in previous years. Unless contact was made, each number was attempted a maximum of 6 times on different days and times of day.

This telephone survey was conducted 5 years after the implementation of the successful Stay on Your Feet (SOYF) program conducted in Northern Rivers from 1992 to 1997.¹⁴ The intervention was demonstrated to significantly change the attitudes and behaviors of older people in the target region compared with a control community, and to significantly reduce hospital admissions related to falls in the target population. That multi-strategy program featured an awareness-raising campaign that emphasized traditional fall-prevention messages—that is, that falls are a significant health issue for older people but are preventable.

The structured interview instrument was based on items from a mailed survey utilized in the evaluation of the original SOYF program and several other fall-prevention measures.^{15–17} Physical activity questions were adapted from the US Behavioral Risk Factor Surveillance System.¹⁸ Awareness about falls and attitudes toward prevention of falls were measured with 3 items. First, participants were asked to rate how high a priority

prevention of falls is for them. Second, participants were asked to rate their personal chance of falling as low, medium, or high. Finally, people were asked whether they agreed or disagreed with the following statement: “Older people fall and there is nothing that can be done about it.” Participants were also asked about their history of falls, general health and demographic details, and various fall-related health behaviors.

We compared demographic, health, and fall-related characteristics for the communities using the χ^2 test in bivariate analyses. We then compared the sites and assessed the sustained impact of the previous intervention on falls awareness and attitude variables, adjusted for potential covariates identified in the bivariate comparisons with logistic regression analyses. Attitudes that showed no intervention impact were further investigated through multivariate logistic regression modeling to examine associations in the pooled sample (which combined communities).

Focus Groups

Focus groups were conducted in 2002 as part of a sustainability analysis of the previous SOYF program.^{19–21} Participants were 70 years or older (old enough to have been within the targeted age range during the SOYF intervention) and had lived in Northern Rivers during the time of the program. Eight groups were conducted with 5 to 12 participants in each group. Of the 73 participants, 54 (74.0%) were women. Focus groups were conducted across the 4 Northern Rivers Area Health Service clusters. Participants were recruited from local seniors', sporting, and social groups, as well as retirement and day-care centers.

A semistructured interview guide was developed for the focus groups.²⁰ Apart from questions that related to their experiences with the original SOYF program, participants were asked to comment on possible messages for a new fall-prevention program. Specifically, participants were asked to listen to 3 messages and to discuss which would be the most likely to get people to change their behavior. The messages were (1) If you are more active, you will be less likely to fall; (2) If you are more active, you will stay independent for longer; and (3) If you are more active, you will stay healthy for longer.

Focus group discussions ran, on average, for 1 hour and were facilitated by an experienced qualitative researcher. The sessions were audiotaped and transcribed for later analysis. The facilitator's observations and comments were noted immediately after each focus group session. Two of the researchers independently conducted a content analysis of the transcripts to identify themes. Discrepancies were resolved by reaching consensus through discussion between the coders and other members of the research team.

RESULTS

Computer-Assisted Telephone Interviews

In the previous-intervention community (Northern Rivers), 1601 interviews were completed, 347 households refused to participate before eligibility could be determined, 433 eligible households refused to participate, and 25 persons terminated the interview partway. Comparison site (Wide Bay) residents also participated in 1601 interviews. Refusals included 226 households in which eligibility had not yet been determined, 348 eligible households, and 22 interviews terminated before completion. Response rates were between 67% and 78% in the previous-intervention region and between 73% and 81% in the comparison region depending on whether households who refused prior to the determination of eligibility were included or excluded from the denominator. Because many of the refusing households likely did not have an age-eligible resident, response rates may be toward the higher end.

Previous-Intervention and Comparison-Community Comparisons

Demographics, history of falls, and general health characteristics of the samples in the previous-intervention and comparison regions were compared (Table 1). There were no statistically significant differences between the 2 groups for gender (by design), marital status, pension status, private health insurance status, employment, or fall and related-injury history. Residents from the previous-intervention community were somewhat older, more educated, and in better general health than were residents from the comparison community.

TABLE 1—Comparison of Individuals 60 Years and Older in the Previous Fall-Prevention Awareness Intervention Site and the Comparison Site (N = 3202): Australia, 2002

	Previous-Intervention Site, No. (%)	Comparison Site, No. (%)	P
Gender			.97
Men	800 (50.0)	801 (50.0)	
Women	801 (50.0)	800 (50.0)	
Age, y			.006
60–69	704 (44.1)	790 (49.4)	
70–79	640 (40.1)	600 (37.5)	
≥80	252 (15.8)	209 (13.1)	
Marital status			.08
Partner	1060 (66.3)	1106 (69.3)	
No partner	538 (33.7)	491 (30.7)	
Employment			.34
Retired	1169 (73.0)	1186 (74.2)	
Employed/student/volunteer	212 (13.2)	202 (12.6)	
Home duties/caregiver	180 (11.2)	158 (9.9)	
Unemployed/unable to work	40 (2.5)	52 (3.3)	
Education			<.001
University/college	189 (11.8)	126 (7.9)	
Trade or technical school	433 (27.1)	408 (25.6)	
Completed 12 y	133 (8.3)	129 (8.1)	
Completed 10 y	396 (24.8)	317 (19.9)	
Completed ≤7 y	444 (27.8)	613 (38.5)	
Receives pension			.21
Yes	1196 (75.0)	1224 (76.9)	
No	399 (25.0)	368 (23.1)	
Has private health insurance			.11
Yes	717 (44.9)	760 (47.7)	
No	881 (55.1)	834 (52.3)	
Self-rated general health			.02
Excellent	245 (15.4)	228 (14.3)	
Very good	486 (30.5)	454 (28.5)	
Good	528 (33.1)	506 (31.7)	
Fair	269 (16.9)	304 (19.1)	
Poor	67 (4.2)	102 (6.4)	
Fell in past 12 months			.71
Yes	386 (24.1)	395 (24.7)	
No/not sure	1215 (75.9)	1206 (75.3)	
Injury (from fall) in past 12 months			.57
Yes	272 (17.0)	260 (16.2)	
No/not sure	1329 (83.0)	1341 (83.8)	

regions were most likely to rate their risk of falling as low, and there was no significant difference between sites (63.1% [previous-intervention] vs 61.7% [comparison community]; $\chi^2=0.7$; $P=.409$). Analyses that adjusted for potential covariates (i.e., gender, age group, education, and self-reported general health) produced similar results when these attitudes were compared between communities. In 2 multinomial logistic regression analyses, previous-intervention participants were less likely to agree that falls are not preventable compared with the comparison cohort (odds ratio [OR]=0.76; 95% confidence interval [CI]=0.65, 0.90), and were 30% more likely to rate prevention of falls as a high or very high priority (OR=1.31; 95% CI=1.09, 1.57). A logistic regression analysis that adjusted for covariates revealed no difference between the comparison and previous-intervention regions in terms of self-perceived risk of falls (OR=1.02; 95% CI=0.88, 1.19).

Characteristics Associated With Low Self-Perceived Risk of Falls

Characteristics significantly associated with self-perceived risk of falls at the bivariate level were included in a multivariate model. Table 2 presents the parsimonious model that describes correlates of self-perceived risk of falls (variables found to be nonsignificant at the multivariate level have been removed and the modeling repeated). Men were approximately 40% more likely to perceive that they had a low risk of falling compared with women. Younger respondents were more likely to nominate a low risk of falls—persons aged in their 60s were 70% more likely and persons aged in their 70s were 50% more likely than were persons in their 80s to perceive their risk of falling as low. Those with a partner and those with private health insurance were more likely to report a low risk of falls. Self-reported general health was strongly linked to perceived risk of falls—those who rated their health more positively were less likely to perceive a risk of falling. Those without a history of falls and fall-related injuries were less likely to be concerned about falling in the future. Disagreeing or being unsure that “older people fall and there is nothing that can be done about it” was related to low self-perceived

Although these differences were statistically significant, absolute differences in the distributions of these factors were small.

Bivariate analyses indicated that persons in the previous-intervention cohort were less likely than were persons in the comparison region to agree with the statement that “older

people fall, and there is nothing that can be done about it” (24.4% vs 30.0%; $\chi^2=17.1$; $P<.001$). Previous-intervention respondents were also more likely to rate prevention of falls as a high or very high priority compared with comparison site residents (62.4% vs 57.2%; $\chi^2=11.4$; $P=.01$). Persons from both

TABLE 2—Relationships Between Low Self-Perceived Risk of Falls and Demographics, Health, History of Falls, and Attitudes Among Individuals 60 Years and Older (N = 3202): Northern Rivers, New South Wales, and Wide Bay, Queensland, Australia, 2002

	No.	Low Self-Perceived Risk of Falls, %	Crude OR	Adjusted ^a OR (95% CI)	P
Gender					<.001
Men	1084	67.8	1.58	1.42 (1.20, 1.68)	
Women (Ref)	912	57.0	1.00	1.00	
Age, y					<.001
60–69	1019	68.2	2.35	1.74 (1.35, 2.23)	
70–79	753	60.8	1.70	1.51 (1.18, 1.94)	
≥80 (Ref)	219	47.7	1.00	1.00	
Marital status					.027
Partner	1431	66.1	1.63	1.23 (1.02, 1.47)	
No partner (Ref)	559	54.5	1.00	1.00	
Had private health insurance					.016
Yes	974	66.0	1.34	1.22 (1.04, 1.44)	
No (Ref)	1016	59.3	1.00	1.00	
General health					<.001
Excellent	376	79.8	7.12	5.92 (3.90, 9.01)	
Very good	692	73.6	5.02	4.43 (3.04, 6.47)	
Good	610	59.0	2.59	2.38 (1.65, 3.45)	
Fair	252	44.0	1.41	1.40 (0.95, 2.06)	
Poor (Ref)	60	35.7	1.00	1.00	
Fell in past 12 months					<.001
No/not sure	1688	69.8	3.54	2.41 (1.80, 3.22)	
Yes (Ref)	308	39.5	1.00	1.00	
Injury (from fall) in past 12 months					.045
No/not sure	1807	67.8	3.81	1.41 (1.01, 1.98)	
Yes (Ref)	189	35.5	1.00	1.00	
"Falls are not preventable"					<.001
Disagree	1305	66.6	2.03	1.66 (1.38, 2.00)	
Not sure	255	69.9	2.36	1.93 (1.45, 2.58)	
Agree (Ref)	429	49.5	1.00	1.00	
Falls priority ^b					<.001
Don't know	59	74.7	2.15	2.90 (1.63, 5.16)	
Low	533	81.9	3.30	2.83 (2.23, 3.60)	
Medium	296	53.6	0.84	0.88 (0.71, 1.08)	
High (Ref)	1105	57.8	1.00	1.00	

Notes. OR = odds ratio; CI = confidence interval.

^aAdjusted for all other variables listed in the table.

^bThis rates how high a priority prevention of falls was for them.

others and the importance of being able to “live on their own” and maintain daily tasks. Losing one’s independence was described quite negatively. A couple of participants commented that independence incorporates or “covers” the falls and health messages. However, several people also cautioned that people try to be “too” independent. There were several comments that losing one’s independence was inevitable or once lost it was not possible to regain. One person pointed out that “some people can’t be independent” and, for that reason, suggested less emphasis on an independence message.

Fourteen participants (18.9%) chose the “stay healthy” message (i.e., “If you are more active, you will stay healthy for longer.”). Health was often described as a prerequisite for independence and the prevention of falls. Again it was mentioned that ill health may be inevitable. Eleven participants (14.9%) could not choose between the “stay independent” and “stay healthy” messages and 12 participants (16.2%) agreed with all 3 messages, stating that they were “more or less intermingled.” No participants chose the “less likely to fall” option (i.e., “If you are more active, you will be less likely to fall.”), with some suggesting that it may have negative connotations.

DISCUSSION

Residents from the previous-intervention community, which experienced a multifaceted, 5-year, fall-prevention program, were more likely than were those from the comparison community to believe that falls were preventable and to prioritize the prevention of falls. However, there was no difference between the 2 sites in terms of self-perceived risk of falls, with more than 60% of respondents in both areas rating their personal risk as “low.” A low perceived risk of falls was associated with being male, being younger (aged in their 60s or even 70s rather than aged ≥80 years), having a partner, being privately insured, and rating one’s general health positively. Absence of a recent history of falls or fall-related injury was also associated with a low perceived risk. Believing that falls were preventable and rating the prevention of falls as a low

risk of falls. Those who identified prevention of falls as a low priority were also more likely to report that they had a low risk of falls.

Focus Group Content Analysis

The majority of participants (33 [44.6%]) favored the “stay independent” message (i.e.,

“If you are more active, you will stay independent for longer.”). Reasons given for this preference are outlined in the box on page 355, along with common themes related to independence. Independence was associated with feelings of pride and making one’s own decisions. People spoke of not wanting to rely on

Reaction to 3 Fall-Prevention Messages and Themes That Emerged From 8 Focus Groups Among Individuals 70 Years and Older (N = 173): Northern Rivers, New South Wales, Australia, 2002

Key Themes	Illustrations
	If you are more active, you will stay independent for longer.
Favored “stay independent”	“[Independence] is the last thing that people like to lose.” “Independence is keeping me out of an old-age home.” “It’s your independence you miss.”
Not wanting to rely on others	“We don’t want [caregivers]; we don’t [want] our wives holding our hands.” “I don’t want to be a liability on anybody.” “I don’t like relying on other people if I can get away with doing it myself.”
Living alone and maintaining daily tasks	“Independence is very important to me; the only thing I have done is lawns mowed, because I can’t manage them any longer, but I do everything else.”
Negative impact of loss of independence	“A jolly pain” “Punishment” “Cranky” “When I lose my independence [God] can take me; what’s the use of living.”
Concern about being “too” independent	“People become too independent and don’t take the help available.” “I think that you can be too independent too, because it doesn’t matter what anybody says to you—‘oh, no; I can do that’.” “We’ve got to be independent when we live on our own, but you can take it too far.”
Losing one’s independence was inevitable; once lost, it’s not possible to regain	“[Add to message] ‘but accept assistance if it’s necessary’.” “but if that’s got to happen you can’t do anything about it” “there’ll be a time when we all have to accept help” “you can’t stay independent forever; I think people have got to accept that”
	If you are more active, you will stay healthy for longer.
Health is a prerequisite for independence and fall prevention	“If you are healthy you can stay independent for longer.” “If you are healthy you can cover all the others.”
Ill health is inevitable	“It’s hard to stay healthy as you get older, because you don’t know what’s going to break down. I mean, I’m pretty healthy, but I don’t know what could happen there, and something will happen—it happens to everybody, doesn’t it?”
	If you are more active, you will be less likely to fall.
Negative impact	“I don’t like [that] one.” “[This message] can be detrimental.”

priority were also related to low self-perceived risk. A message that emphasized independence or health was favored over a fall-related message.

A possible explanation for these findings is that the awareness-raising messages used in the previous intervention had a continuing, but limited, impact on older peoples’ perceptions related to falls. Although respondents in the intervention region seemed to have retained some of the awareness-raising messages (e.g., falls happen but they are preventable), their self-perceived risk did not differ from that of comparison community respondents. This may reflect a failure to personalize the message in terms of individual risk.

Many of the demographic and health characteristics (e.g., younger age, good or excellent self-reported health) identified in our

multivariate analyses as being associated with low perceived risk of falls were, indeed, related to relatively low fall and injury rates. However, high fall and injury rates have also been reported among healthy older people.² A prospective study of 96 healthy, active, community-dwelling women found that 49% had fallen during a 12-month period, with 23% having fallen more than once and 9% having suffered a fracture as a result of their fall.²² In another prospective study, although frail older persons were more likely to fall than were vigorous older persons, a sizeable proportion of the latter group still fell (52% and 17%, respectively).²³ In fact, individuals in the vigorous group were more likely to have experienced a serious injury from a fall, compared with their frailer counterparts (22% vs 6%). An additional examination of our own

community survey data indicated that a significant proportion of persons with characteristics correlated with low self-perceived risk reported a fall in the past 12 months. Falls were reported by 22.4% of men, 21.7% of persons aged in their 60s, 22.5% of those with partners, 24.1% of those with private health insurance, and 19.0% of those who rated their health as excellent. In fact, 39.5% of people who reported a fall in the past 12 months still reported having a low self-perceived risk of falling.

It was interesting that a low perceived risk of falls was related to a belief that falls are preventable. Perhaps those with a low self-perceived risk may be actively taking precautions and modifying their behaviors to reduce their risk of falling. However, we found limited evidence for this. Additional analyses (data not

shown) revealed that those with a low perceived risk of falls were more likely to report meeting physical activity guidelines (30 minutes of moderate-intensity exercise 5 days a week or 20 minutes of vigorous-intensity exercise 3 days a week; OR=1.49; 95% CI=1.29, 1.73). However, there was no association between self-perceived risk of falls and a number of behaviors more readily related to the prevention of falls undertaken by members of the community (e.g., consulting a health professional about medication side effects, participating in strength exercises at least twice a week, including calcium in one's diet, or having had an eye exam in the previous 2 years). Modifying one's home was modestly related to self-perceived risk of falls, but it was those with a low perceived risk who were least likely to carry out home modifications (OR=0.53; 95% CI=0.45, 0.62). Those with a low perceived risk of falling were also least likely to report wearing safe shoes daily or almost daily (OR=0.75; 95% CI=0.63, 0.89).

Results from the focus groups supported the argument that a fall-prevention message is not necessarily seen as personally relevant to older people. When presented with 3 different messages—highlighting falls, health, or independence—the majority of respondents preferred an emphasis on independence. A focus on health was also favored by a number of participants, but no one nominated a fall-prevention message. Similar findings were reported by another group of researchers who addressed older peoples' preferences for different fall-prevention messages. Information taken from a traditional fall-prevention leaflet was compared with messages focused on the benefits of strength and balance training. Focus group participants expressed a preference for messages that focused on positive benefits of improving balance.⁹

In our study, the traditional fall-prevention message was viewed as “detrimental” by some, who indicated that such messages may exacerbate fear. Fear of falling is a disabling symptom that affects approximately 34% of older women, including those without a history of falls.²⁴ Approximately 25% of those who have fallen restrict their usual activities (including potentially beneficial behaviors such as physical activity) because of injury or fear of falling again.²⁵ Research indicates that

individuals with more-positive perceptions of aging tend to practice more preventive health behaviors.²⁶ Reinforcement of a positive aging stereotype has resulted in significant increases in walking speed, improving gait, and functional independence among older persons²⁷—all factors associated with the reduction of falls and fall-related injuries.

“Independence” has been identified as a highly valued asset for older people, making it a likely focus for public health messages that target this age group. In our study, independence was linked to emotive issues such as staying in one's own home, feelings of pride, and not wanting to be a liability to others. This is consistent with other research that has identified independence as a source of self-worth or self-esteem for older people.^{11,28} Research indicates that positive messages may be more motivating to older people.^{3,29,30} As stated in a recent Australian government report, older people are “more likely to be motivated by anything that enables them to remain independent, free and in control, than they are by overt references to the impact of ageing.”^{3(p11)}

However, those who use “independence” or a “healthy aging” focus in fall-prevention messages may need to give consideration to some concerns also raised by older adults. A number of focus group participants commented that remaining active, healthy, and independent was not always possible, and several people mentioned that it was inevitable that these things are lost with age. These conflicting views are consistent with research that identified 2 life forces coexisting among older persons in varying degrees: taking precaution and striving for independence.³¹ Messages such as, “It is never too late to start being active” and campaigns that highlight the role of preventive behaviors in counteracting health complaints in later life may need to be emphasized. Concerns that some people cannot reach the “stay active, stay independent” goal may be reassured by messages such as “be the best that you can be” in programs that specifically target those with functional deficits.

Our research provides evidence that a traditional fall-prevention, awareness-raising message may not be optimally effective in community interventions. Moreover, evaluation of demographic and behavioral characteristics in

relation to perceived risk of falling suggests that a majority of the target population in a fall-prevention campaign does not see traditional fall-prevention messages as personally relevant. Our work therefore suggests that a focus on the promotion of fall-prevention strategies, such as increasing physical activity, with an emphasis on health and independence, may be more beneficial and warrants more systematic attention in future fall-prevention studies. ■

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Human Participant Protection

This research was approved by the Human Research and Ethics Committee at the Queensland University of Technology and the Northern Rivers Area Health Service Ethics Committee.

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