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Fall-Related Stigma in Older Adulthood: A Mixed Methods Approach to Understanding the Influence of Stigma on Older Adults' Reported Attitudes and Behaviours Regarding Falls

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Graduate Program in Health and Rehabilitation Sciences
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy
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FALL-RELATED STIGMA IN OLDER ADULTHOOD:
A MIXED METHODS APPROACH TO UNDERSTANDING THE INFLUENCE OF
STIGMA ON OLDER ADULTS' REPORTED ATTITUDES AND BEHAVIOURS
REGARDING FALLS

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by

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Graduate Program in Health & Rehabilitation Sciences

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
The University of Western Ontario
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THE UNIVERSITY OF WESTERN ONTARIO
SCHOOL OF GRADUATE AND POSTDOCTORAL STUDIES

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Abstract

Falls during older adulthood present a major threat to the health and wellbeing of older adults and a challenge to society. While effective fall prevention strategies have been developed to address risk factors for falls, older adults commonly resist participation in such programming and dissociate from the topic of falls in general. After reviewing research findings and the theoretical literature, support was found for approaching falls as a stigmatizing topic for older adults. Three mixed methods experiments were completed to test the influence of stigma on older adults' attitudes, opinions, and behaviours. Experiments 1 and 2 tested the labelling aspect of fall-related stigma on older adults' attitudes and reported behaviours. Experiment 1 randomly assigned participants to receive an exercise program described as either an "exercise class for older adults" or a "fall prevention exercise class for older adults". Experiment 2 modified the study design of Experiment 1 and presented each participant with a two-alternative, forced-choice response between the two exercise program descriptions. When given the opportunity to participate in either the non-labelled exercise class or the labelled, fall prevention exercise class, the majority of participants (79%) preferred the non-labelled exercise program option. However, a subgroup of older adults identified with the fall prevention label, selected it as their preferred program, and provided a logical rationale for doing so. Analyses were conducted to investigate whether other survey responses could be used to better understand participants' choices. The key factors related to participants' perceptions of falls and stigma were identified by the predictors uncovered. Experiment 3 then used the factors from Experiment 2 to

determine whether an informational message addressing the key constructs could mitigate the negative fall prevention label. After reading a randomly assigned vignette addressing the key statements, participants were asked to make a two-alternative, forced-choice response for their preferred exercise program. The results indicated that the informational vignette was effective in de-stigmatizing the fall prevention label, with 41% of respondents selecting it as their preferred program. The findings of these experiments indicate that while falls are a stigmatizing topic for older adults, it appears to be amenable to attenuation.

MeSH Keywords: accidental falls; stigmatization; aged; injury prevention and control; health promotion; social psychology; medical sociology; psychosocial factors

Statement of Co-Authorship

Chapter 1 – Written by Heather Hanson with revisions from Alan Salmoni.

Chapter 2 – Written by Heather Hanson with revisions from Alan Salmoni and Phil

Doyle. Conceptual development was aided by discussions with Alan Salmoni and Phil Doyle. The manuscript was published in *Disability and Health Journal*.

Chapter 3 – Written by Heather Hanson with revisions from Alan Salmoni, Phil Doyle,

and Treena Orchard. Study design was created in collaboration with Alan Salmoni, Phil Doyle, and Treena Orchard. Heather Hanson completed all qualitative and quantitative data collection, verification, and analysis.

Chapter 4 – Written by Heather Hanson with revisions from Alan Salmoni, Phil Doyle,

and Treena Orchard. Study design was created in collaboration with Alan Salmoni. Heather Hanson completed the data collection, verification, and analysis for both the qualitative and quantitative datasets.

Chapter 5 – Witten by Heather Hanson with revisions from Alan Salmoni.

Epigraph

*To raise new questions, new possibilities, to regard old problems from a new angle,
requires creative imagination and marks real advance in science.¹*

¹ Einstein, A., & Infeld, L. (1938). *The evolution of physics: The growth of ideas from early concepts to relativity and quanta*. New York: Simon and Schuster, Inc.

To my family, for their unwavering support...
...over time and across the distance.

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Chapter 1: Introduction

Changing demographic patterns have resulted in an aging Canadian population. Data from Statistics Canada indicated that the number of older adults, defined as individuals 65 years and older, increased from 2.4 million to 4.2 million people between 1981 and 2005. These absolute numbers represent an increase in the total share of the Canadian population from 9.6% to 13.1% (Turcotte & Schellenberg, 2007). Projections indicate that the number of seniors in Canada will continue to increase to an estimated minimum of 9.9 million by 2036, equivalent to an approximate 25% share of the overall population (Statistics Canada, 2010).

Population aging presents many challenges, most notably political, economic, and social aspects related to the population structure (Grant et al., 2004). Maintaining the health of communities and individuals becomes an important factor in dealing with an aging population. Prevention of unintentional injury, and the health care costs associated with treating such injuries, is one strategy for health promotion. Thus, there is a need to prevent falls that occur in older age.

Falls Among Older Adults

Ontario injury data has reported that one older adult is hospitalized every thirty minutes due to a fall (Smartrisk, 2006). Falls present a major threat to the health of older adults. Falls that result in injury can result in emergency department visits, some of which lead to admission for hospitalized care, transfer to other inpatient facilities such as rehabilitation centres, transfer to long-term care facilities, or death (Smartrisk, 2006). While fall injury rates demonstrate the significant physical costs to individuals and

financial cost to society in general, they represent only the tip of the iceberg. Injurious falls requiring medical attention are a subset of the broader picture. Falls causing personal injury where the older adult does not seek professional medical attention sit below the tip of the injury iceberg. Still below that are falls that do not result in injury, yet result in psychological or social costs to individuals, such as fear of falling or reduction in social participation. The problem of falls extends far beyond hospital admissions.

Falls can result in negative consequences for functioning and psychosocial wellbeing. Tinetti and Williams (1998) found that both injurious and non-injurious fall events had a strong effect on declines in basic and instrumental activities of daily living. They also found that multiple non-injurious falls were associated with decline in social activities. Falls can have psychological repercussions for older adults, such as reductions in self-efficacy and confidence (Smartrisk, 2005).

Rogers and coworkers (2003) identify numerous contributors to falls among older adults. Age-related deteriorations, or internal contributors, can include reduced balance, lower extremity strength, poor mobility and gait disorders, reduced visual acuity, acute illness, and chronic disease. Environmental, or external, contributors can include inadequate lighting, lack of handrails, barriers and obstacles, polished or waxed surfaces, differences in sidewalk surfaces, and weather including ice and snow. Missing from this categorization are behaviours of the individual such as poor attention, rushing, multi-tasking, and risk taking, categorized as unsafe actions and decisions by Zecevic and colleagues (2009). The risk of falling increases linearly with the number of risk factors (Tinetti, Speechley, & Ginter, 1988). This list, while incomplete, demonstrates the range

of factors contributing to the occurrence of falls. Fall prevention strategies have been developed to address such factors.

Effective fall prevention programs have been developed, empirically tested, and implemented (for a recent review of programs implemented in communities across Canada, see Scott, Wagar, & Elliott, 2010). Findings from well-conducted reviews suggest that fall prevention initiatives can result in reductions in the incidence of falls (Gillespie, Gillespie, Robertson, Lamb, Cumming, & Rowe, 2003) and fall-related injuries (McClure, Turner, Peel, Spinks, Eakin, & Hughes, 2005). Fall prevention programs can be effective in improving known fall risk factors (Shumway-Cook, et al., 2007) and for addressing physiological risk factors.

Exercise can effectively address some of the physiological and psychological fall risk factors associated with advancing age and has considerable support as a fall prevention strategy. Multi-modal exercise programs have been found to have positive effect of fall prevention (Baker, Atlantis, & Fiatarone Singh, 2007). Classes for community-dwelling older adults that included balance, coordination, aerobic, and muscular strength exercises were found to improve balance and reduce the rate of falling (Barnett, Smith, Lord, Williams, & Baumand, 2003). Exercise can also reduce injuries due to falls. Peel and colleagues (2007) found that being active had an independent protective effect on the risk of hip fracture.

Tinetti and Williams (1998) have suggested that falls meet the criteria for prevention; they are a health concern with a high frequency, evidence of preventability, and a heavy burden of morbidity. Yet, fall prevention programs tend to have low participation rates considering the size of the targeted older adult population. In

discussing the low uptake rates for community-based fall prevention interventions, Yardley and colleagues (2006) suggested that the low participation rates demonstrate considerable reluctance by older adults to take part in such programs. Uptake of activities by older adults presents a major challenge for fall prevention efforts.

Competing attitudes may influence older adults' participation rates. On one hand are the preventive effects of participation but on the other hand are the beliefs surrounding self-identity and the incompatibility of fall prevention efforts with an older adult's sense of self. People will only change their lifestyle or incorporate new behaviours if the benefit of doing so outweighs the cost or effort involved in overcoming any associated barriers (WHO, 2007). Fall prevention programs primarily focus on the benefits to older adults from taking part. The fall prevention literature has not effectively addressed why older individuals appear to resist association with the topic of falls, deny appropriateness of fall prevention advice, or avoid entry into fall prevention programming. The concepts of stereotyping, ageism, and stigmatization can help breach this gap in understanding.

Stereotypes and Ageism

As part of the everyday social interactions that take place, humans categorize and group individual differences. First appearances allow for the categorization of individuals based on attributes, the ascription of a social identity, and the generation of normative expectations (Goffman, 1963). In order to be successful at functioning in a complex social environment, individuals employ cognitive shortcuts and approximations (Cuddy & Fiske, 2002). Such shortcuts are stereotypes. Cuddy and Fiske (2002) argue that stereotypes serve two primary functions. They allow individuals to make social

judgements more easily and provide information that guides interactions with others.

Because stereotypes are generalizations, they are sometimes accurate and sometimes not.

A number of stereotypes exist regarding older adults and the aging process in general. Age stereotypes include beliefs that older adults are sick, frail, and dependent (Krauss Whitbourne & Sneed, 2002), incompetent (Golub, Filipowicz, & Langer, 2002), cognitively and psychologically impaired (Krauss Whitbourne & Sneed, 2002), and unable to contribute to society (Levy & Banaji, 2002). Attitudes and beliefs about aging are culturally embedded and affect how older adults are perceived and how they view themselves (Grant, 1996). Such negative evaluations of older adults demonstrate ageist perspectives.

Ageism is the systematic stereotyping of people based on age (Calasanti, 2005) and the associated prejudice or discrimination that result (Ory, Kinney Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003). Robert Butler is credited with coining the term ageism, powerfully arguing that it reflects a deep seated uneasiness, revulsion, and distaste for growing old and fears of powerlessness and uselessness associated with being old (Butler, 1969). While ageism is a subjective experience (Butler, 1969), ageist attitudes stem from cultural beliefs about older adults and the aging process (Kite & Smith Wagner, 2002) and are reinforced by society (Butler, 1969).

Ageism is widespread in society. Palmore (2001) found that 77% of survey respondents, 60 years of age and over, reported experiencing at least one incident of ageism and more than half of the sample reported occurrences more than once. Types of ageism experienced ranged from disrespect, to patronization, and assumptions about ailments and abilities. Ageism can be perceived or actually experienced (Palmore, 2001),

but the negative impact on individuals remains whether the occurrence took place or was simply perceived to have taken place. Calasanti (2005) has noted that it is not the physical changes associated with aging, but rather the meaning that is given to such changes that leads to ageism. Falling in older adulthood is subjected to ageist perspectives and stereotyping.

If old age is equated with disease, decline, and increasing dependence (Calasanti, 2005; Kingston, 2000), it is not surprising that older adults make deliberate efforts to avoid identifying themselves as 'old' (Minichiello, Browne, & Kendig, 2000). Stereotype threat is the fear of becoming like a particular stereotype. In response to stereotype threat, Krauss Whitbourne and Sneed (2002) state that people disidentify or reconceptualise their identity in order to remove the stereotyped characteristic from being incorporated into self-evaluation.

Ageist perspectives and stereotype threat help to explain older adults' unwillingness to partake in fall prevention programming, but do not capture more devastating consequences associated with negative views regarding falls in older adulthood. Dobbs and colleagues (2008) stated that signs of disease or discredit associated with aging contribute to negative evaluations of older adults. When the aging process, or a related health concern such as falling, results in the devaluation of individuals simply due to possession of the attribute, the result is stigmatization.

Stigma

Stigma refers to an attribute that is deeply discrediting (Goffman, 1963). Goffman expands on his definition to recognize that stigma is the relationship between an attribute and a stereotype. Stigma is a consequence of social comparisons (Coleman,

1997) and group differences based on categorization. The labelling that results from categorization of groups leads to a status loss and a downward placement of the individual in the status hierarchy (Link & Phelan, 2001). Stigma mirrors culture and society (Coleman, 1997) so ageism and stereotypes regarding older adults can result in stigmatization.

Falls can represent a stigma symbol for older adults. Stigma symbols are described by Goffman (1963) as signs that draw attention to a debasing identity, reducing or devaluing the individual. Falls can also represent a social identity that can be both discrediting and discredited. When the actual membership in a group is known about or evident in interactions with others, the individual is discredited. If group membership is not immediately apparent or known beforehand, it is a discreditable social identity (Goffman, 1963). Older adults can try to counter the stigmatizing effect of falling through stigma management. Stigma management strategies attempt to counteract the stereotype or normative expectations related to the stigmatized attribute. Older adults can try to conceal their stigmatized status through secrecy or the control of information, the use of selective disclosure of information to a few others, or by passing as a normal person through rejecting the stigma symbol and avoiding the disclosure of discrediting information (Goffman, 1963).

For older adults who have not yet experienced stigma related to a fall, they may have fears acquiring the stigmatizing status. This phenomenon is known as stigma consciousness (Pinel, 1999) and is the expectation of being judged on the basis of group membership. While stereotype threat is a concern about one's own behaviour complying with stereotypes, stigma consciousness is the application of a stereotype irrespective of

one's actual behaviour. Stigma consciousness may help to explain the low participation rates of older adults in fall prevention programming.

The reluctance of older adults to be viewed as old, frail, or disabled could be contributing to a lack of participation in groups that are feared to hold negative stereotypes. Some people distance themselves from negative characteristics associated with their social category (Hodson & Esses, 2002). Denial of the need for fall prevention advice may allow older adults to maintain positive perceptions regarding their abilities. The loss of control associated with falling and the associated fear of embarrassment may be reasons why older people are reluctant to talk about falls or acknowledging their occurrence (Kingston, 2000; WHO, 2007). Yardley and colleagues (2006) suggested that older adults may reject or publicly deny their risk for falling in order to avoid undermining their status as competent and independent. It appears that previous research findings demonstrate many potential negative consequences of undertaking fall prevention measures for older adults. In order to tip the scales to allow the benefits of participation in fall prevention activities to outweigh the barriers, a better understanding of older adults' attitudes and opinions, and their subsequent influence on behaviours, is needed. Thus, stigma offers an innovative approach to understanding the fall-related attitudes and behaviours of older adults.

Research Objective

Existing knowledge on the importance of preventing falls among older adults and the resistance of older adults to taking part in prevention activities generated an interest in better understanding the factors that contribute to older adults' fall-related health behaviour choices.

The overarching research objective was to determine whether fall-related stigma and its associated concepts could be effectively used to understand older adults' attitudes, opinions, and behaviours. This line of research has the potential to add a unique contribution to the existing falls research as it empirically tests the influence of stigma concepts on older adults' attitudes and reported behaviours regarding fall prevention programming.

Selection of the Mixed Methods Design

An embedded experimental mixed methods research design was used (Creswell & Plano Clark, 2007). Quantitative survey instruments and qualitative content analysis of text data were used. Quantitative analyses were conducted using a statistical data analysis package (SPSS Version 16.0, [SPSS, Inc., Chicago, IL]) and qualitative analyses were conducted using contemporary content analysis strategies (Schwandt, 2007). The central assumption of the mixed methods design was that the quantitative and qualitative approaches, when used together, would provide a better understanding of fall-related stigma than could each approach alone. Addressing falls as a potentially stigmatizing topic is an innovative approach to an existing area of gerontological study. This created the desire to incorporate empirical testing of stigma hypotheses while also better understanding the complexity of fall-related stigma through uncovering the many meanings associated with the topic.

The mixing of the qualitative and quantitative data was achieved at the design level and not just the level of the data. The qualitative data was embedded within the quantitative data, described by the common convention of the QUAN(qual) notation system. The embedded design allowed the qualitative data to play a supplemental and

supportive role within the overall experimental design. The qualitative and quantitative data sets were concurrently collected.

The concurrent data collection process followed the ‘questerview’ method described by Adamson and colleagues (2004). Adamson and colleagues concluded that the questerview process led to rich sources of qualitative information as it prompted respondents to discuss their understanding of questions, offer explanations for their responses, and share stories from personal experiences related to the survey questions asked. Since Adamson and colleagues’ initial reporting of the questerview method, it has been successfully utilized in other health contexts, including the study of musculoskeletal pain (MacKichan, Wyld, & Dieppe, 2008), alternative medicine use for chronic health problems (Paterson, 2006), and the use of health services (Adamson, Ben-Shlomo, Chaturvedi, & Donovan, 2009). The questerview process includes the completion of questionnaires by participants as they simultaneously think-out-loud to share their thought process regarding the responses they make and the reasons underlying those choices. The end-product of the questerview process is both quantitative survey responses and qualitative audio data.

Overview

The dissertation chapters that follow have been developed to build upon one another. Chapter 2 expands on the concepts of stereotypes, ageism, and stigmatization introduced above. It outlines the existing empirical evidence and theoretical concepts that contribute to understanding fall-related stigma. The review of literature was vital for theoretically grounding the inquiry into fall-related stigma and included the major theories of identity threat, modified labelling theory, and attribution theory. The review

concludes that approaching falls as a stigmatizing topic would aid in the understanding of older adults' fall-related attitudes and behaviours.

Chapter 3 empirically assesses the influence of stigma. In Experiment 1, the labelling aspect of stigma was tested to determine whether the title of an exercise program influenced older adults' attitudes regarding the program. Experiment 2 continued the investigation of program labelling to determine whether the fall prevention title used in the promotion of an exercise program influenced older adults' reported program preferences. Experiment 3, outlined in Chapter 4, used the findings of Experiments 1 and 2 to determine whether the negative impact of the fall prevention label could be mitigated by the presentation of an informational message. Vignettes incorporating de-stigmatizing constructs were presented to older adults prior to being asked to make a choice regarding exercise program preference. The series of experiments in Chapters 3 and 4 make a significant contribution to existing falls research as they are the first known studies to directly assess the stigmatizing potential of the fall prevention label.

Finally, Chapter 5 provides a general discussion of Experiments 1 to 3. Findings from across the three experiments and salient points worth further elaboration are discussed. The implications of the results for fall prevention practitioners and for future fall prevention programming are discussed.

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Chapter 2 – Literature Review²

Broadening our understanding: Approaching falls as a stigmatizing topic for older adults

Introduction

The investigation of falls among older adults has been a fruitful area of study over the past three decades. Much knowledge has been uncovered about the physical risk factors for falls (Bergland & Wyller, 2004; Wallmann, 2001), the consequences of falling for the individual (Stel, Smit, Pluijm, & Lips, 2004; Yardley & Smith, 2002), costs to the health care system (Scott & Gallagher, 1999; Wilkins, 1999), and the effectiveness of various interventions (Gillespie et al., 2003; Tinetti et al., 1994). However, the biomedical model has dominated the field with its positivist research paradigm (Kingston, 2000). While much can be gained from viewing falls through a biomedical lens, approaching falls from this perspective alone may not fully uncover the complexities of fall events and reporting in older adulthood.

A fall can impact the life of an older adult in a number of ways. Falls can threaten an individual's physical well-being if it results in injury. Such biomedical outcomes are commonly measured in falls research and may include functional assessments and inquiry into the potential for hip fracture or underlying health concerns (Aharonoff, Dennis, Elshinawy, Zuckerman, & Koval, 2003; Perell et al., 2001; Tinetti,

² A version of this chapter has been published (Hanson, H. M., Salmoni, A. W., & Doyle, P. C. (2009). Broadening our understanding: Approaching falls as a stigmatizing topic for older adults. *Disability and Health Journal*, 2 (1), 36-44.).

Speechley, & Ginter, 1988). However, falls also can influence psychological and social well-being. Psychological outcomes associated with falls may include inquiry into self-confidence or fear of falling (Li, Fisher, Harmer, McAuley, & Williams, 2005; Means, O'Sullivan, & Rodell, 2003; Myers et al., 1996). Social outcomes may include inquiry into engagement in activities or social support (Delbaere, Crombez, Vanderstraeten, Willems, & Cambier, 2004; Faulkner, Cauley, Zmuda, Friffin, & Nevitt, 2003; Fukukawa et al., 2008).

Recognizing the many potential outcomes of a fall is important for gaining a comprehensive understanding of the event. A variety of approaches to attaining such understanding and insight are also necessary. Beyond common biomedical approaches to the study of falls, a comprehensive understanding of the impact of psychosocial factors can aid our understanding of the emotions and actions associated with falling, the reporting of falls, and even entry into falls prevention programs by older adults. One such strategy is to consider the literature on stigma and contemplate its application to the study of falls.

Stigma has been an important topic of study for many health-related issues. Urinary incontinence (Paterson, 2000), mental health (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001), HIV-AIDS (Berger, Estwing Ferrans, & Lashley, 2001), and disability (Susman, 1994) exemplify how consideration of stigma has allowed researchers to better understand the interaction between health conditions and their social implications. These health conditions hold significant social repercussions as individuals may be viewed in a negative light because of their association with the health condition or its attributes. Individuals may wish to conceal or avoid disclosing the health condition

to prevent or postpone stereotyping, discrimination, devaluation, and ultimately, stigmatization. Falls among older adults can be investigated with consideration and application of the stigma literature to better understand its potential influence. If falls and fall reporting hold stigmatizing connotations for older adults, then utilization of appropriate countermeasures would be necessary to decrease stigmatization.

Thus, the purpose of this paper is to discuss two areas related to the stigma associated with falling in older adulthood. First, drawing on theory and previous literature, the applicability of viewing falls as a stigmatizing topic will be explored. Attention will be drawn to how the study of falls can be improved by better understanding the potential role that stigma plays in reporting and discussing falls in older adulthood. Second, research implications of the stigmatization of falls will be discussed and future research directions will be provided.

Falls as a stigmatizing topic

Stereotypes, Ageism, & Stigma

Older adults are not a homogenous group but are often stereotyped in a fashion that makes them appear to be. Today's older adults are a diverse group of individuals and can vary as much within age groups as they do between age groups. Individuals will experience the aging process in different ways and, while some aging events will be similar, each individual will have a unique aging experience. However, this is often not the way that older adults are envisioned or portrayed. For example, irrespective of their actual circumstances, older adults might be spoken to loudly if assumed to have hearing loss; to have health concerns dismissed if considered as part of the aging process; or

talked down to or patronized simply because they are visibly older (Palmore, 2001). Generalizations about aging can lead to prejudice or discrimination against older people, often termed 'ageism' (Ory, Kinney Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003). Culturally embedded attitudes and beliefs about the aging process affect how older people are perceived (Grant, 1996). Stereotypes about older adulthood tend to ascribe the same negative attributes to all older adults regardless of individual applicability.

Similar to the prejudice or discrimination that results from ageism, stigmatization can occur as a result of the adverse effects of labelling. In his pivotal work on the topic of stigma, Goffman (1963) used the language of deviance to describe discredited social identities that result from negative differences between people or groups. He proposed that certain attributes are used to categorize people and that attributes of difference or deviance can taint our view of people, particularly when an attribute has an extensive discrediting effect. In such cases, the attribute results in stigma.

Link and Phelan have built on Goffman's concept of stigma as the relationship between an attribute and a stereotype. They argued that people are stigmatized when they are labelled, set apart, and linked to an undesirable social characteristic which leads to status loss or discrimination (Link & Phelan, 2001). Expanding on their earlier work on labelling, Link and Phelan (2006) argued that a stigma is generated as a result of a process of five components. First, humans identify and label differences. Second, the labelled person is linked to undesirable characteristics as part of the process of stereotyping. Third, there is a distinction between 'them' and 'us' from the labelling group, followed by, fourth, the experience of discrimination and loss of status for those in the labelled group. Finally, there is an exercise of power by the labelling group and the

outcome is stigmatization. While much of Link and Phelan's work has been in relation to mental health, Weiss and Ramakrishna (2006) offered a definition of stigma aimed at being more applicable to a variety of health conditions. They define a health-related stigma as being "a social process or related personal experience characterized by exclusion, rejection, blame, or devaluation that results from experience or reasonable anticipation of an adverse social judgment about a person or group identified with a particular health problem". It is of interest that these authors have included the idea of "reasonable anticipation" of stigma. The anticipation of stigma holds the same potential for negatively influencing an individual as does an actual stigma experience. While much of the work on stigma has been applied to health conditions that can easily be understood as stigmatizing, such as HIV-AIDS, mental health, disability, and urinary incontinence, appreciation of other health conditions may benefit from the application of a stigma approach. We argue that falls in older adulthood is one such area of research that could gain understanding by applying the concepts of stigma to its study.

Fall Reporting in Older Adulthood

The wealth of information gained through the study of falls has improved our knowledge of falls in older adulthood and has provided the impetus for implementing fall prevention programs. The foundation of previous research also has allowed us to identify areas of study where challenges to our complete understanding of falls exist. One such challenge to research on falls is identifying 'fallers' and providing early assistance to them.

One of the difficulties encountered by researchers studying falls is that monitoring falls in a community setting requires the use of self-report (Scott, Dukeshire, Gallagher,

& Scanlan, 2001). Retrospective recall and prospective data collection have been utilized by researchers to determine who has fallen and the number of occurrences. Retrospective recall, for example, asks older adults to think back in time for a duration determined by the researcher and report how many times a fall has occurred. To determine whether retrospective recall could, in fact, accurately identify fall events, Hanson (2006) used a qualitative approach to uncover the mental process implemented by older women when asked to recall any falls in the previous 12 months. It was found that many falls were recalled vividly as events that could be placed in a temporal order. As an alternative to retrospective methods, prospective methods collect fall data on a timeline more synchronous to the event itself. One of the forms of prospective data collection is the postcard reporting strategy, which is considered the gold standard in falls research. Enrolled participants are asked to mark whether or not any falls were sustained on a provided postcard and to mail it to the researcher at pre-determined intervals. Participants late in returning a postcard receive a reminder telephone call. If a fall is reported, it is followed up by a member of the research team to gather the details surrounding the fall.

Regardless of the method employed, self-reporting of falls has its flaws (Cummings, Nevitt, & Kidd, 1988; Hale, Delaney, & Cable, 1993; Peel, 2000). One obvious flaw occurs when the individual is unable to recall the details of the event. Examples of this might include cognitive impairment or a loss of consciousness. In such situations, accounts may be obtained by witnesses to the event or through patient records or hospital charts. In community-dwelling older adults, however, information about falls often needs to be obtained directly from the person who fell; therefore, self-report is a

critical source of acquiring fall data (Cumming, Kelsey, & Neviott, 1990). A major problem with both retrospective and prospective data collection methods is that they rely on the older adult to initiate reporting. If a fall is recalled through retrospective methods, the individual can self-edit and deny its occurrence. Similarly, individuals who have fallen can choose whether or not to accurately detail their report of any falls during prospective methods. If individuals have the opportunity to self-edit their account of an event, it raises the question of what factors influence whether an older adult discloses the occurrence of a fall. Perhaps a fear of labelling and stigmatization stops older adults from reporting falls.

Stigma can be thought of as an interaction between the social world and the psychological self. Relativists and social constructionists argue that we live in a socially constructed world (Gergen, 1985; Pawson, 1999). Society influences our overall understanding of the meaning of events and identities, but our psychological interpretation also contributes to how we attribute and interpret events and assign meaning. The reporting of falls by older adults provides an example of the interaction between social constructions and psychological interpretations. For example, falls during older adulthood are viewed in relation to the aging process which is itself a social construction (Powell, 2006). If a fall is experienced, the individual must make a number of decisions about how to interpret the fall and whether actions need to be taken as a result of it. It is, therefore, the interaction between social constructs and the psychological self that prompts the question of whether an evaluation of stigma would be beneficial to the study of falls and falls reporting. Can we gain a better understanding of an individual's response to falling by viewing it through a stigma lens?

Stigma is relationship- and context-specific (Major & O'Brien, 2005) and is not necessarily perceived and experienced in the same way among different segments of a community (Weiss & Ramakrishna, 2001). Just as falls need to be understood in context (Kingston, 2000), so too does the stigma associated with falls and its reporting. Stigma is not an automatic result of an attribute and, therefore, not all settings and circumstances result in a negative response and stigmatization (Susman, 1994). The meaning of stigma is learned through direct exposure to rejection and disapproval from others (Schneider & Conrad, 1980). Luken (1987) stated that stigmatization is most likely to occur in demanding situations where failure or an adverse outcome can impact on an older adult's physical or mental health, such as incorrectly recalling specific details in a group social setting or attempting a physical task that could previously be completed without difficulty. A fall that results from a demanding situation may result in embarrassment, physical injury, and withdrawal from activities. These adverse outcomes create the potential for stigma to occur as a result of reporting such a fall in older adulthood.

The subject of falls has been identified as an emotive topic (Ballinger & Payne, 2002) which can lead older adults to feeling sensitive and hesitant about discussing any falls sustained. Yardley, Donovan-Hall, and coworkers (2006) suggested that fall prevention measures hold negative social consequences for older adults. That is, falls and subsequent fall prevention programs can threaten autonomy and personal identity. They reported that older adults consider the trade-off between participation in fall prevention programs and the risk of falling. If the benefits offered by involvement in a fall prevention program, such as increased knowledge, improved balance, or greater confidence, are not perceived to be greater than the threat to the older adult's personal

identity from being associated with physical decline or increased risk of falling, the negative connotations of taking part in the program outweigh gains that the program might offer. The potential negative consequences of reporting a fall or enrolling in a fall prevention program can be better understood by utilizing theory and previous research. Identity threat, modified labelling theory, and attribution theory can all shed light on the underlying issues associated with sustaining and reporting a fall. The contribution of these theories to the stigma associated with falling in older adulthood will be outlined in turn below.

Identity Threat

As humans, our social identities allow us to determine where we fit into the larger social structure. Along with self-concept, social identity is central to human social conduct (Kelly & Field, 1996). Aging can create a transition in identity due to the associated changes in appearance and physiology of the body (Kelly & Field, 1996). Kelly and Field (1996) argued that physical changes to one's body provide signals for identity construction. Because identity plays an important role in interactions with others, how actions are interpreted, and how others and the self are viewed, threats to identity can create emotionally charged situations. When a threat to identity occurs, the individual can react by either working to restore the original identity or developing a new identity more congruent with the changes that result from the threat. In the case of illness, identity can be overshadowed by negative labels (Kelly & Field, 1996) which can result in change of the primary identifying characteristic of an individual, or master status, where the individual becomes identified foremost by the illness or disability (Susman, 1994). Falls may threaten the identity of older adults and the threat to self-

identity or the need to reconceptualise the self may deter the reporting or discussion of any falls sustained.

An individual's self-conception is a cognitive construct and is derived from everyday life (Kelly & Field, 1996). Older adults may not think of themselves as being a faller because they do not identify with that group. When asked about falls, either prospectively or retrospectively, people who do not think of themselves as fallers may be less likely to label an event as a fall or report a fall if it has indeed occurred. This may relate to the work of Ward (1977) who found that people identify themselves in particular ways out of continuity and habit. If reporting a fall will require the older adult to re-evaluate how they view themselves, older adults may be resistant to disclosing its occurrence. Reporting falls to physicians or entering into fall prevention programs may be viewed as legitimizing the fall, or giving significance to its occurrence, thus, requiring a need for the construction of a new social identity (Kelly & Field, 1996). If an older adult can quickly move past the fall occurrence, identity can be restored; however, if the fall requires recovery from shock or injury, the individual may have to reconceptualise their identity. The resistance to a change in self-identity as a result of a fall may be linked to a fear of devaluation. Those who are known to have experienced a fall, or display a marker of decline, risk being perceived as a burden on society in a culture that values individual contribution (Watkins & Gibbon, 2001). Stigma can be further linked to identity through the concept of stigma potentials. A stigma potential is described by Schneider and Conrad (1980) as an attribute that has the potential to be discrediting to one's personal identity. If the stigma is invisible, identity can remain intact. But, as the number of those aware of the stigma increases, the need to re-define identity also

increases. If a re-definition of the self is not desired, individuals must disclose the stigmatizing factor to as few others as possible in an effort to preserve the current self-conception. This may influence an older adult's willingness to discuss or report falls.

Modified Labelling Theory

The potential threat to self-identity resulting from a fall may evoke a fear of being labelled as a 'faller'. Modified labelling theory suggests that labelling can lead to negative outcomes even if the labelling does not directly produce a health condition (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989). Originally applied in the context of mental health, the theory suggests that while labelling does not produce or create mental illness, labelling can impact the willingness of an individual to seek treatment, thus leading to a negative health outcome. Modified labelling theory focuses on the consequences of labelling and was developed as an extension of Scheff's labelling theory, which focused on the factors that lead to labelling (Link et al., 1989). The meaning of 'growing old' is a social construct that holds different meanings for different individuals and varies by context. It includes an evaluative process analyzed in social situations (Luken, 1987). Health concerns can evoke certain labels, especially when they are perceived to be related to the aging process. Through socialization, all individuals form conceptions of the meaning associated with a particular status. For example, commonly held public conceptions of people with mental illness may include the generalizations that they are violent and dangerous (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). Forming a conception includes assessing the extent of devaluation and discrimination that occurs, or the loss of status and social distancing, respectively. After conceptions have been formed, individuals then develop expectations of the

outcome of holding such status. Such expectations are developed both by individuals in society with the status and those who do not hold the status. If an individual with a particular status believes that he or she will be discriminated against or devalued, the individual may respond by taking actions to protect against stigmatization. Ward (1977) identified that the personal impact of labelling requires awareness of the label and the stigma attached to it, along with the perception that the label is applicable. Older adults make deliberate efforts *not to be viewed* as old and may deny the personal appropriateness of being labelled as such (Ward, 1977; Minichiello, Browne, & Kendig, 2000). Minichiello and colleagues (2000) make the distinction between ‘becoming’ older and ‘being’ older. The former occurs as part of the aging process, but where individuals are still attempting to meet certain expectations based on their abilities. In the latter, individuals no longer attempt to meet the expectations others have of them and are then viewed as being old. The health and coping abilities of older adults can serve as a marker of the transition from growing older to being older and can be observed and assessed by others. The transition from becoming older to being old can be considered a status passage, identified by Kingston (2000) as the movement from one period of life to a different phase of the lifecourse. Older adults aiming to avoid the label of being old also may avoid the labels attached to health events considered part of the aging process, thus avoiding one label by disassociating from another. As a result, the fear of being labelled in a particular manner, that is, creating the attachment of stigma, may impact the decision to report a fall.

Link and colleagues (1989) highlighted three potential responses to labelling. The individual can respond with secrecy by concealing the attribute, with withdrawal through

avoidance, or with education through preventive telling. Preventive telling might involve disclosing the threat to only select individuals or in particular circumstances and can be employed as a method of influencing others' reactions (Schneider & Conrad, 1980). In their work on urinary incontinence, Mitteness and Barker (1995) suggest a disconnection between the personal relevance of labels and the labels that are applied to others with a similar health condition. They found that those with urinary incontinence negatively label others with the health condition, yet they denied that the same label personally applied to them. This finding can be connected to falling in later life. Kingston (2000) suggests that a fall is a symbol of decline. Perhaps those who experience a fall negatively label the falls of others as being related to the aging process yet deny that their fall holds similar personal relevance.

Attribution Theory

Just as labelling may lead to stigmatization, the cause to which a fall is attributed can also lead to the experience of stigmatization for older adults. Attribution theory relates to the perception or inference of cause. The theory holds that we interpret behaviour in terms of the cause of the behaviour. The interpretation of the behaviour then plays an important role in determining our reaction to it (Kelley & Michela, 1980). Actions can be attributed to a variety of causes, which can include skill level, external control, and intention. In addition, the attribution may vary depending if the action is viewed from the perspective of the individual or that of an observer. Attribution to preventable or inevitable circumstances may influence the interpretation of cause. The attribution of a fall to a cause that will quickly be dismissed may allow older adults to distance themselves from being labelled as a faller. For example, Braun (1998) reported

that environmental factors were perceived by older adults as most likely to cause a fall and poor judgment, distraction, and mental impairment were least likely to be cited as causing falls. Similarly, in comparing the reasons cited for falls between older adults and health care professionals, Zecevic, Salmoni, Speechley, and Vandervoort (2006) found that in addition to both groups reporting balance as a reason for falling, health care professionals commonly cited medical conditions while older adults cited weather and inattention as reasons for falling. If a fall is dismissed as a random event then it will have little potential to influence the passage into other aspects of life status, such as old age (Kingston, 2000). However, if a fall is viewed as an indication of more serious issues, such as a major health concern, then it may initiate a status passage or accelerate one that is already occurring (Kingston, 2000). When falls are attributed to chance or circumstance, older adults may self-identify as a non-faller and consider themselves unsuitable for fall prevention programs. Yardley, Donovan-Hall and coworkers (2006) found that older adults accepted certain aspects of falls prevention advice but would report other aspects as being unsuitable to them due to personal circumstance or preference. For example, participants of the study reported that falls prevention advice was potentially useful but would interfere with their lifestyle or freedom and should be targeted to people older than they were.

Attribution of cause appears to influence the perceived seriousness of a fall and the subsequent need to take action based on the fall. Therefore, it can be extended that attribution would influence an older adult's willingness to report falls as well. Ballinger and Payne (2000) found that older adults and therapists differ in their views of the factors that contribute to a fall. Therapists reported that the decisions and behaviours of the older

adult were the reason for falling. In contrast, older adults cited the cause of a fall as being the result of the incompetence of others or bad luck and represented themselves as competent and able. If older adults perceive that they will be blamed and devalued because of a fall, it is understandable that they would not wish to report falling or be considered a faller. Thus, if the attribution of cause leads older adults to anticipate being blamed, devalued, or stigmatized, they may be less likely to report or discuss falling.

Taken together, identity threat, modified labelling theory, and attribution theory all contribute to understanding the potential for falls to be a stigmatizing topic. Recognizing the potential for stigma associated with reporting and discussing falls will allow a greater understanding of the implications stigma can have for research on falls among older adults.

Research Implications

Linking Theory to Research

There are a number of ways in which the theoretical topics discussed above aid in the understanding of falls and fall reporting as a potentially stigmatizing topic. Ballinger and Payne (2002) suggested that falling is a topic many are anxious to distance themselves from in an effort to avoid being associated with stereotypes, such as being vulnerable or frail. Older adults who are eager to distance themselves from the label of being a 'faller' may then consciously avoid disclosing when a fall has occurred. Avoiding the label of being a faller by incorrectly reporting or denying falls can impact research that uses such labels to recruit research participants or categorize participant

groups. The influence of these challenges on the research process will be briefly outlined.

If researchers seek to recruit participants based on self-reported fall history within a given timeframe and older adults consciously avoid disclosing past falls, studies making use of such recruitment methods will be impacted. Older adults may choose not to participate in the research process if it is thought to label them in an undesired way. The self-selection process could have significant impacts on the results of research that aims to recruit from the older adult population. If stigma is preventing older adults who are sensitive about falls from participating in research studies, it could bias the recruited sample and the subsequent results. Research on falls assumes that, within the inclusion and exclusion criteria, participants represent the larger population of older adults. If the only older adults participating in research studies are those not impacted by stigma, study findings generalized to all older adults are misrepresentative.

One way to avoid association with a stigmatizing label such as being considered a faller and, therefore, an appropriate candidate for intervention is to deny personal relevance or the applicability of risk. In their study of the stigma associated with mental health issues, Link and Phelan (2006) reported that the fear of being labelled with mental health issues may cause individuals to delay or avoid seeking treatment altogether. Further, those already labelled may decide to distance themselves from the label. Yardley, Bishop, and colleagues (2006) found that older adults denied they were at risk of falling. Denying personal applicability of a health concern may be an attempt to disassociate with any negative connotations surrounding the health issue. Similarly, Yardley, Donovan-Hall, and coworkers (2006) reported that while some older adults may

feel at risk of falling, they will publicly deny their risk to ensure they are not associated with stigmatizing identities such as being considered old or frail. If a person is resistant to or actively avoids being labelled in a particular manner, it suggests that there is a psychosocial implication of that label in the mind of the older adult, or that there is a stigma associated with that attribute.

Similar to the influence of stigma on recruitment and perceived applicability, research that groups participants based on the number of prior falls can also be influenced by stigma. If older adults provide an inaccurate self-report when asked about fall history it could bias research that uses such information to classify participants. Research that utilizes self-report of previous fall history to group participants into ‘fallers’ and ‘nonfallers’ prior to analysis could arrive at false conclusions if stigma impacted the initial response of older adults. Shumway-Cook and colleagues (1997) aimed to predict the likelihood of falling in an older adult sample. They used self-report fall data to classify participants into ‘faller’ and ‘nonfaller’ groups. If the initial self-report provided by participants was negatively influenced by stigma, the assignment of individuals to groups and the subsequent study findings may have been impacted. The accurate reporting of health events has received research attention. As an example, after prospectively following older adult participants for 12 months, Cummings and colleagues (1988) tested the accuracy of fall history recall. They found 7% of participants recalled a fall when none occurred (false positive) and 13% of participants did not recall a fall when one took place (false negative). By way of another example, McAullife and colleagues (2007) found that the question format influenced accuracy of reporting sexual activity history. They concluded that the misreporting discrepancy could be higher than the

intended effect of potential health interventions. A commonality between these two studies is that both assume that participants are *actively* attempting to provide accurate recall and are *willing* to provide that answer to the researcher when asked. The sensitive nature of some topics may influence the comfort level or willingness of participants to disclose accurate responses. The appropriate grouping of research participants into study categories depends on the accuracy of the self-report provided by older adults. Research based on such methods for group assignment assumes such accuracy in the information provided. If a greater understanding and application of stigma was applied to falls research, perhaps we could increase our confidence in research findings.

Link and Phelan (2001) argued that the effect of negative labelling is the downward placement of a person in a status hierarchy. Individuals can conceal their status, avoid treatment, and distance themselves from the label rather than admit a stigmatized status (Link & Phelan, 2006; Keusch, Wilentz, & Kleinman, 2006). Stigma has consequences for well-being and quality of life, self-esteem, and participation in activities (van Brakel, 2006). It also can have emotional impacts for the stigmatized individual. Further, the fear of stigmatization can be a barrier to accessing appropriate health services (Weiss, Ramakrishna, & Somma, 2006). Kilian, Salmoni, Ward-Griffin, and Kloseck (2008) found that the negotiation of safety and well-being between older adults and their adult children was often thwarted by the unwillingness of the older adult to admit or discuss the risk of falling with their children. Of particular concern to older adults was perceived risk of falls to the loss of their independence. Perhaps, then, if an older adult perceives he or she will be devalued and associated with negative labels such as old and frail, the older person may be less likely to report the fall to family, friends, or

health care professionals, make behaviour changes, or enter into fall prevention programs. As such, fall-related stigma is a fruitful area for future inquiry.

Future Directions

After drawing together concepts from the existing theories of identity threat, modified labelling theory, and attribution theory, we conclude that falls and falls reporting can be considered a stigmatizing topic for older adults. The study of falls in older adulthood would, therefore, appear to benefit from the application of stigma concepts and associated theories. Approaching the subject of falls from this psychosocial perspective may allow us to better broach the topic of falls with older adults and create a more conducive environment for discussing falls and falls prevention.

A number of areas of study would be fruitful for future research on falls and the stigma associated with falls in older adulthood. Understanding the situations, and the factors associated with stigmatizing situations, where older adults are most likely to experience stigmatization related to falling or from discussing falls will allow strategies to be developed that may reduce or eliminate such occurrences. Further, gaining a greater understanding of the types of situations when older adults anticipate fall-related stigma will shed light on how falls are interpreted and responded to by the health system, family members, and society in general. Perceived stigma also may provide insights into the reporting of falls. Behaviour change, home modifications, social participation, continued independence, and quality of life may all be influenced if stigma is perceived by the older adult after a fall has occurred. If so, understanding the perception of stigma and the associated consequences would allow alternative approaches to discussing and reporting falls in older adulthood to be developed and implemented. It is vital that future

research on the stigma of falls reporting does not exclusively focus on actual experiences of stigma. That is, the contribution of stigma to the lives of older adults should not be limited to only situations where stigma has been directly experienced, but should also include perceived or anticipated stigma. Perceived or anticipated stigma can have the same negative consequences for older adults as can experienced stigmatization; all types of stigma hold the same potential to influence the willingness of older adults to report or discuss falls. Weiss and Ramakrishna (2006) have done so, and have defined stigma with the inclusion of anticipated or experienced adverse social judgments. The psychological impact of stigma, either through anticipated or perceived stigma, should not be ignored.

Future inquiry into potential methods for discussing falls with older adults can be informed by the application of the above stigma concepts. One potential avenue is to develop strategies to improve sensitivity and understanding during conversations about falls with older adults. Prefacing conversations about falls may put older adults more at ease and increase the willingness to discuss falls. Perhaps approaching the topic of falling in a sensitive, context-specific manner would improve the openness and accuracy with which older adults converse with family, health professionals, and research teams.

The perceived intention of research projects and falls initiatives may also have the potential to reduce the stigma associated with falling. If interventions are developed to maintain the health and wellbeing of older adults by preventing injury, perhaps it would be more beneficial to phrase such programming in a way that will not threaten the identity of older adults or denote a negative or undesired cause. The proposed or perceived intent of falls programming might influence an older adult's willingness to attend. For example, older adults may interpret different connotations associated with

attending a ‘health promotion’ program versus a ‘falls prevention’ program. Further, uptake of programming may be positively affected by avoiding labelling associated with the language of ‘falls’ altogether.

Finally, increasing the anonymity of respondents involved in studies on sensitive topics is another possible route to ensuring that the stigma associated with health events has minimal impact on research findings. Data collected in a manner that decreases the label or increases the anonymity afforded to participants can improve the reporting of stigmatizing events. For example, reporting methods that avoid personal identification may minimize the potential effect of labelling and should improve the accuracy of the categorization of fallers and nonfallers. Greater comfort with or confidence in the data collection method may increase participants’ willingness to report such topics (Reddy et al., 2006), therefore the importance of anonymity in data collection of sensitive health topics should not be underestimated. If we reduce the stigma associated with reporting sensitive information, we have the potential to reduce the error associated with data collection. Future research has the potential to uncover a wealth of information to improve our understanding of fall-related stigma experienced by older adults. As such, it can have considerable positive impact on falls research and, therefore, the lives of older people.

Conclusion

The goal of this paper was to demonstrate the relevance of the stigma literature and concepts to the study of falls in older adulthood. We aimed to briefly introduce the concept of stigma to falls researchers, provide theoretical support for looking at the topic of falls through a stigma lens, and outline the research implications and future directions

for adopting a stigma approach to the study of falls. Learning more about the situations in which older adults feel stigmatized may then allow research to better mitigate stigma in those situations and may improve the accuracy of reporting falls and subsequent entrance into fall prevention programs.

By approaching falls as a stigmatizing topic, we can gain a better understanding of the barriers to reporting and discussing falls in older adulthood and, thus, research areas that require future attention. With significant demographic changes on the horizon, strategies to maintain the health and independence of older adults will be of the utmost importance. Recognizing the influence of stigma on the willingness to report and discuss falls will be of vital concern for effectively studying falls and encouraging entry into falls prevention initiatives and promoting behaviour change. Thus, the application of a stigma approach to the study and discussion of falls in older adulthood has the potential to positively impact the lives of older adults.

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Chapter 3: Experiments 1 and 2 – What’s in a name? The influence of the ‘fall prevention’ label on older adults’ program choice and reported likelihood of participation in hypothetical exercise classes

Introduction

Previous research has suggested that the topic of falls is a subjective experience (Kingston, 2000) capable of being interpreted with different meanings based on the context and the individual and further, has the potential to be an emotive topic for older adults (Ballinger & Payne, 2002). One potential contributor to the emotions surrounding falls during older adulthood is the threat that a fall presents to the autonomy of an older adult. After interviewing 103 community-dwelling older adults, Mack, Salmoni, Viverais-Dressler, Porter, and Garg (1997) found that almost all respondents reported that remaining in their own home was important to them, highlighting the value older adults place on independence. Thus, it is psychologically difficult for people to disclose information that they believe will threaten their autonomy (Dugan & Bonds, 2002/2003). Disability and decline are often actively hidden by older adults in an attempt to protect their independence (Dobbs et al., 2008). Experiencing a fall has been found to have a strong effect on one’s functional decline (Tinetti & Williams, 1998) and as age increases the probability of regaining lost independence decreases (Martel, Belanger, & Berthelot, 2002). Older adults appear to relate the topic of falling to concepts of frailty, dependency, and being viewed as ‘old’ (Ballinger & Payne, 2002; Minichiello, Browne,

& Kendig, 2000). Yardley and Nyman (2007) reported that older adults may be unwilling to engage in activities that are perceived as necessary only for the very old and frail, as they do not want to be viewed as holding membership in that same group. This avoidance may result in a lack of disclosure when a fall occurs or the denial of appropriate or necessary health interventions (i.e., fall prevention programming).

Prior studies have found that fall prevention messaging is not always received by the intended audience in its entirety. Some fall prevention advice is rejected by older adults as being unsuitable due to personal circumstances or preferences (Yardley, Donovan-Hall, Francis, & Todd, 2006) and doubts about the appropriateness of the activities can influence intentions to take part (Yardley, Donovan-Hall, Francis, & Todd, 2007). Admitting that falls prevention advice might be relevant was stated by some older adults to be a humiliating prospect, as they did not view themselves as being in a situation where such information was needed (Yardley et al., 2006). Kreuter, Strecher, and Glassman (1999) suggested that educational material needs to be personally relevant and persuasive to result in attentiveness to the message. Older adults may not view themselves as being susceptible to falling and can underestimate the personal consequences of a fall (Braun, 1998), which could immediately decrease the perceived relevance of prevention messages. In evaluating the impact of tailored fall prevention information, Yardley and Nyman (2007) found that older adults had greater intentions to take part in strength and balance training when the information provided was perceived as being more personally relevant.

A limitation of previous research on fall-related behaviours is the lack of a theoretical framework to ground conceptualization and predictions. In an attempt to

better understand why older adults are resistant to disclosing falls, actively seeking behaviour change(s) to prevent future falls, or enrolling in fall prevention programs, Hanson, Salmoni, and Doyle (2009) reviewed existing research evidence and theories including identity threat, attribution theory and modified labelling theory. In brief, they argued that older adults are not likely to report a fall that they attribute to a cause that will potentially threaten their current identity and negatively label them in the eyes of others. Attribution theory suggests that individuals interpret behaviours, and their reaction to the behaviour, in terms of the cause (Kelley & Michela, 1980). The inference surrounding the cause of a fall in older adulthood can influence the level of importance assigned to the fall event. If a fall can be dismissed as a random event based on the attribution of its cause then it holds less meaning for the older adult (Kingston, 2000). Ballinger and Payne (2000) reported that older adults represented themselves in ways designed to disprove suggestions they were potentially frail or responsible for their fall. Ascribing the cause of a fall to a mechanism such as rushing, lack of attention, being an accident, or due to particular circumstance could be ways in which older adults attribute falls to being a result of the least threatening cause. Weinberg and Strain (1995) reported that causal attributions may influence behaviours surrounding fall prevention efforts. If older adults believe the cause of a fall to be due to external controls such as fate or powerful others (Weinberg & Strain, 1995), entry into fall prevention activities will likely not be viewed as an effective strategy to prevent future falls.

Falling also may pose a threat to an older adult's social identity. Kelly and Field (1996) stated that the self is a cognitive construct and identity is a public and shared aspect of individuals. It is, therefore, possible that fall prevention strategies run counter

to an individual's sense of self. Yardley, Donovan-Hall, Francis, and Todd (2006) found that older adults viewed fall prevention advice as useful for other people but defined themselves as non-fallers and therefore inappropriate candidates for such information. Some older adults were concerned with the social consequences that falling would have on their self-image and self-confidence. Dobbs and colleagues (2008) argued that negative evaluations associated with aging can become central to personal identity for older adults, hence, falls and preventive programs may be seen to threaten one's self-identity. A reluctance to be viewed as old, frail, or disabled could negatively influence older adults' willingness to participate in fall prevention activities or groups (Minichiello, Browne, & Kendig, 2000; Yardley, Bishop et al., 2006) if such participation were to run counter to their self-identity. The threat to self-identity could be further exacerbated if negatively perceived labels such as declining independence or personal autonomy were also attached to the older adult as a result of a fall or participation in preventive programming.

Labels are used in the socialization process to determine group membership. In relation to mental illness, Link and colleagues (1989) argued that when individuals are labelled, society's conceptions regarding mental disorders become relevant to the self. Hughes and coworkers (2008) stated that older adults actively dissociate themselves from the label of being old. Previous research on falls has found that older adults minimize their susceptibility to risk factors (Braun, 1998) and their personal risk of falling (Kilian, Salmoni, Ward-Griffin, & Kloseck, 2008). Older adults resist being associated with concepts such as being vulnerable and frail (Ballinger & Payne, 2000; 2002) and perhaps

avoid the label of falls and fall prevention to avoid the associated connotations such labels convey.

From the application of these theories and previous research findings, Hanson and colleagues (2009) concluded that falls may be considered a stigmatizing event for older adults. As described by Goffman (1963), stigma is the relationship between an attribute and its characteristic. Since Goffman's pivotal work describing stigma, many authors have adapted the concept for study in other health areas, such as HIV/AIDS (Berger, Estwing Ferrans, & Lashley, 2001), disability (Susman, 1994), and mental health (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001). In older adulthood, individuals can take deliberate actions to avoid being seen as 'old' (Ward, 1977), as it can be viewed as an excluded and devalued identity (Calasanti, 2005; Dobbs et al., 2008). One consequence of being associated with negative labels or characteristics is an immediate status loss (Link & Phelan, 2001). Older adults may try to circumvent the application of a label by denying the personal appropriateness of such a label (Ward, 1977) or by representing themselves in a way that contradicts their possession of the labelled characteristic (Ballinger & Payne, 2000). As a result, falls may result in stigma for older adults due to the associated negative connotations that are often ascribed to someone who has fallen, such as being considered old, frail, and in a state of increasing dependency with all the inherent social limitations and risks.

If older adults have been or anticipate being devalued as a result of a fall, it is likely that they will take future actions to prevent such potential devaluation. We know that older adults prefer program titles not related to 'falls' (Hughes et al., 2008), but it is not known if negatively perceived program titles truly deter older adults from active

involvement or whether such findings are simply preferences of wording. Does the ‘fall’ label result in a stigmatized response and subsequent decision-making regarding program participation?

This paper presents the results of two experiments that addressed whether the label of ‘fall prevention’ used in promotion of an exercise class impacted the subsequent responses of older community-dwelling adults. For both experiments, it was hypothesised that: 1) the reported likelihood of participation would be lower in a label inducing class; 2) those of younger age would report a lower likelihood of participation in a label inducing class; and 3) males would report a lower likelihood of participation in a label inducing class, as previous research has suggested potential behavioural differences for men and women and by age (Campbell et al., 1990; Horton, 2007; Minichiello, Browne, & Kendig, 2000).

Experiment 1 assessed whether older adults reported different likelihood of participation scores after randomly receiving one of two vignettes describing a hypothetical exercise class; one vignette employed the non-labelled “exercise class for older adults” (exercise class) title while the other vignette employed the labelled “fall prevention exercise class for older adults” (fall prevention) title. Experiment 2 built on the findings from Experiment 1 by requiring the older adult participants to make a two-alternative, forced choice response between the hypothetical exercise program options. Both studies made use of an embedded experimental mixed methods research design (Creswell & Plano Clark, 2007).

Experiment 1

Methods

Participants

The influence of program labels on older adults' reported likelihood of participation was tested using a 2 (vignette version) x 3 (age group) x 2 (sex) independent groups factorial design. The inclusion criteria required participants to be community-dwelling older adults, 60 years of age or older. The sample was stratified to provide approximately equal representation from three age groups (60-69 years, 70-79 years, and 80 years and over) and both sexes. The age category divisions were selected for two reasons. First, inclusion of individuals as young as 60 years, compared to the common convention of 65 years, aimed to capture the opinions of individuals as they begin to transition into older adulthood. Second, the age divisions created by starting at age 60 meant that the oldest old age category would begin at 80 years, which was thought to improve the feasibility issues for recruiting men in the oldest old age category. For adequate statistical power a sample size of 126 individuals was determined to be necessary but was rounded to 132 to allow equal participants in each of the stratified cells. Consecutive participants were randomly assigned to a vignette version until all age and sex cells were filled. The study was approved by the Research Ethics Board at The University of Western Ontario.

Instruments

Development of the two vignette versions required careful wording to ensure comparison across the two experimental groups. One vignette was given a labelled title (fall prevention) whereas the other was given a generic, non-labelled title (exercise class). The only difference between the two versions of the vignettes was the title and

subsequent goal of the class. A multimodal exercise description was selected as such programs have been found to reduce the risk of both non-injurious and injurious falls (Choszko-Zajko et al., 2009).

A questionnaire (Appendix 3) was developed to assess participants' attitudes and opinions regarding the exercise class described. Questions in Part 1 utilized visual analogue scales (VAS) 10 centimetres in length. Questions were scored by measuring the distance of the participants' response mark from the left-hand anchor (Portney & Watkins, 2000), resulting in potential responses ranging from zero to 100mm. Where required, the scales were reverse scored so that higher scores consistently indicated more positive responses. The main question of interest was the reported likelihood of participation (from 0 to 100%) in the program given the vignette version presented, phrased as, "If there were no barriers to your participation (such as issues with transportation, scheduling or cost), what is the likelihood that you would take part in this program?" Subsequent questions explored constructs related to stigma: self identity, program benefit and perceived suitability, resulting affect associated with the program, subjective norms, and perceptions regarding the causal attribution of falls. The final survey section included items that allowed for the generation of a demographic profile of participants. A definition of a fall, modified from the definition suggested by Gibson, Andres, Isaacs, Radebaugh, and Worm-Petersen (1987), was provided to respondents prior to the section on perceptions of falls and fall prevention programming. The provided definition aimed to reduce older adults' interpretation of what could be included, as previous research has reported that older adults can interpret the word falls in a variety of different ways when a definition is not provided (Zecevic, Salmoni,

Speechley, & Vandervoort, 2006). Prior to data collection, the vignette and questionnaire underwent extensive pilot testing with older adults, graduate students, and content experts in the field.

Procedure

Participants were recruited for participation through a local commercial shopping centre and a recreational group (a more complete description of the recruitment method can be found in Appendix 9). After agreeing to take part, participants' responses to the questionnaire were collected using a 'questerview' strategy (Adamson, Goberman-Hill, Woolhead, & Donovan, 2004). This procedure requires participants to think-out-loud while answering the survey questions permitting insights into the thought processes used as participants think through their responses.

After reading the vignette, participants were asked to begin the questionnaire by rating the likelihood of their participation in the program described. Participants completed the questionnaire at their own pace, providing think-out-loud commentary of their thought process as they went.

Data Analysis

Prior to data analysis, the data entry process was verified. Data analysis was completed using SPSS Version 16.0 [SPSS Inc., Chicago, IL]. The main dependent variable was the reported likelihood of participation score, which was analyzed by a three-way analysis of variance (ANOVA).

Results

In total, 143 older adults participated in Experiment 1. The complete questerview protocol, including both the pen-and-paper survey and the think-out-loud audio

component, was attained for 87 participants. The remaining 56 participants completed the pen-and-paper survey but lacked the audio component for logistic reasons, such as not completing the survey in a one-on-one setting or declining audio recording. Where available, field notes collected during data collection and any notations provided by the participants on their survey sheets were documented for inclusion with the audio data.

Demographic characteristics of the participant sample can be found in Table 1. Participants ranged in age from 60 years to 95 years ($M = 75.2$ years, $SD = 8.8$) and took between 6 and 48 minutes to complete the questerview process ($M = 15$ minutes, $SD = 6:23$). Slightly more males took part (53.8%) than females due to an unintended over-recruitment. Overall, the participants were generally well-educated and in self-reported good health. Some respondents (26.6%) reported experiencing at least one fall in the previous 12 months and 54.0% of participants reported knowing a friend or neighbour who had recently experienced a fall. Overall scores for each question can be found in Appendix 4.

Table 1
Sample Description for Experiment 1 and Experiment 2^a

Characteristic	<u>Experiment 1^b</u>	<u>Experiment 2</u>
	Total (<i>N</i> = 143)	Total (<i>N</i> = 118)
Age	75.2 ±8.8	74.8 ±8.4
Male sex – no. (%)	77 (53.8)	52 (44.1)
Married – no. (%)	64 (45.1)	73 (61.9)
Living alone – no. (%)	79 (55.2)	44 (37.3)
Education ^c	5.3 ±2.2	5.3 ±2.3
Perceived income	4.3 ±1.3	4.2 ±1.4
Self-rated health	3.5 ±.9	3.7 ±.9
Daily prescription medications	3.1 ±2.7	2.7 ±2.5
Experienced previous fall(s) (past 12 mo.) – no. (%)	38 (26.6)	26 (22.0)

Notes: ^a Plus-minus values are means ±SD.

^b Experiment 1: Survey Version A = non-labelled, exercise class; Survey Version B = labelled, fall prevention class. Experiment 2: Survey Version A and B differ in counterbalancing of vignette version order.

^c Education was measured on a scale that categorized 9 levels of the highest level of education attained. Category 5 was “completed trade/technical school or college diploma.” Category 6 was “some university.”

Likelihood of Participation

A two (vignette version) by three (age group) by two (sex) analysis of variance (ANOVA) was conducted. A significant Levene *F*-ratio was found ($F(11, 131) = 2.6, p < .01$). However, comparable findings were obtained when the analysis was repeated with equal cell sizes, which suggests that this violation had not compromised the interpretation of the results.

The ANOVA revealed no significant main effect for vignette version or sex. There was a significant main effect for age group, $F(2, 131) = 3.3, p < .05$. Post hoc comparisons revealed that participants 70-79 years of age reported a significantly higher likelihood of participation ($M = 78.2, SD = 22.0$) than did participants who were 80 years of age and over ($M = 62.5, SD = 34.1$). The two-way and three-way interactions were

non-significant. The average likelihood of participation scores for male and female participants in each age group and vignette version can be found in Table 2.

Table 2
Experiment 1 Marginal Means for Reported Likelihood of Participation Scores

	Age Group	Non-Labelled Vignette	Labelled Vignette	Row Mean
Men:	60-69 years	64.08	58.40	61.50
	70-79 years	86.93	73.07	80.00
	80 years and over	57.77	68.92	63.12
	Mean	70.60	67.76	69.23
Women:	60-69 years	76.09	69.77	72.67
	70-79 years	66.22	83.18	75.55
	80 years and over	68.08	54.00	61.68
	Mean	70.31	69.47	69.88
Total:	60-69 years	69.83	64.83	67.33
	70-79 years	79.17	77.35	78.22
	80 years and over	62.72	62.14	62.45
	Mean	70.47	68.58	69.53

A test-retest reliability assessment was completed (Portney & Watkins, 2000) with 24 participants (4 within each age group and gender stratum) completing the same vignette version one to two days after their original participation. Analysis of reliability was determined through point-by-point agreement on the 21 VAS questions. A distance of ± 15 mm was selected as the cut-off point for determining agreement, as it corresponded to the approximate distance between anchors on a comparably formatted 7-point Likert-type scale. Over 70% of participants scored within ± 15 mm on 15 of 21 VAS survey questions (71.4%). Full test-retest agreement values for the visual analogue scale questions from first to second questionnaire administrations can be found in Table 3.

Table 3
Item Agreement for Experiment 1 Visual Analogue Scale Survey Questions ($n = 24$)

Question	± 5 mm Agreement (%)	$\pm 6-10$ mm Agreement (%)	$\pm 11-15$ mm Agreement (%)	± 15 mm Agreement (%)	$> \pm 15$ mm Agreement (%)
Q1	54.2	12.5	16.7	83.4	16.6
Q2	58.3	20.8	8.3	87.4	12.6
Q3	45.8	12.5	8.3	66.9	33.1
Q4	37.5	12.5	20.8	70.8	29.2
Q5	62.5	12.5	4.2	79.2	20.8
Q6a	30.4	17.4	17.4	65.2	34.8
Q6b	65.2	13.0	4.3	82.5	17.5
Q7a	47.8	13.0	21.7	82.5	17.5
Q7b	30.4	13.0	13.0	56.4	43.6
Q7c	47.8	30.4	4.3	82.5	17.5
Q8a	17.4	17.4	13.0	47.8	52.2
Q8b	40.9	9.1	18.2	68.2	31.8
Q8c	28.6	23.8	19.0	71.4	28.6
Q8d	31.8	13.6	18.2	63.6	36.4
Q8e	60.9	26.1	13.0	100.0	0.0
Q9	60.9	13.0	8.7	82.6	17.4
Q10	69.6	13.0	8.7	91.3	8.7
Q13a	43.5	21.7	8.7	73.9	26.1
Q13b	52.2	17.4	4.3	73.9	26.1
Q13c	47.8	21.7	8.7	78.2	21.8
Q13d	39.1	17.4	21.7	78.2	21.8

Questerview Analysis

In order to gain a better understanding of the thought process employed by participants, and particularly because the vignette hypothesis was not supported, a content analysis was completed for the first survey question regarding reported likelihood of participation. Each participant who provided questerview content represented a unique recording/coding unit and unit of enumeration (Krippendorff, 2004) so as to ensure the primary thought process was determined and included in the analysis.

Analysis began with open coding in order to better understand how participants approached the first survey question. Open coding then led to a multilevel coding frame (Berg, 2009) that indicated the general thought process used by participants. General distinctions were noted and organized into categories. Both manifest and latent content

(Berg, 2009) were included as constructs where appropriate. As coding continued, the coding frame evolved into a variation of a decision scheme (Krippendorff, 2004), containing main branches corresponding to various differences in the thought process employed by participants. The creation and refinement of coding categories continued until all coding units were represented. The final coding scheme resulted in 20 terminal categories. The coding scheme and enumeration of those categories can be found in Figure 1.

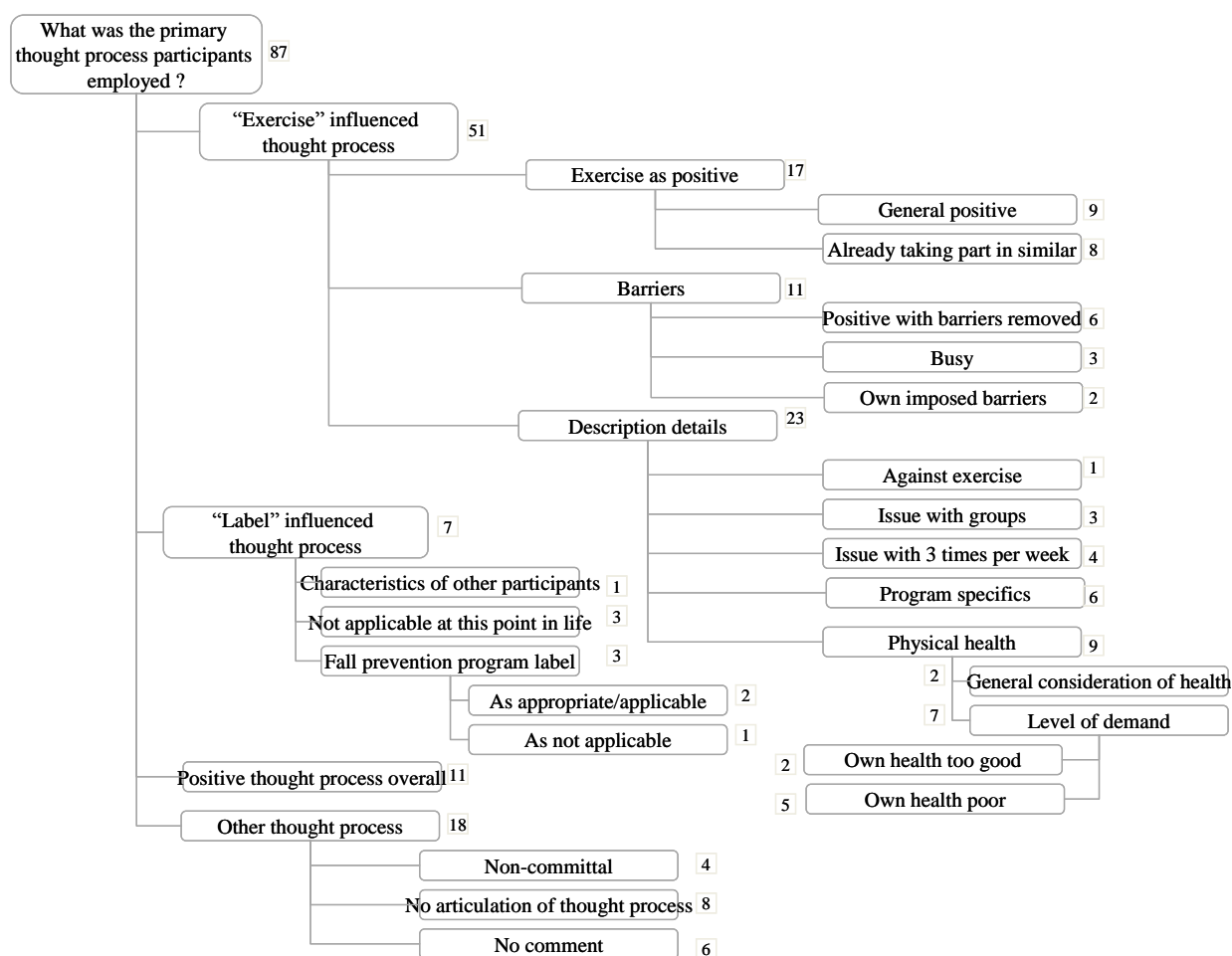


Figure 1. Experiment 1 coding scheme and enumeration for the thought process employed by participants to answer their reported likelihood of participation.

The findings revealed that participants demonstrated one of four thought process orientations in approaching their reported likelihood of participation (see main branches, Figure 1): an exercise-influenced thought process, a label-influenced thought process, a positive response thought process, or some other thought process.

Sub-analysis

After completing the content analysis of the primary thought process that participants employed in reporting their likelihood of participation, it became evident that many did not respond to the vignette, and subsequently form the basis of their decision to participate, in the manner hypothesized. In order to identify whether this outcome was confirmation of the null hypothesis or the result of an insufficient treatment effect, a sub-analysis of the data was conducted to attempt to better understand the process.

Looking specifically at participants in the label-influenced and exercise-influenced thought process coding scheme branches, participants randomized to the labelled vignette version were identified. Seven participants of the label-influenced thought process and 22 participants in the exercise-influenced thought process were found to have received the labelled vignette version. Subsequently, the reported likelihood of participation scores for these two groups was determined and a substantial difference in reported likelihood scores was found. Participants employing an exercise-influenced thought process had an average score of 73.9 while those employing a label-influenced thought process reported an average score of 51.6. While group size is small and unequal, the difference in average scores suggests that participants who noted the fall prevention label within the vignette did have a lower likelihood of participation scores, consistent with the hypothesis expectation.

Additional Survey Questions

Subjective norms were collapsed across both vignette versions and assessed for three groups of significant others, including family, friends or neighbours, and doctors. Participants reported very little interest in the opinion of important others regarding their participation in the program. While scores were generally high for family ($M = 83.7$, $SD = 18.8$), friends or neighbours ($M = 75.1$, $SD = 22.4$), and doctors ($M = 82.0$, $SD = 20.2$), the audio account uncovered very little weight put into the evaluation of these people's opinions for the older adults' decision-making. For example, participants stated,

“I don't particularly care what my family thinks.” (1-051)

“I don't give a damn about what they [friends or neighbours] think. Why should they care and why should I worry about whether they care?” (1-019)

“I have children but my life's my own, it sounds funny, but I do what I like.”
(1-021)

Perceptions regarding the most appropriate timing for consideration of joining fall prevention programming were assessed with two questions not associated with the randomization to the survey vignette versions. When asked about the most appropriate age at which to join a fall prevention program, participants reported a wide range of ages spanning from 20 to 80 years ($M = 64$ years, $SD = 9.0$). When asked about the number of falls someone would need to experience over the course of a year before they should consider joining a fall prevention program, participants reported zero to 24 falls ($M = 1.8$, $SD = 2.5$) could be experienced before joining fall prevention programming. To determine any potential response differences between age groups and sexes, a two-way analysis of variance was conducted for responses to both the most appropriate age and the

number of falls to experience prior to entering fall prevention programming. No significant main effects or interactions were found.

Four scenarios were presented to participants to gather perceptions regarding the appropriateness of entry into fall prevention programming for each circumstance. To determine any potential response differences between age groups and sexes, a two-factor split-plot analysis of variance was conducted on the four attributional fall descriptions. The assumption of equality of the covariance matrices was not violated, Box's $M(50, 27070) = 60.5, ns$. Levene's tests were also non-significant, meaning the assumption of equality of variances had been met. The assumption of circularity of the variance/covariance matrices was tested using Mauchley's test of sphericity and was found to be significant, Mauchley's $W = .47, \chi^2(5) = 97.8, p < .001$, indicating that an adjustment to the degrees of freedom using Greenhouse-Geisser epsilon multipliers were necessary. A main effect of sex was found, $F(1, 130) = 5.5, p < .05$, with males reporting lower attribution scores ($M = 64.5, SE = 2.2$) than females ($M = 71.9, SE = 2.3$). A main effect of attribution was also found, $F(2, 255) = 22.4, p < .01$, based on the Greenhouse-Geisser adjustment to the degrees of freedom to protect against an inflated Type 1 error rate (Keppel & Wickens, 2004). No interactions were significant. Figure 2 demonstrates the mean attribution scores for both men and women. The 4 scores were then re-coded to find the average score for both attributions to broadly defined internal causes of the described falls (Parkinson's disease and frailty) and external causes of the described falls (environmental hazard and rushing). A paired t -test indicated that the two attribution types differed significantly, $t(135) = 5.7, p < .001$, with attribution of falls to internal

causes viewed by participants as more appropriate for fall prevention programming ($M = 76.9$, $SD = 21.0$) than attribution of cause to external factors ($M = 59.1$, $SD = 29.8$).

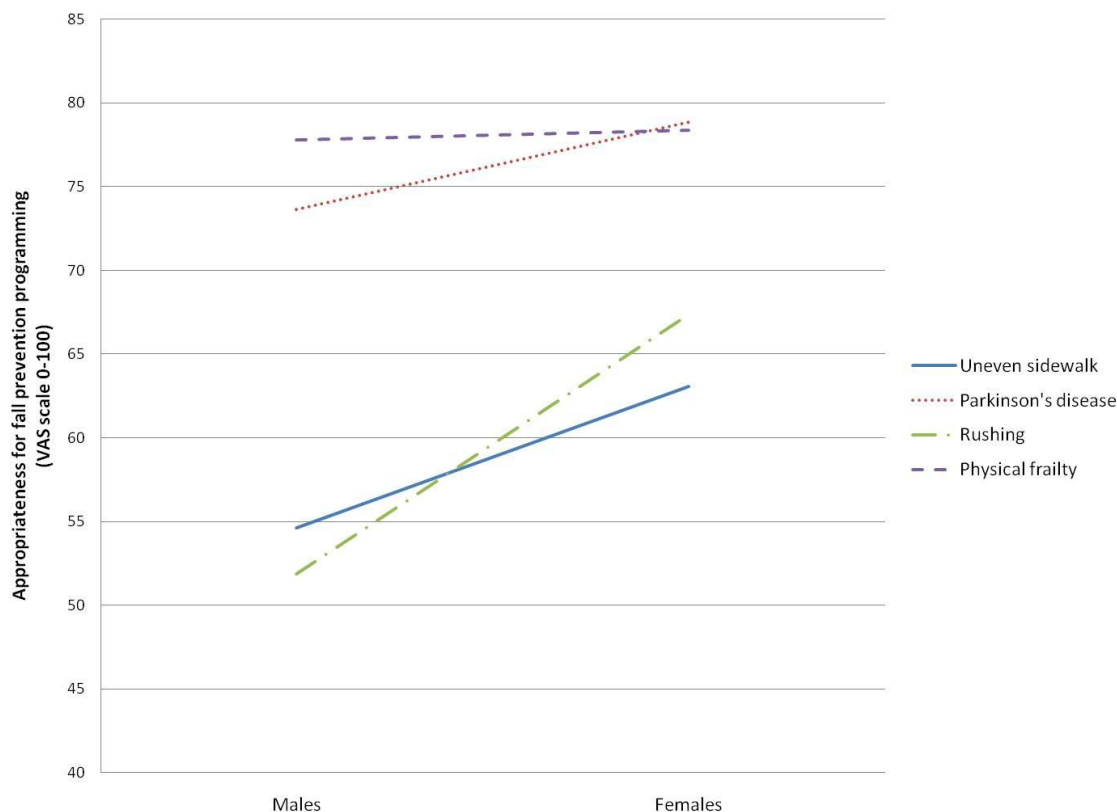


Figure 2. Experiment 1 male and female response scores for the appropriateness of fall prevention programming for four fall scenarios.

Experiment 1: Discussion

The findings of Experiment 1 provide support for the use of mixed-methods designs when investigating attitudes and self-report behaviours regarding health. The qualitative or quantitative findings alone do not show the entire picture. Taken together, these data indicate that while participants did not respond to the vignette descriptions in the hypothesized manner, the sub-analysis suggests that the direction of the hypothesis could potentially hold true. It seems that most participants were not focused on the program label while responding to the vignette. However, when looking specifically at

those who received the labelled, fall prevention vignette, the hypothesized effect was evident in those who identified the label in their thought process.

Experiment 1 may not have had the intended effect due to the design of how participants were exposed to the vignette version; two factors could be at play. First, as evidenced by the content analysis, many participants did not focus their attention on the portion of the vignette that contained the labelled title. Participants seemed to be far more drawn to the exercise components and the descriptions provided. This might suggest that older adults pay close attention to the types and descriptions of exercise components listed in exercise class advertisements and that those details have the potential to contain information to which participants often attended.

Second, it is possible that a comparative judgement is needed in order to evoke a more consistent stigmatizing response. Participants were only exposed to one of the two randomly assigned vignettes. Perhaps in order for the effect of stigmatization to occur there needs to be a norm or standard against which older adults can base their response. If a single response option is available, as per the design used in Experiment 1, there is no norm available for comparison and judgement formation. Perhaps fall-related stigma only occurs when a comparative judgement against a norm is available; however, confirmation of this suggestion is required.

Experiment 2

This study was conducted to expand upon the design used in Experiment 1 and to re-test the hypothesis that the fall prevention label used in class descriptions would influence subsequent thought processes. Participants in Experiment 2 were exposed to

two class descriptions before being asked to make a forced choice decision about program desirability.

Methods

Participants

Participants from three age groups (60-69 years, 70-79 years, and 80 years and over) and of both sexes were recruited. Sample size calculations indicated that 107 participants were required (Portney & Watkins, 2000), but the target sample size was rounded to 108 for equal distribution across the strata. Study approval was received from the Research Ethics Board at The University of Western Ontario.

Instruments

The layout of the exercise program information in Experiment 2 was changed from the single program description provided in Experiment 1. To accomplish this change, Experiment 2 included a mock-poster layout with both class descriptions presented in a side-by-side fashion. For both the labelled and the non-labelled program descriptions, the mock-poster included the program title, goal, and exercise components. The only difference between the two descriptions was the title, or labelling, provided and the subsequent goals.

After reading both program descriptions, participants were asked to complete the survey questions that followed. The first question asked participants which of the two classes they would most prefer to take part in. Participants were then directed to answer follow-up questions targeting their attitudes and opinions regarding the preferred class. At a designated and clearly identified switch point, participants were asked to refer back

to the other class that had not been preferred. Participants were then asked the same follow-up questions but were directed to respond according to their attitudes and options about this non-preferred class.

In an effort to improve upon the reliability from Experiment 1, the question scaling was changed from VAS to use of 7-point Likert-type response scales. The questions were also rephrased where necessary to more clearly target the intended construct under evaluation. Finally, the order of the two class descriptions, from left to right, was counterbalanced to reduce the potential for order effects to influence the results. Prior to the start of data collection, the survey was thoroughly pilot tested to ensure clarity of questions and instructions. The question wording for each item can be found in Appendix 5.

Procedure

Participants were requested to read the vignettes and work at their own pace through the questionnaire while providing a think-out-loud verbal account of their thought process. This ‘questerview’ protocol (Adamson, Gooberman-Hill, Woolhead, & Donovan, 2004) provided both quantitative survey data and qualitative audio data.

Data Analyses

Data analyses included chi-square analyses, split plot analysis of variance, and multiple and logistic regressions. In preparation for multiple regression analyses, the data for questions regarding personal suitability and willingness to tell others of joining the class were re-coded to normalize the distribution, with the re-coded variable used in subsequent regression analyses (Osborne & Waters, 2002). Multicollinearity between

independent variables was assessed using a correlation cut-off value of 0.60 (Eastman, 1984) and sufficient participants for the number of variables entered was ensured (Katz, 2006).

Results

In total, 118 older adults provided data for Experiment 2. Eighty participants completed the survey with a researcher present, of whom 66 completed the entire questerview protocol. For participants who completed only the pen-and-paper survey, any field notes or survey notations were included with the qualitative analyses as applicable. Participants ranged in age from 60 to 95 years ($M = 74.8$, $SD = 8.4$) and took between 9 and 50 minutes to complete the questerview process ($M = 24:42$, $SD = 8:45$). Over half of the participants were female (55.9%) due to an unintended over-recruitment in the female strata; the majority of participants (61.9%) were married. A breakdown of participant characteristics can be found in Table 1. Some participants (22.0%) reported experiencing at least one fall in the previous 12 months and 53.0% of participants reported knowing a friend or neighbour who had recently experienced a fall. Overall scores for each question included in the survey can be found in Appendix 6.

Test-retest reliability was assessed for a subset of the sample ($n = 15$) including both men and women in the different age groups. Exact matches and responses that were within ± 1 point were assessed as indicating agreement from the first to the second questionnaire administrations. As demonstrated in Table 4, over 70% of participants demonstrated test-retest reliability on 51 out of 59 survey questions (86.4%). Questions with low reliability were not used in the subsequent analyses.

Table 4
Item Agreement for Experiment 2 Test-Retest Reliability Survey Questions ($n = 15$)

Variable	Exact Agreement (n)	± 1 Point Agreement (n)	Percent Agreement (Exact and ± 1 point)
Q1	14	1	100.0%
Q3	7	5	80.0%
Q4	13	1	93.3%
Q5	11	2	86.7%
Q6	8	5	86.7%
Q7	10	4	93.3%
Q8a	11	3	93.3%
Q8b	10	0	66.7%
Q9	12	3	100.0%
Q10	8	1	60.0%
Q11a	11	3	93.3%
Q11b	10	4	93.3%
Q11c	10	3	86.7%
Q11d	11	2	86.7%
Q11e	14	0	93.3%
Q12	8	4	80.0%
Q13	7	4	73.3%
Q14	9	5	93.3%
Q15	7	5	80.0%
Q16	7	5	80.0%
Q17a	11	2	86.7%
Q17b	10	4	93.3%
Q18	8	6	93.3%
Q19	10	2	80.0%
Q20a	9	3	80.0%
Q20b	9	5	93.3%
Q20c	10	4	93.3%
Q20d	9	3	80.0%
Q20e	15	0	100.0%
Q21a	11	3	93.3%
Q21b	13	2	100.0%
Q21c	14	0	93.3%
Q21d	12	3	100.0%
Q22	9	4	86.7%
Q23a	13	1	93.3%
Q23b	11	2	86.7%
Q23c	12	0	80.0%
Q24a	9	2	73.3%
Q24b	6	2	53.3%
Q24c	10	1	73.3%
Q24d	10	3	86.7%
Q24e	11	2	86.7%
Q24f	10	2	80.0%
Q25a	14	1	100.0%
Q25b	6	8	93.3%
Q25c	6	6	80.0%
Q25d	6	5	73.3%
Q25e	7	4	73.3%
Q25f	4	5	60.0%
Q25g	7	2	60.0%

Q25h	6	4	66.7%
Q26a	5	5	66.7%
Q26b	2	8	66.7%
Q26c	4	7	73.3%
Q26d	6	7	86.7%
Q26e	6	7	86.7%
Q26f	5	8	86.7%
Q26g	5	6	73.3%
Q26h	4	8	80.0%

Program Choice

Nearly 80% (79.3%) of participants selected the exercise class as their preferred program choice. A chi-square goodness-of-fit test indicated that fewer people selected the labelled, fall prevention exercise class than expected by chance ($\chi^2 (1, N = 118) = 41.5, p < .001$), providing strong support for the first hypothesis. This preference was highly consistent across all three age groups and both sexes, not supporting the age and sex difference hypothesis predictions. Figure 3 shows the breakdown of participant choices. In order to determine whether current participation in organized exercise programs influenced participants' program choice preferences, chi-square analyses were conducted for both current regular physical activity (versus not) and organized exercise participation (versus not). Both chi-square analyses were non-significant ($\chi^2 (1, N = 118) = 1.4, ns$ and $\chi^2 (2, N = 118) = 5.5, ns$, respectively).

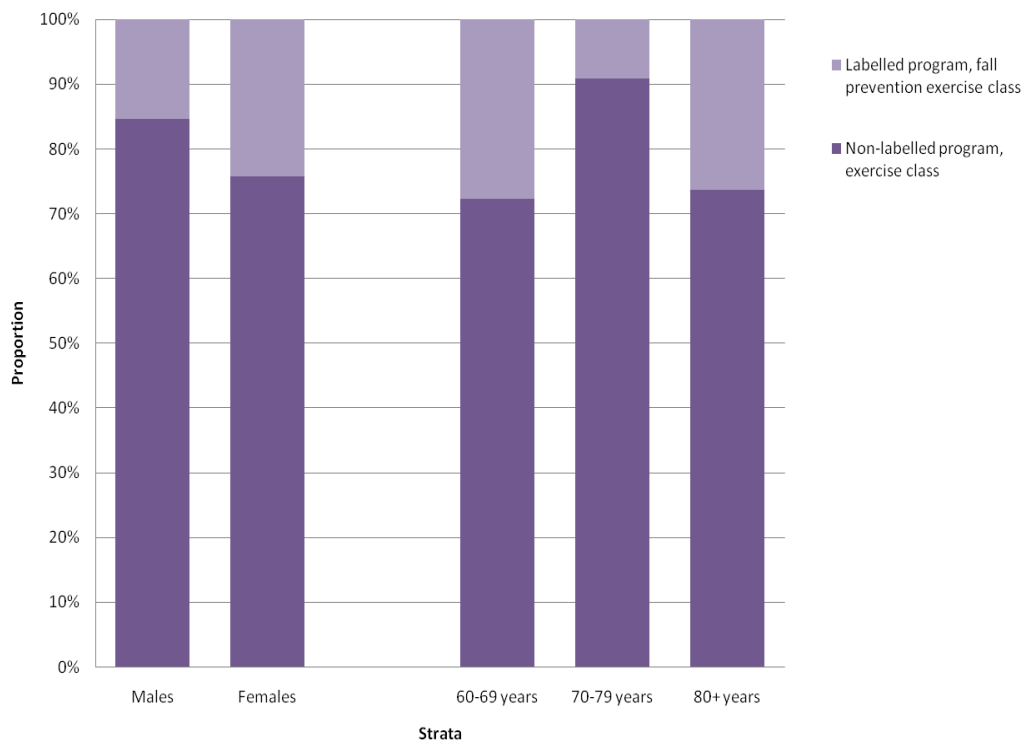


Figure 3. Experiment 2 participant age group and sex breakdown for preferred class option.

Likelihood of Participation Scores

Figure 4 shows the likelihood of participation scores for all participants for their preferred and non-preferred programs. A split plot analysis of variance was conducted to determine whether likelihood of participation scores (within-subjects measure) differed based on the program choice made (between-subjects measure). The assumption of equality of the variance/covariance matrices was non-significant, Box's $M = 8.0$, $F(3, 19660) = 2.6$, ns , indicating that the assumption had not been violated. Utilizing a univariate analysis approach, a main effect of likelihood of participation was identified ($F(1, 114) = 24.4$, $p < .001$), indicating that the mean scores for likelihood of participation between the preferred and non-preferred program options differed significantly. A significant interaction between program preference and likelihood of

participation scores was also found ($F(1, 114) = 10.3, p < .01$). Post hoc analysis indicated that participants whose preferred program choice was the exercise class reported significantly lower likelihood of participation scores for the non-preferred program option than did participants whose preferred program choice was fall prevention ($t(114) = -2.0, p < .05$). The average reported likelihood scores for participants' preferred and non-preferred program choices can be found in Table 5.

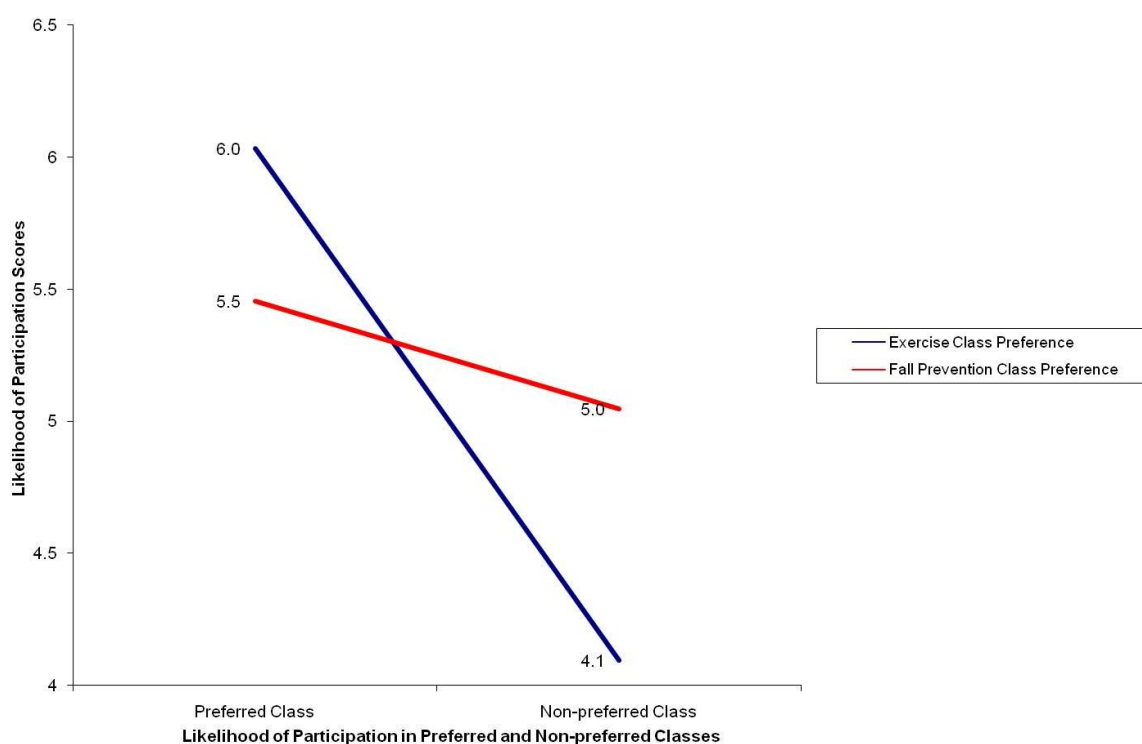


Figure 4. Experiment 2 likelihood of participation scores for the preferred and non-preferred class options.

Table 5
Experiment 2 Marginal Means for Preferred and Non-preferred Program Reported Likelihood of Participation Scores

Program Choice	Likelihood of Participation Scores		Total
	Preferred Program	Non-preferred Program	
Exercise class for older adults	6.0	4.1	5.1
Fall prevention exercise class for older adults	5.5	5.0	5.3
Total	5.7	4.6	5.2

Predicting Program Choice and Likelihood of Participation

Logistic regression analyses were used to determine whether program choice could be predicted by other survey responses (see Table 6). Predictors of interest were entered into a univariable analysis, with those meeting the threshold of $p < .10$ included in the multivariable logistic regression. Predictor variables were entered using the forward stepwise method with the removal criterion based on likelihood ratio. The final model (see Table 6) included 4 predictors that significantly influenced the odds of participants' selection of the fall prevention exercise class. The selection of the fall prevention class was negatively related to perceived personal suitability of the exercise class (OR = .27, $p = .001$) and positively related to perceived personal suitability of the fall prevention class (OR = 2.46, $p < .05$), willingness to tell others of joining the fall prevention class (OR = 7.87, $p < .01$), and self-rated risk of falling (OR = 4.59, $p < .05$). The Hosmer and Lemeshow goodness-of-fit test indicated the model fit the data well ($\chi^2(8) = 2.9, p = .94$). The observed and predicted frequencies for selection of the fall prevention exercise class found an 86.6% overall percentage correct.

Table 6
Experiment 2 Univariable and Multivariable Logistic Regression Analyses for Program Choice

Variable	Univariable		Multivariable ^b	
	OR ^a (95% CI)	<i>p</i> value	OR (95% CI)	<i>p</i> value
<i>'Exercise Class'</i>				
Perceived benefit	.68 (.41, 1.13)	.14	--	--
Within capabilities	.69 (.47, 1.01)	.05	--	--
Personal suitability	.60 (.42, .86)	.01	.27 (.12, .58)	.00
General suitability	.80 (.50, 1.27)	.34	--	--
Resulting affect	.88 (.62, 1.25)	.47	--	--
Willingness to tell others	.97 (.61, 1.56)	.91	--	--
<i>'Fall Prevention Exercise Class'</i>				
Perceived benefit	2.29 (1.26, 4.18)	.01	--	--
Within capabilities	.92 (.61, 1.37)	.67	--	--
Personal suitability	1.53 (1.09, 2.14)	.01	2.46 (1.23, 4.94)	.01
General suitability	1.33 (.85, 2.07)	.22	--	--
Resulting affect	1.35 (.94, 1.92)	.10	--	--
Willingness to tell others	4.15 (1.86, 9.23)	.00	7.87 (1.96, 31.55)	.00
<i>Demographic Section</i>				
Self-rated risk of falling	4.05 (1.80, 9.12)	.00	4.59 (1.41, 14.91)	.01
Self-rated balance	.59 (.36, .94)	.03	--	--
Age	1.01 (.95, 1.06)	.87	--	--
Fall history (past 12 mo.)	1.11 (.57, 2.17)	.75	--	--

Notes: ^aOR = odds ratio; 95% CI = 95% confidence intervals.

^bUnivariable threshold for entry in multivariable model was $p < .10$.

Blank cells indicate that the corresponding variable did not meet the entry criterion for the forward stepwise entry procedure of the multivariable model.

Hosmer and Lemeshow Goodness of Fit Test ($\chi^2(8) = 2.9, p = .94$). Classification accuracy = 86.6%

Stepwise multiple regression analyses were used to understand whether responses provided for other survey questions significantly predicted the reported likelihood of participation scores. In order to meet the assumption of normality (Osborne & Waters,

2002), re-coded variables were used where required. The results of the regression for likelihood of participation in the exercise class indicated that three predictors explained 48% of the variance ($R^2 = .48$, $F(3, 108) = 32.8$, $p < .001$). Perceived personal suitability ($\beta = .52$, $t(108) = 6.6$, $p < .001$), self-rated balance ($\beta = .20$, $t(108) = 2.7$, $p < .01$), and willingness to tell others ($\beta = .17$, $t(108) = 2.2$, $p < .05$) significantly predicted exercise class likelihood of participation scores. The regression for likelihood of participation in the fall prevention exercise class revealed three predictors that explained 61% of the variance ($R^2 = .61$, $F(3, 109) = 57.4$, $p < .001$). Perceived personal suitability significantly predicted fall prevention exercise class likelihood scores ($\beta = .54$, $t(109) = 7.6$, $p < .001$), as did willingness to tell others ($\beta = .24$, $t(109) = 3.3$, $p < .01$), and the resulting positive affect ($\beta = .16$, $t(109) = 2.3$, $p < .05$).

Questerview Analysis

As in Experiment 1, content analysis was used to understand participants' rationale for their program selection. Participants were asked why they selected their preferred program and why they did not select the other program available. In brief, participants who selected the exercise class reported that it was viewed as being more strenuous or more appropriate to their own physical ability level, or that they did not want to be associated with the types of people they imagined would be in the fall prevention class. Participants selected the fall prevention class because they identified with the label either as being applicable to their own lives due to circumstance or if they saw the negative effects of falls on those they knew.

In order to understand the potential mindset of participants as they selected their program preference, the dominant emotion characterizing the rationale provided was

assessed. Responses were coded as positive about the selected program, negative about the non-selected program, or neutral (Table 7). For those who selected the exercise class, 94 participants provided a positive response regarding the preferred program, 23 participants provided rationale that was negative about the non-preferred program (fall prevention), and 12 participants were coded as neutral/unsure/no answer. For those who selected the fall prevention class, 23 provided a rationale that was coded as positive regarding the preferred program, one participant provided a neutral response, and none of the participants provided negative rationale regarding the non-preferred program (exercise class).

The same coding strategy was then used to assess the dominant emotion regarding why participants *did not* select the other program option. When participants who selected the exercise class were asked why they had not selected the fall prevention class, 13 provided a rationale that was positive in support of the exercise class, 55 provided a rationale that was negative in response to the fall prevention program, and 26 participants were coded as neutral/unsure/no answer. When seeking to assess why the participants who selected the fall prevention class had not selected the exercise class, 9 provided a rationale that was positive in response to the fall prevention class, 5 participants were negative about the exercise class, and 10 were coded as neutral/unsure/no answer.

Looking across the rationales provided, participants could have demonstrated a stigmatized response rationale in one of two ways. Participants who selected the exercise class could express negative comments regarding the fall prevention program through either an aversion to it and therefore a justification for the program choice they did make ($n = 23$) or through rationalizing why they did not select it as their program option ($n =$

55). This trend did not characterize the rationales provided by those who selected the labelled fall prevention program.

Table 7
Experiment 2 Dominant Emotion Expressed by Participants in Response to Provided Program Choice Rationales

Program Choice	Dominant Emotion of Rationale (count)			Total
	Positive about the Preferred Program	Negative About the Non-preferred Program	Neutral/Don't Know/No Answer	
“Why did you select the program you did?”				
Exercise Class	59 (50.0%)	23 (19.5%)	12 (10.2%)	94
Fall Prevention Class	23 (19.5%)	0 (0.0%)	1 (0.8%)	24
“Why did you not select the other program option?”				
Not Fall Prevention (Exercise Class choice)	13 (11.0%)	55 (46.6%)	26 (22.0%)	94
Not Exercise Class (Fall Prevention choice)	9 (7.6%)	5 (4.2%)	10 (8.5%)	24

Additional Survey Questions

In order to better understand the lack of weight put into subjective norms by respondents in Experiment 1, Experiment 2 expanded on the impact of the opinions of others on respondents' subsequent interest in behaviour change. Participants provided little support for the influence of subjective norms on their health behaviours. For both the exercise class and the fall prevention exercise class, the same pattern of support was held for the opinions of important others in the lives of the participants. Participants reported the strongest agreement of program suitability would be held by their doctors, followed by family, friends, and finally neighbours. However, when asked whether the opinion of any of those groups of people would cause them to change their behaviour, participants overwhelmingly reported no. Eighty-eight and ninety percent of participants

reported that the opinion of important others would not cause them to change their reported behaviour regarding the exercise class or the fall prevention exercise class, respectively.

Participant comfort with others' knowledge of prior falls and their likelihood of disclosing those falls were assessed on a seven-point Likert-type scale and can be found in Figures 5 and 6, respectively. A general trend was found for likelihood of disclosure patterns when participants were asked to imagine personally experiencing two falls in the past month. Participants reported the greatest likelihood of disclosing falls during conversations with more privacy and to whom they were more intimately related to. As the relationship between the potential individual and the older adult became less intimate, participants reported decreasing levels of willingness to disclose the prior falls (Figure 5). When participants were asked how comfortable they would be with various people knowing about their prior falls, comfort scores decreased as the relationship between the older adult and the individual extended, with the exception of two groups of people. The pattern of widening social circle did not include health professionals or adult children (Figure 6). On average, participants reported highest levels of comfort with health professionals knowing about prior falls. The family dynamics between the older adult participants and their adult children were evident in how older adults spoke of their comfort with an adult child knowing of their prior falls. Participants expanded on their scores regarding their comfort with adult children knowing about their prior fall with comments such as,

“You want your children to think well of you. I think it is vanity, within common sense, I would say uncomfortable with a child [knowing about the falls].” (2-039)

“My family don’t live here so I have a little difficulty with that, they worry enough without knowing I’d fallen.”), and “It depends which family member, I have three step-kids and I would be more open with some than others. My daughter, if I was open with her would spend the next hour lecturing me on what I was doing wrong and how I should handle things. My older step-son is the same, he is very intelligent and he thinks he knows all the answers for your life. And the middle two, they would be more understanding. [Laughs] Oh, my daughter wouldn’t care but she would be sure she could look after the problem.” (2-067)

“My kids would be absolutely furious because they keep telling me not to be standing on ladders and changing bulbs and [laughs] but in the mean time I would probably tell them.” (2-068)

“Hmm, I don’t think I would be comfortable if they knew I fell, not necessarily. I’ve held things away from my kids and they find out later and say ‘Dad lied to us kids’. Depending on the child, I’m going to say here [response made].” (2-114)

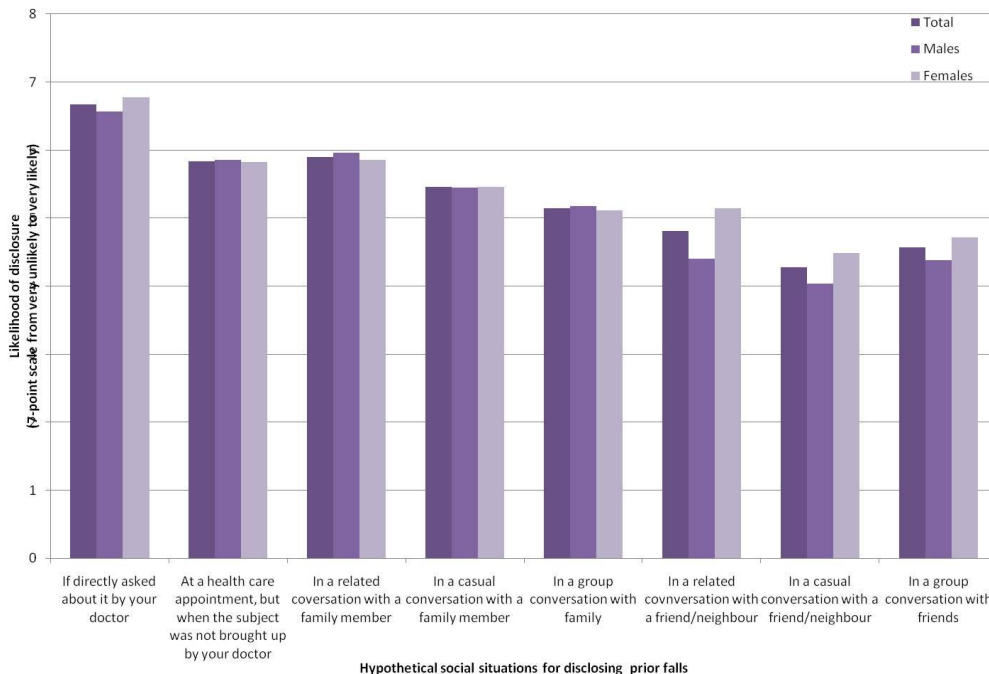


Figure 5. Experiment 2 responses for participants' likelihood of disclosing hypothetical falls experienced under various situations.

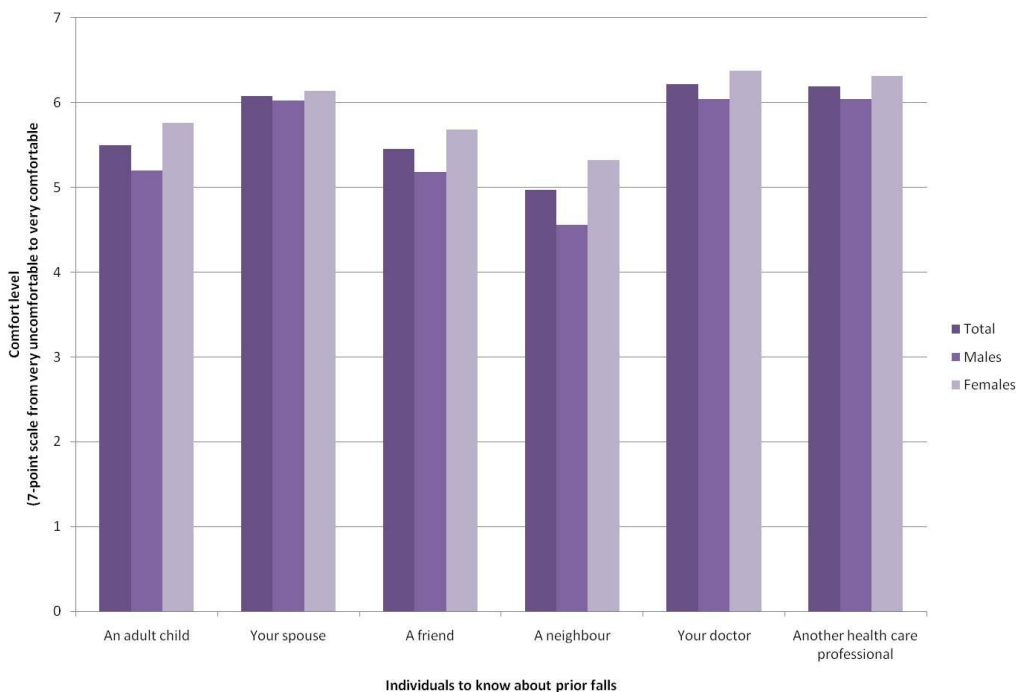


Figure 6. Experiment 2 participant responses regarding comfort level for various people knowing about hypothetical falls experienced.

Finally, one survey question directly addressed participants' self-categorization as a 'faller'. When participants were asked whether they would consider themselves a 'faller', the overwhelming majority of participants reported no (96.6%). Of those who reported a fall in the past 12 months, only one reported yes to being considered a 'faller'. The other three individuals who also identified as being a 'faller' did not experience a fall in the past 12 months. The 4 'fallers' self-reported fair to poor balance and moderate to high risk of falling.

Discussion

In support of Hypothesis 1 and as would be predicted by theoretical concepts related to stigma, participants reported an overwhelming preference toward the exercise class over the fall prevention class. Participants who selected the exercise class reported that it was viewed as being more strenuous or more appropriate to their own physical ability level, or that they did not want to be associated with the types of people they imagined would be in the fall prevention class. In contrast, participants who selected the fall prevention class did so because they identified with the label either as being applicable to their own lives due to circumstance or because they saw the negative effects of falls in those they knew. The diversity in responses provides further support for viewing falls as a subjective experience (Kingston, 2000), and one that does carry substantial negative connotation. The corresponding likelihood of participation scores indicated, not surprisingly, that participants reported higher likelihood of participation rates for their preferred program selection. However, an interesting interaction effect was found. Those who selected the exercise class reported being significantly less likely to participate in the fall prevention class, whereas the likelihood scores did not differ

significantly between the preferred and non-preferred classes for those participants who chose the fall prevention class. This finding raises the question of whether two program options are needed in community settings in order to provide all older adults with availability of a program that fits the description of their preferred program choice.

The quantitative finding regarding the non-selection of the fall prevention exercise class can be further understood with the qualitative questerview data. When providing rationale for why they did not select the other program option, 55 participants provided a negative response rationale, supporting Ballinger and Payne's assertion (2000; 2002) that falls are an emotive topic for older adults. This negative reaction provides strong empirical support for falls as a highly stigmatizing topic (Hanson, Salmoni, & Doyle, 2009) and supports previous anecdotal suggestions regarding fall-related stigma. Older adults' responses regarding willingness to disclose falls and comfort with others' knowledge of falls experienced highlight potential selective disclosure strategies used by participants (Goffman, 1963). Similar to previous research (Hughes et al., 2008; Yardley & Nyman, 2007), participants actively described themselves in ways that would refute the personal applicability of the falls label or the need for such a program. Participants minimized their own risk of falling, supporting the previous finding from Kilian and colleagues (2008). Further, participants did not feel the fall prevention exercise class was appropriate for them, as they associated the topic with concepts such as being "tottery", "old", and "frail". Consequently, these participants had particular connotations regarding the fall prevention option and appeared to transfer those negative attributes to the people they believed would attend or would be appropriate candidates for such a program. The resistance against association with such attributes personally, or such individuals more

generally, demonstrates a response that highlights the stigma associated with falls during older adulthood.

The hypotheses of sex and age group differences (Campbell et al., 1990; Minichiello, Browne, & Kendig, 2000) were not supported by the present data. All age group and sex strata demonstrated the same pattern of program preference. It is possible that the hypothesis regarding sex differences does not extend from fall disclosure patterns to stigma associated with exercise program preferences. While Horton (2007) found differences regarding perceptions of risk of falls, perhaps reported participation patterns do not generate the same sex-based differences. The lack of support for the hypothesis based on age group was perplexing. One potential issue that is worth considering is whether older and younger participants report the same stigmatized outcome but for different reasons. Future research could assess whether a design employing greater sensitivity can distinguish age-related differences in fall-related stigma.

Previous research has suggested that subjective norms could be helpful in promoting older adults to undertake prevention efforts, such as strength and balance training (Yardley, Donovan-Hall, Francis, & Todd, 2007). However, findings from both experiments do not lend support to this assertion. The vast majority of participants in the present two experiments reported that the opinions of important others were not significant to them, nor would such opinions cause the participants to change their reported behaviours. If one group of important others was targeted to influence older adults' behaviours perhaps this role could best be fulfilled by the general practitioner, as participants' doctors were the commonly cited person whose opinion may have some influence.

A number of potential factors for future consideration came to light from the regression analysis findings. Perceived personal suitability appears to hold strong potential for modification to alter behaviours, as it was a predictor in all regression analyses. This finding corroborates previous research regarding the need for preventive advice to be viewed as suitable (Yardley, Donovan-Hall, Francis, & Todd, 2006) with the information contained perceived as personally relevant (Kreuter, Strecher, & Glassman, 1999). The willingness to tell others of one's involvement in the program was also a predictor in more than one analysis, indicating the need for older adults to find programming compatible with self-concept and identity (Hanson, Salmoni, & Doyle, 2009). The resulting emotional affect, between pride and embarrassment, also requires investigation, as reducing the perception of embarrassment associated with involvement may result in altering older adults' behaviours. Finally, self-rated risk of falling and self-rated balance could be targeted in future research in an effort to change perceptions surrounding participation in such programs. However, it is clear that additional work is needed to further understand whether these factors could potentially be used to influence older adults' attitudes and behaviours surrounding falls and fall prevention programming.

The results of these two experiments provide significant theoretical contributions to the field of falls by confirming the application of theories used to support falls as a stigmatizing topic for older adults. Identity threat, modified labelling theory, and attribution theory were used as the theoretical basis for understanding falls as a stigmatizing topic (Hanson, Salmoni, & Doyle, 2009). The contribution made by both labelling theory and identity threat was confirmed. The influence of the labelled program description was evident. Older adults did not select the labelled, fall prevention class as

the connotations brought to mind by the description would then be seen as being directly applied to them as individuals. The lack of compatibility with the older adult's sense of self was demonstrated in the rationale for program selection. Older adults' provided comments demonstrating the lack of perceived applicability or suitability of the fall prevention class as rationale for why they did not select it. Attribution of cause was less directly demonstrated but was evident in conjunction with labelling and issues of identity. This finding suggests that perhaps causal attribution is not a direct mechanism for fall-related stigma, but rather, fuels issues of label avoidance and preservation of identity.

An interesting outcome of this research was the lack of statistical significance of the fall history variable. Fall history, defined as any fall(s) in the past 12 months, did not predict program choice or reported likelihood of participation, meaning that sustaining a recent fall did not influence older adults to take up fall prevention activities, nor increase the likelihood of participation in such programming. Further, only four participants from Experiment 2 termed themselves as 'fallers' even though 22% of respondent reported experiencing at least one fall in the prior 12 months. These findings may have relevance for recruitment efforts for preventive programming. Perhaps fall history is not the correct way to identify those suitable for fall prevention interventions, but targeting efforts to those with high self-rated risk of falling or poorer perceived balance would be more suitable characteristics over those who have recently experienced a fall.

The results from this research also have implications for practice. At first glance, these findings appear to support the removal of the 'fall' label in program descriptions targeted at the older adult population. There is already a move in this direction in some practice settings. However, the qualitative data indicate that doing so could be a

disservice. Some older adults appear to have a positive reaction to the fall label and a negative reaction to exercise. These individuals identified with the fall prevention label and immediately selected it as their preferred program option. These participants also provided a logical thought process outlining the rationale for selecting the fall prevention program over the alternative. Some people identified with the topic based on their own assessment of their abilities or their prior experiences with falling. Others identified with the fall label because they have seen the negative impact of falls in the lives of those they know and care about. Further, results from Experiment 1 indicated that there are certain fall scenarios that older adults feel are appropriate circumstances under which to enter fall prevention programming. Higher scores, corresponding to greater appropriateness for fall prevention programming, were provided by participants for fall scenarios attributed to Parkinson's disease and frailty. This finding demonstrates that there are situations when older adults deem fall prevention programming to be appropriate.

Further research is needed to better understand the full ramifications of removing the fall label from program advertisements. The results of this research indicate that at least a small subgroup of older adults appear to be recognizing the applicability of the label and subsequently selecting it as the most preferred program option and that there are fall situations that older adults consider appropriate for preventive efforts. A blanket removal of the use of 'fall' or 'fall prevention' would eliminate this identifier and therefore the preference of this subgroup and fall context.

In general, we have provided initial evidence that labels used in preventive programming are not simply a semantic preference of older adults but are actually influencing perceptions and self-reported behaviour choices. While previous research

has provided anecdotal accounts and suggested that falls are likely a stigmatizing topic for older adults, the current work presents the first empirically tested data supporting the conclusion of fall-related stigma in older adulthood. Using fall-related stigma as a theoretical framework grounds this research and paves the way for the organization of future research. The experiments presented here demonstrate the complex story behind fall-related attitudes and behaviours and have made a significant step forward in the application of stigma concepts to aid in the understanding of the topic of falls among older adults.

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Chapter 4: Experiment 3 – De-stigmatizing falls in older adulthood: Framing the fall prevention label and mitigating its negative effects

Introduction

Previous research has shown that older adults hold different perceptions regarding the topic of falls depending on whether they considering the issues for themselves personally or for other older adults more generally. For example, while older adults believe that their peers are at risk for falling, they do not perceive themselves to be at personal risk (Braun, 1998; Kilian, Salmoni, Ward-Griffin, & Kloseck, 2008). Similarly, Yardley, Donovan-Hall, and co-workers (2006) found that older adults felt that fall prevention advice was useful for other older adults, but not for themselves personally. This lack of personal relevance has been identified by Hughes and colleagues (2008) as an important obstacle for fall awareness-raising and prevention campaigns. Ballinger and Payne (2000) have reported that older people represent themselves in ways designed to refute the suggestion that they were mentally or physically frail or responsible for their fall. Admitting that falls prevention advice might have relevance was stated by some older adults to be a humiliating prospect, as they did not view themselves as being at a place where such information was needed (Yardley, Donovan-Hall, Francis, & Todd, 2006). In general, previous research has shown that older adults resist association with the topic of falls and deny their personal need for fall prevention programming.

More broadly, older adults appear to actively dissociate themselves from the label of ‘old’ and the associated stereotypes that go along with such a label (Hughes et al.,

2008). Older age, as stated by Kingston (2000), is primarily associated with decline and increasing dependency. Dobbs and co-workers (2008) suggested that signs of disease or discrediting of the individual associated with the aging process contribute to a negative evaluation that can become part of personal identity. Negative social interactions, such as underestimations of the older person's abilities or questions regarding their competence, can influence the self-concept of older adults (Minichiello, Browne, & Kendig, 2000). Falls in older adulthood appear to hold significant associations with the aging process and, therefore, can be perceived to challenge an older adult's sense of self and threaten their independence.

Yardley and Smith (2002) found that a loss of functional independence was one of the consequences of falling commonly feared by older adults. The social consequences to self-image, self-confidence, and the embarrassment of being seen as losing physical control were also concerns of older adults about falling (Yardley, Donovan-Hall, Francis, & Todd, 2006). Reluctance to be viewed as old and disabled could have a negative influence on participation in health promotion and injury prevention groups or classes (Yardley, et al., 2006). One potential reason for older adults to resist participation in fall prevention activities has been the suggestion that falls are a potentially stigmatizing topic (Hanson, Salmoni, & Doyle, 2009; Hanson, Salmoni, Doyle, & Orchard, 2010).

Stigma

As described by Goffman (1963), stigma is the relationship between an attribute and its characteristic. Definitions of stigma have been developed as Goffman's work has been expanded upon and applied to other topics. Steward and colleagues (2008) have

described stigma as a devalued status attached to a condition or attribute by society. Because of its potential influence on one's functional status, stigma has been applied to research in a variety of health areas, including mental health (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001), HIV/AIDS (Berger, Estwing Ferrans, & Lashley, 2001), and disability (Susman, 1994). It has also been used to better understand age-related health issues such as urinary incontinence (Mittiness & Barker, 1995; Paterson, 2000) and hearing loss (Wallhagen, 2009). In an attempt to better understand why older adults are resistant to disclosing falls, making behaviour change to prevent future falls, or enrolling in fall prevention programs, Hanson, Salmoni, and Doyle (2009) concluded that falls can be considered a stigmatizing topic for older adults.

Fall-related stigma

Falls hold different meanings for different individuals and are an example of a subjective experience (Kingston, 2000) and an emotive topic (Ballinger & Payne, 2002). Falls can result in stigma for older adults due to the associated negative connotations that are often ascribed to someone who has fallen, such as being considered old, frail, and in a state of increasing dependency. By denying the personal appropriateness of labels, either through reforming or denying possession of the characteristic (Ward, 1977), older adults can avoid the associated stigma. After drawing from existing theory, Hanson and colleagues (2009) argued that older adults are not likely to report a fall that they attribute to a cause that will potentially threaten their current identity and negatively label them in the eyes of others.

By extension, participation in fall prevention activities are likely influenced by the same stigma-related factors including the threat to self-identity, the attribution of cause,

and the use of labels. More specifically, older adults make deliberate efforts not to be viewed as old (Minichiello, Browne, & Kendig, 2000), and could potentially avoid participation in fall prevention activities to avoid the negative consequences of labelling (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989) associated with falls and the aging process in general. Older adults may attribute falls to chance, bad luck, or fate rather than causes perceived as more serious in order to avoid the need for preventive activities, as causal attributions play a role in determining the appropriate reaction to events or behaviours (Kelley & Michela, 1980). And finally, older adults may avoid taking up fall prevention advice or initiatives as a way of preserving their self-identity through the dissociation of unwanted group membership (Kelly & Field, 1996), such as being viewed as a faller, old, or frail.

The 'Fall Prevention' Label

Previous research by Hanson, Salmoni, Doyle, and Orchard (2010) found that the label used in promoting exercise classes influenced older adults' responses. When given the opportunity to select their preference between two programs that were the same in all respects except the program title, or label, used, many older adults did not select the program that used the word falls. The research found that the overwhelming majority of participants (79%) selected the non-labelled program, with only 21% of participants selecting the exercise class described as 'fall prevention'. When asked to provide a rationale for the choice made, older adults provided an emotionally negative response to the fall prevention option (Hanson et al., 2010). It was also found that several key constructs could be used as predictors of program choice and the subsequent reported likelihood of program participation scores. The constructs were found to include older

adults' perceived personal suitability of the class, willingness to tell others of joining the class, the resulting affect, and self-rated balance and risk of falling. While Hanson and colleagues' work demonstrated the negative perception of the fall prevention label for older adults, the research also uncovered a unique and unanticipated development. A subgroup of older adults self-identified with the fall prevention label and selected it as their preferred program choice. This finding runs counter to a movement among some fall prevention practitioners to remove the fall label from the promotion of preventive programming, terming it the 'f-word'. Hanson and colleagues argued that removing the label also removes the potential identifier of program suitability, therefore eliminating the identification of the program for those older adults who prefer it.

Given what is known about fall prevalence rates and risk factors, a greater number of older adults should be deeming fall prevention programming options as suitable and selecting such options as their preferred program choice. However, fall-related stigmatization can influence older adults' decision-making, decreasing the perceived suitability and reducing the number of older adults selecting activities labelled as 'fall prevention'. Research is needed to assess the ability to de-stigmatize fall prevention programming.

The present embedded experimental mixed methods research study (Creswell & Plano Clark, 2007) investigated whether the negative label of 'fall prevention' could be attenuated by addressing key constructs prior to presenting a choice between two exercise program descriptions to community-based older adults. By addressing fall-related constructs through the use of information vignettes, the influence of the concepts as de-stigmatizing factors will be assessed. This study will provide timely insight into the topic

of label-based, fall-related stigma. It was hypothesized that after reading a vignette containing de-stigmatizing constructs a greater proportion of participants would select the labelled, fall prevention exercise class than has been reported in previous research. Further, it was hypothesized that a vignette addressing a greater number of the de-stigmatizing constructs would have a greater strength effect on the proportion of older adults selecting the fall prevention exercise option than would a vignette addressing fewer de-stigmatizing constructs.

Methods

Participants

To be consistent with the work of Hanson and colleagues (2010), men and women across different age cohorts of older adulthood were included in the study. The sample was stratified to provide equal representation from three age groups (60-69 years, 70-79 years, and 80 years and over) and both sexes (males and females). A sample of 107 participants was determined to provide adequate statistical power (Portney & Watkins, 2000), but was rounded to 108 to provide equal distribution across the stratification cells. Participants were recruited from community centres, social and recreational groups, and commercial shopping areas (see Appendix 9 for details).

Informed consent was obtained for all participants. In two cases the participant refused to provide their name so completion of the survey was considered consent to take part. The study was approved by the Research Ethics Board at The University of Western Ontario.

Instruments

The survey contained one of two vignette versions, a two-alternative, forced-choice decision regarding program preference, and questions designed to assess attitudes and opinions regarding both exercise program options and the topic of falls in older adulthood. The vignettes aimed to provide general information regarding falls in older adulthood. The vignette message was strictly informative, with no tactics employed to bring about persuasion (Rogers, 2007). The message was framed in neutral language to avoid explicit use of gain-framed or loss-framed wording (Salovey, Schneider, & Apanovitch, 2002) or emotional fear appeals (Benoit & Benoit, 2008). The information addressed several constructs related to the topic of falls. The vignettes differed in the number of constructs addressed, hypothesized as the strength of the effect. Version A included the constructs of personal suitability and benefit of fall prevention programming and the normalization of the topic of falls across the lifespan. Version B included the constructs from Version A as well as statements about the inclusion of various levels of fall risk and balance abilities, emotional affect, willingness to disclose, and causal attributions of falls. The constructs were selected based on previous research findings (Hanson, Salmoni, Doyle, & Orchard, 2010). The two vignette versions can be found in Appendix 7. Participants were asked to read the introductory information prior to reading both exercise program descriptions.

The question regarding program preference asked participants to select which of two exercise program options they would most prefer to take part in, set up as a two-alternative, forced-choice response (Aupperle, 1991; Travers, 1951). One program advertised an “Exercise Class for Older Adults”, where the goal of the program was to

help older adults maintain their abilities. The other program advertised a “Fall Prevention Exercise Class for Older Adults”, where the goal of the program was to help older adults prevent falls. Both descriptions included the same program components and class details. In a comprehensive overview of exercise and physical activity for older adults, ideal exercise prescription for all older adults was found to include aerobic exercise, muscle strengthening exercises, and flexibility exercises. Further, balance training activities have been found to improve balance abilities and are recommended as part of an exercise intervention to prevent falls (Choszko-Zajko et al., 2009). Thus, the program components in each program option included balance and coordination, cardiovascular fitness, and muscular strength exercises. The two options differed only in the label used in the title and the subsequent goal of the program. The presentation order of the two programs, from left to right, was counterbalanced.

Participants were asked to respond to survey questions for both their preferred and non-preferred exercise program selections. Questions on the reported likelihood of participation, perceived benefit and personal suitability, resulting affect, and disclosure and comfort levels were included. Finally, the survey included general questions on fall-related attitudes and opinions and demographic information. All questions included in the questionnaire were based on supporting theoretical constructs or had been suggested by the existing literature in the field. The full survey can be found in Appendix 7. Prior to the start of data collection the survey was piloted with older adults.

Procedure

Participating older adults were asked to read the randomly assigned vignette paragraph of information followed by the description of two exercise program options.

Participants were then asked to make a two-alternative, forced-choice response to indicate which exercise program option they would most prefer to take part in.

Participants were free to move through the questionnaire at their own pace and were instructed to think-out-loud as they responded to the survey questions. Their verbal account of their thought process was audio recorded with permission and field notes were taken by the researcher. This procedure combines both the quantitative survey data and the qualitative think-out-loud interview method (Adamson, Gooberman-Hill, Woolhead, & Donovan, 2004).

Data Analysis

Due to an over-recruitment in some strata, 121 participants provided survey data. Participants were randomly removed from the over-recruited strata in order to have an equal strata size of 9 participants of each vignette version in each of the six strata ($N = 108$).

The audio account provided by participants and any survey notations made on the survey pages were included in the qualitative content analysis. Any relevant field notes documented by the primary researcher (HH) were also included, where appropriate. Each unique idea expressed by a participant in his or her verbal responses represented a potential coding unit (Krippendorff, 2004) in the qualitative analyses. Therefore, participants could contribute to more than one coding category in the enumeration process.

Quantitative data analysis included chi-square, analyses of variance, and multiple and logistic regressions. The data entry process was verified by a double-entry of a random sample of surveys. Assumptions regarding normality were checked prior to

analysis and re-coded variables were used where necessary (Osborne & Waters, 2002). Common conventions for the number of independent variables to include in a multivariable model given the attained sample size were observed (Katz, 2006). All quantitative analyses were completed using SPSS Version 16.0 [SPSS, Inc., Chicago, IL].

Results

One-hundred and eight participants were included in the data analyses. Fifty-eight participants completed both the qualitative think-out-loud audio component and the quantitative survey. Five participants refused the audio recording. Of the remaining 45 participants, 26 completed the survey in the presence of the primary researcher but were not in a one-on-one setting to take part in the audio component and 19 were given the survey and instructions, completed the survey on their own, and returned the completed survey to the primary researcher. Participants who provided the audio component took between 10 and 50 minutes ($M = 20:27$, $SD = 8:19$) to complete the survey. In general, participants were well educated and in good self-reported health. A breakdown of the characteristics of the sample can be found in Table 8.

Table 8
Experiment 3 Participant Demographic Characteristic Descriptions

Characteristic ^a	Vignette A – 3 construct strength (<i>n</i> = 54)	Vignette B – 8 construct strength (<i>n</i> = 54)	Total (<i>N</i> = 108)
Age	75.0 ±9.1	75.6 ±9.7	75.3 ±9.4
Male sex – no. (%)	54 (50.0)	54 (50.0)	54 (50.0)
Married – no. (%)	19 (35.8)	28 (51.9)	47 (43.9)
Living alone – no. (%)	32 (59.3)	22 (40.7)	54 (50.0)
Education ^b	4.6 ±2.2	5.2 ±2.3	4.9 ±2.2
Perceived income	3.9 ±1.4	4.3 ±1.4	4.1 ±1.4
Self-rated health	3.5 ±1.0	3.6 ±1.0	3.5 ±1.0
Daily prescription medications	3.4 ±2.6	2.9 ±2.2	3.1 ±2.4
Experienced previous fall(s) (past 3 mo.) – no. (%)	7 (13.0)	9 (16.7)	16 (14.8)
Experienced previous fall(s) (past 12 mo.) – no. (%)	21 (38.9)	20 (37.0)	41 (38.0)

^a Note: Plus-minus values are means ±SD.

^b Education was measured on a scale that categorized 9 levels of the highest level of education attained. Category 4 was “some trade/technical school or college”; Category 5 was “completed trade/technical school or college diploma”; Category 6 was “some university.”

Program Choice and Reported Likelihood of Participation

When given the choice of which exercise program option participants most preferred to take part in, 59.3% of participants selected the non-labelled exercise class and 40.7% of participants selected the labelled fall prevention exercise class. Participants did not respond differently depending on the randomly assigned vignette version (χ^2 (1, *N* = 108) = 1.4, *ns*), age group (χ^2 (2, *N* = 108) = 4.0, *ns*), or sex (χ^2 (1, *N* = 108) = 1.4, *ns*). The preferred program choices can be found in Figure 7. Current participation in regular physical activity or organized exercise did not direct participants' program decision (χ^2 (1, *N* = 108) = 3.3, *ns* and χ^2 (1, *N* = 108) = 0.2, *ns*, respectively). In order to determine whether the proportion of participants who selected the labelled fall prevention program differed from a hypothesized proportion, a chi-square goodness of fit test was computed. The hypothesized proportion was taken from Hanson and coworkers' (2010) previous finding of approximately 20% of participants selecting the fall prevention program. The

observed and expected values for the chi-square goodness of fit therefore utilized an 80% (exercise class) - 20% (fall prevention class) proportion. The actual observed proportion of participants selecting the fall prevention exercise class (approximately 40%) was significantly greater ($\chi^2(1, N = 108) = 29.0, p < .001$) than the previous finding of approximately 20% (Hanson et al., 2010).

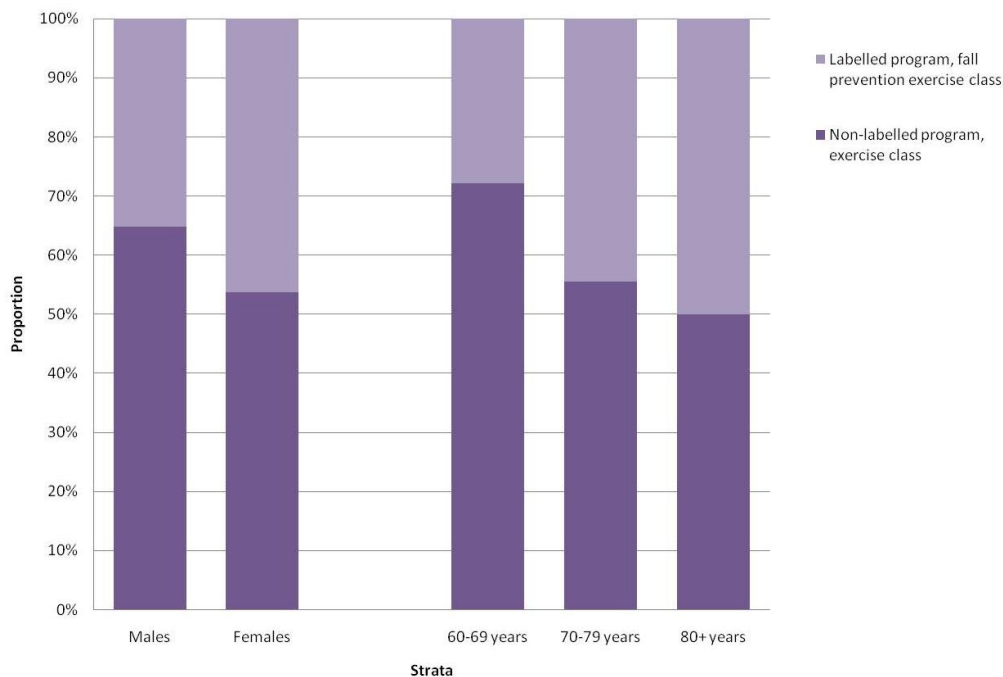


Figure 7. Preferred program choice, between a labelled fall prevention exercise class and non-labelled exercise class, for age group and sex strata.

In order to determine the effects of sex, age group, and vignette version on the reported likelihood of participation scores for the fall prevention exercise class, a 2 x 3 x 2 analysis of variance was conducted. No significant main effects were found for sex ($F(1,95) = 0.8, ns$), age group ($F(2,95) = 1.9, ns$), or vignette version ($F(1,95) = 0.1, ns$). No significant interactions were found between sex, age group, and vignette version.

Logistic regression analyses were used to determine whether program choice could be predicted by responses to key survey questions. Potential predictors were

entered into a univariable analysis, with those meeting the threshold of $p < .10$ included in the multivariable logistic regression. Predictor variables were entered using the forward stepwise method with the removal criterion based on likelihood ratio. The final model (see Table 9) included 4 predictors that significantly influenced the odds of participants' selection of the fall prevention exercise class. The selection of the fall prevention class was negatively related to perceived personal suitability of the exercise class (OR = .41, $p = .001$) and positively related to perceived personal suitability of the fall prevention class (OR = 2.1, $p < .05$), willingness to tell others of joining the fall prevention class (OR = 1.61, $p = .08$), and self-rated risk of falling (OR = 3.17, $p < .01$). The Hosmer and Lemeshow goodness-of-fit test indicated the model fit the data well ($\chi^2(7) = 6.8, p = .46$). The observed and predicted frequencies for selection of the fall prevention exercise class found a 69.7% overall percentage correct.

A stepwise multiple regression analysis was used to understand whether participants' responses could predict their reported likelihood of participation score for the fall prevention exercise class. Re-coded variables were used to meet the assumption of normality (Osborne & Waters, 2002). The results indicated that two predictors explained 41% of the variance ($R^2 = .41, F(2, 95) = 32.8, p < .001$). Perceived personal suitability ($\beta = .43, t(95) = 4.5, p < .001$) and a positive resulting affect ($\beta = .28, t(95) = 2.9, p < .01$) significantly predicted the likelihood of participation scores for the fall prevention exercise class.

Table 9
Experiment 3 Univariable and Multivariable Logistic Regression Analyses for Program Choice

Variable	Univariable		Multivariable ^b	
	OR ^a (95%CI)	<i>p</i> value	OR (95%CI)	<i>p</i> value
<i>'Exercise Class'</i>				
Personal suitability	.66 (.50-.87)	.01	.41 (.23-.74)	.01
Resulting affect	.82 (.61-1.10)	.18	--	--
Willingness to tell others	.89 (.64-1.24)	.50	--	--
Comfort	1.03 (.79-1.34)	.82	--	--
<i>'Fall Prevention Exercise Class'</i>				
Perceived benefit	1.12 (.75-1.67)	.59	--	--
Within capabilities	.77 (.53-1.10)	.14	--	--
Personal suitability	1.31 (.99-1.73)	.06	2.06 (1.14-3.72)	.02
Resulting affect	1.40 (1.01-1.94)	.04	--	--
Willingness to tell others	1.38 (.97-1.95)	.07	1.61 (.95-2.73)	.08
Comfort	1.02 (.76-1.36)	.91	--	--
<i>Demographic Section</i>				
Self-rated risk of falling	3.92 (1.94-7.91)	.00	3.17 (1.34-7.47)	.01
Self-rated health	.70 (.46-1.05)	.09	--	--
Self-rated balance	.51 (.34-.76)	.01	--	--
Fear of falling	2.10 (1.40-3.13)	.00	--	--
Sex	1.59 (.73-3.44)	.24	--	--
Age	1.04 (.99-1.08)	.10	--	--
Fall history (past 12 mo.)	1.70 (1.12-2.56)	.01	--	--

Notes: ^aOR = odds ratio; 95%CI = 95% confidence intervals.

^bUnivariable threshold for entry in multivariable model was $p < .10$.

Blank cells indicate that the corresponding variable did not meet the entry criterion for the forward stepwise entry procedure of the multivariable model.

Hosmer and Lemeshow Goodness of Fit Test ($\chi^2 (7) = 6.75, p = .46$). Classification accuracy = 69.7%

In an attempt to better understand the significant predictor of perceived personal suitability, a stepwise multiple regression analysis was conducted to determine whether

key demographic variables could be used to understand the determination of personal suitability. Variables included were age, sex, fall history, self-rated balance, and fear of falling. No predictors were found to be significant. Looking more broadly across available variables, personal suitability was not significantly correlated with additional survey responses or demographic characteristics.

General Attitudes and Opinions on Falls in Older Adulthood

Participant perceptions regarding the causes of falls and the implications of falling were assessed in Part 2 of the survey. Level of agreement, from strongly disagree to strongly agree on a 7-point Likert-type scale, was collected for three statements regarding potential causes of falls and three statements regarding the implications of falling for older individuals in general. In order to explore potential age group and sex differences in response patterns, 3 x 2 analyses of variance were conducted for each question. No significant findings were uncovered. Descriptive statistics (Appendix 8) concluded that older adults generally agreed with the six statements. Scores ranged from 5.1 to 5.9, equivalent to responses ranging from somewhat agree to agree on the 7-point scale.

Questerview Analysis

Content analysis was used to understand participants' general reactions and thought processes employed as they completed the survey. Analysis began with open coding to determine what aspects of the vignette participants most positively responded to. After reviewing the audio data and transcripts, it was determined that insufficient think-out-loud information was provided by participants regarding their response to the informational vignette.

A content analysis was then conducted to understand participants' rationale for their preferred program choice. The dominant emotion characterizing the rationale provided by each participant was assessed. Each participant was used as a recording/coding unit and unit of enumeration (Krippendorff, 2004) in order to ensure that the primary thought process was analysed. Responses were coded as positive about the preferred program, negative about the non-preferred program, or neutral. When participants who selected the exercise class were asked why they selected it as their preferred program, 41 participants provided a positive response rationale regarding the exercise class, 18 provided a negative response to the fall prevention class, and 5 people provided a neutral response. When participants who selected the fall prevention class were asked why they had selected it as their preferred program, 39 participants provided a positive rationale regarding the fall prevention class, 1 person provided a rationale that was negative against the exercise class, and 4 participants were coded as neutral.

Participants were also asked why they did not select the other program option. When participants who selected the exercise class were asked why they did not select the fall prevention class, 6 provided a rationale reaffirming their positive response to the exercise option, 38 provided a negative rationale regarding the fall prevention class, and 20 participants were coded as neutral. When participants who selected the fall prevention class as their preferred program were asked why they did not select the exercise class, 18 provided a rationale restating their positive response to the exercise option, 9 provided a rationale that was negative regarding the exercise class option, and 17 were coded as neutral. Table 10 demonstrates the enumeration of these coding categories.

Table 10
Experiment 3 Dominant Emotion Expressed by Participants in Response to Program Choice Rationales

Program Choice	Dominant Emotion of Rationale (count)			Total
	Positive about Preferred Program	Negative About Non-preferred Program	Neutral/Don't Know/No Answer	
“Why did you select the program you did?”				
Exercise Class	41 (38.0%)	18 (16.7%)	5 (4.6%)	64
Fall Prevention Class	39 (36.1%)	1 (0.9%)	4 (3.7%)	44
“Why did you not select the other program option?”				
Not Fall Prevention (Exercise Class choice)	6 (5.6%)	38 (35.2%)	20 (18.5%)	64
Not Exercise Class (Fall Prevention choice)	18 (16.7%)	9 (8.3%)	17 (15.7%)	44

In order to understand older adults' general opinions about falls and fall prevention programming, content analyses were completed for participants' responses to concerns regarding falls at various points in life and perceptions regarding those who would attend fall prevention programming. As participants were able to provide more than one idea within their response, each unique idea expressed by a participant was used as a coding unit. This resulted in enumeration that exceeded the number of participants and, therefore, distorted the percentage of responses in various coding categories. The most discussed coding categories were ranked for interpretation.

Participants were asked whether there was a time in life when experiencing a fall would be of greater concern to them and when that time would be. The majority of participants (79.6%) felt that there was a particular time in life when experiencing a fall would be of greater concern to them. Participants commonly stated that falling would be a greater concern when they were older. Closely tied to advancing age, participants

reported greater concern of falls when the physical consequences were more severe. Participants commonly reported greater concern due to falling when their bones became more brittle and when the recovery after a fall was longer in duration. Also represented, but in smaller numbers, were the concepts of the threat to independence, concerns surrounding falling during specific situations or behaviours, and concerns of becoming a burden to their families.

Participants were asked for their perceptions regarding the typical or average person they would expect to see attending fall prevention programming. Participants provided diverse responses regarding the anticipated attendees. Descriptors included health motivations,

“Someone with Parkinson’s” (3-088)

“A person who is interested in maintaining optimal health” (3-080)

“Someone with balance problems, painful movements.” (3-003)

personality traits,

“Pleasant, outgoing, and wanting to maintain a safe environment to prevent falls” (3-152)

“Nervous, negative” (3-103)

and demographic or identifying characteristics,

“Frail, handicapped, inattentive” (3-113)

“70 years and over, sedentary, overweight” (3-117)

“A frail wrinkled up oldster” (3-107)

Discussion

This experiment sought to assess the ability of de-stigmatizing constructs to mitigate the negative effects of the fall prevention label on older adults’ subsequent program selection. The findings have demonstrated that providing an informational

message containing de-stigmatizing constructs can result in the selection of the fall prevention exercise class by older adults. Previous research by Hanson and colleagues (2010) found that only 20% of older adults selected a labelled fall prevention exercise class as their preferred program option. The findings of the present experiment indicate that an increase in the proportion of older adults selecting the fall prevention option, from approximately 20% to 40%, can be attained through the presentation of an informational message highlighting key factors in the decisional judgement of program preference. Further, the questerview data supported the reduction in stigmatized responses over previous findings. The dominant emotion characterizing participants' program choice rationale was analysed and found that 18 participants demonstrated a stigmatized rationale regarding their preferred program selection and 38 participants demonstrated a stigmatized rationale for why they did not select the other program option. These findings represent a decrease in the percentage of participants reporting stigmatized thought processes surrounding their program preference decisions over previous findings (Hanson et al., 2010). Fall-related stigma, assessed both qualitatively and quantitatively, was reduced through the presentation of the informational vignette messages.

Fall-related stigma is impacted by the attribution of cause (Kelley & Michela, 1980; Weinberg & Strain, 1995), labelling (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989), and threat to self-identity (Kingston, 2000; Kelly & Field, 1996). Constructs were included in the informational vignette to address these factors. The included statements addressed the inclusion of individuals with a variety of balance and risk levels in order to reduce the labelling associated with fall prevention being solely for those termed 'fallers', and all the negative connotation that is implied by the term. The

statements addressed the compatibility of fall prevention with an individual's sense of self by normalizing the topic and increasing perceptions of suitability. And finally, the statements addressed the multiple causal attributions that can be ascribed to falls in order to highlight the many reasons why people fall. The statements were effective in reducing the stigmatizing potential of the fall prevention label during older adults' evaluation of the two exercise program options. The higher rate of selection of the labelled program by older adults suggests that while falls can be a stigmatizing topic (Hanson, Salmoni, & Doyle, 2009), it is a topic that appears amenable to attenuation. Prefacing the choice of program options with information appeared to help mitigate the stigmatizing effect of the labelled fall prevention program.

While the hypothesized effect of the de-stigmatizing constructs was supported overall, no difference was found between the two vignette versions. The hypothesis was that addressing a greater number of de-stigmatizing constructs would lead to a stronger effect and a greater number of respondents selecting the labelled fall prevention class. The questerview process was not able to effectively capture participants' responses regarding the included statements. Therefore, additional research is needed in order to determine the individual contribution of each of the de-stigmatizing constructs. It is not known which construct, or combination of constructs, influenced older adults' determination of program preference. It is possible that a single construct was responsible for the de-stigmatizing effect of the vignettes. It is also possible that the inclusion of multiple constructs did not provide a cumulative response but, rather, met some threshold for achieving the de-stigmatizing response. Further investigation into which construct, or combination of constructs, played the greatest role in attenuating the

negative fall prevention label is required. Such research would allow for the development of the most ideal combination of constructs, a process that would appear to have practical implications.

An ideal presentation of de-stigmatizing constructs could have significant practical applications. De-stigmatizing constructs could be used by health professionals to preface discussions with older adults regarding their fall history. Tinetti (2003) encouraged physicians to ask their older patients about any falls experienced on a yearly basis. She suggested that physicians initiate the discussion because older adults may not want to volunteer information about falls. Approaching the topic of falling first with de-stigmatizing information might reduce the unwillingness of older adults to share any falls experienced. A more open discussion could then allow older adults to freely share the details regarding any falls experienced and would help health professionals to make more informed assessments to address potential causes of the falls. De-stigmatizing constructs can also be used to encourage older adults to make fall-related behaviour changes. If older adults do not fear their actions will be interpreted as a sign of decreasing competency or loss of abilities (Minichiello, Browne, & Kendig, 2000), perhaps they will be more willing to make fall-related behaviour changes. And finally, as demonstrated in the present experiment, de-stigmatizing constructs have practical applications for the promotion of fall prevention initiatives. The use of de-stigmatizing information can be incorporated into all forms of advertisement for fall prevention activities and programs. Doing so would allow older adults who identify with the fall prevention label to select it as their preferred program (Hanson, Salmoni, Doyle, & Orchard, 2010) while also allowing older adults who do not immediately identify with the label the opportunity to

assess program suitability without fear of judgement if selecting it is deemed appropriate. Utilizing a de-stigmatizing strategy would, therefore, allow fall prevention practice to bring back the 'f-word' in discussions of falls and fall prevention initiatives with older adults. Many future possibilities exist for incorporating de-stigmatizing constructs into fall prevention practice.

The present experiment confirms a number of findings from previous research. The consistency of the proportion of respondents selecting the fall prevention exercise class across the age group and sex strata adds strength to previous conclusions regarding the lack of age group or sex differences (Hanson, Salmoni, Doyle, & Orchard, 2010). Further, the variables predicting program choice and reported likelihood of participation scores were reproduced from previous research findings. Perceived personal suitability, willingness to tell others, and self-rated risk of falling were found to predict selection of the fall prevention exercise class, consistent with Hanson and colleagues' (2010) prior work. The reproducibility of these findings with an independent group of community-dwelling older adults lends support to their impact within the stigmatization process.

Further attention is needed for the predictor of perceived personal suitability. Personal suitability was once again found to be a significant predictor in both the logistic regression and multiple regression models (Hanson, Salmoni, Doyle, & Orchard, 2010). Other researchers have stated that programming needs to be deemed as suitable by older adults and relevant for their needs (Yardley et al., 2007; Yardley, Donovan-Hall, Francis, & Todd, 2007). However, a greater understanding of how older adults determine their perception of program suitability is needed. In this research, no other survey responses were able to successfully predict personal suitability scores. Increasing the understanding

of how older adults evaluate program suitability and the factors that play into their decision-making process will allow future health promotion and injury prevention efforts to be better tailored to the older adult population.

In conclusion, the findings of this research indicate that while falls can be a stigmatizing topic for older adults, strategies can be put in place to diminish the stigma potential. By addressing fall-related constructs through an informational vignette prior to the presentation of the fall prevention label, older adults determined the fall prevention exercise program to be more desirable and selected it as their preferred program option. While further research is required to tease out the most effective de-stigmatizing constructs, this research suggests that simple changes to how fall prevention programs are presented to older adults can potentially have a positive effect on their participation decisions. Broaching the topic of falls with introductory statements about falls and their prevention may increase the comfort of older adults and allow them to make behaviour choices uninfluenced by stigma.

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Chapter 5: General Discussion and Conclusions

1,000 Words; 1,000 Pictures

David Blakesley stated that “While a picture may be worth a thousand words, a word may be worth a thousand pictures, too.” (Rogers, 2007, p. 168). The phrase ‘fall prevention’ appears to paint a thousand pictures for older participants from the three experiments conducted. For some, the phrase ‘fall prevention’ had a positive connotation and was associated with the desire to maintain health by preventing injury. Attributes ascribed to people who would attend such a fall prevention program included wise individuals, with positive and proactive personalities.

Yet for others, ‘fall prevention’ brought to mind negative concepts such as declining abilities, frailty, and advancing age. Attributes ascribed to people attending a fall prevention program included frail, tottery, wrinkled up oldsters. A myriad of potential images appear to be brought to mind by the term ‘falls’ and subsequently ‘fall prevention’.

Images are marked with positive and negative feelings throughout life (Newell, Lagnado, & Shanks, 2007) as individuals experience new events and assign meaning to those events. The positive and negative emotions attached to various images then influence judgements and decisions, with the vividness of the imagery influencing the determination of feelings (Newell et al., 2007). Further, cognitive and emotional reactions are not equivalent. In his often cited work on preferences, emotions, and reactions, Zajonc (1980) argued that decisions about affect, or emotions, require the least amount of information. Such affective judgements are capable of preceding cognitive reactions (Gazzaniga, Ivry, Mangun, & Phelps, 2002; Newell et al., 2007). Emotions can

result in behavioural responses that differ substantially from responses of a purely cognitive appraisal (Newell et al., 2007).

Falls and fall prevention programs are clearly associated with positive and negative emotions for older adults. Understanding the associated affect and decision-making is important for understanding older adults' attitudes and opinions on falls and their behaviours regarding fall prevention programming. Participants in the three experiments demonstrated vivid images regarding the meaning of falls and fall prevention programming and strong emotions surrounding their decisional judgements for program participation. Many participating older adults demonstrated a stigma-influenced decisional response.

Stigma and Falls in Older Adulthood

Stigma refers to an attribute that is deeply discrediting (Goffman, 1997) where possession of the attribute results in a devalued status (Steward et al., 2008). When applying stigma concepts to the study of falls in older adulthood, the concept of impression management aids in understanding older adults' resistance to association with the topic. Stigma is a meaning imposed on an attribute via negative images, stereotypes, and attitudes (Gabe, Bury, & Elston, 2004). Older adults appear to manage others' impressions of them by distancing themselves from the meanings and stereotypes associated with fall-related actions like the disclosure of prior falls or participation in fall prevention programming.

The investigation into fall-related stigma started with a theoretical model. That model incorporated modified labelling theory, identity threat, and attribution theory (see Chapter 2 for the full review). Each theory contributed to the conceptualization of how

falls could result in stigmatization for older adults. The experiences and interactions of older adults can lead to fall-related stigmatization through a single theoretical mechanism or as a result of the interplay of more than one theoretical mechanism. The application of theoretical concepts was deemed to be the vital starting place from which to begin understanding fall-related stigma in older adulthood. Theoretical support was found for understanding fall-related stigma in older adulthood. The low uptake of fall prevention activities by older adults, the unwillingness to disclose prior falls experienced, and the resistance against making fall prevention behaviour changes are practical problems that were assumed to be better understood from application of theoretical concepts. A series of experiments was conducted to start to understand fall-related stigma. Specifically, the labelling aspect of fall prevention activities and older adults' attitudes and opinions regarding such labels were investigated.

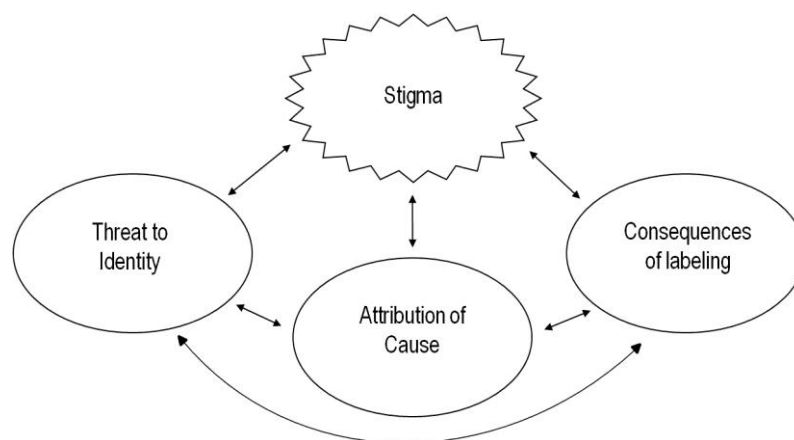


Figure 8. Theoretical contributions to fall-related stigma in older adulthood.

In Experiment 1 (Chapter 3), 143 men and women over the age of 60 were randomly assigned one of two exercise program descriptions. One description identified the program as a general exercise program for older adults. The other description employed the ‘fall prevention’ label. While a design issue limited the ability of the experiment to adequately address the full effect of the labelled program on older adults’ reported likelihood of participation scores, the results did suggest that the hypothesis of lower likelihood of participation scores for the labelled, fall prevention exercise class would hold true. The hypothesis was repeated with improvements to the study design.

Experiment 2 (Chapter 3) was conducted to assess whether older adults’ exercise program preferences was influenced by the fall prevention label. Participating men and women over the age of 60 years were given a two-alternative, forced-choice decision regarding their preference for exercise program participation. After 118 older adults took part, it was found that the vast majority (80%) selected the non-labelled exercise class. While the primary variables of interest in both Experiments 1 and 2 were the exercise program selected and the associated likelihood of participation responses, additional survey questions were collected regarding other attitudes, opinions, and perceptions.

Experiment 3 (Chapter 4) aimed to determine whether providing older adults with introductory information addressing key constructs related to perceptions surrounding the topic of falls could mitigate the presence of the negatively perceived fall prevention label. Of the 108 older adult participants, approximately 60% selected the non-labelled exercise program when given a two-alternative, forced-choice option. There was an increase in the proportion of participants selecting the labelled, fall prevention exercise class, from the 20% in Experiment 2 to approximately 40% in Experiment 3. The findings

demonstrated that the negative effect of the fall prevention label can be mitigated through the presentation of an informational vignette addressing fall-related constructs.

The sequence of three experiments has proven that the topic of falls can be stigmatizing for older adults. The fall prevention label is associated with negative emotions and associated perceptions. Older adult participants attempted to distance themselves from the fall prevention label in an effort to avoid association with the negatively viewed attributes that would go along with such a label. The experiments demonstrate that the application of stigma concepts can allow for a greater understanding of older adults' fall-related attitudes, opinions, and behaviours.

Not only does the theoretical treatment of falls as a stigmatizing phenomenon help to understand the behavioural choices made by older adults, it also helps to elucidate some of the underlying attitudes and perceptions expressed by older adults as they discuss falls and fall-related behaviours.

The initial theoretical model proposed before the completion of the three experiments has been supported. Attribution theory, identity threat, and labelling theory have all been supported. However, the contribution of the three theories to the stigmatization process can be adapted to more effectively demonstrate the process given the results of the three experiments. Undoubtedly, the contribution of the labelling process to stigmatization (Link & Phelan, 2001; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989) became evident in the quantitative survey data. Participants' non-selection of the labelled fall prevention exercise class in Experiment 2 proves the influence of labels for fall-related stigma. The influence of perceptions of self-identity and self-concept (Kingston, 2000; Luken, 1987; Susman, 1994) were demonstrated in

Experiment 3 when the presentation of informational vignettes were able to increase participants' sense of personal applicability of the fall prevention exercise class, as demonstrated once again by the quantitative program choice data. The contribution of attribution theory (Kelley & Michela, 1980) became evident in the qualitative data provided by participants. While attribution theory was not clearly demonstrated in the decision made by participants, it was highly used as reasoning for the choice made. Attributions were evident in the rationale participants provided, both for selection and non-selection of the fall prevention class. In general, participants who selected the fall prevention exercise class used attributional reasoning for the choice that they made, which subsequently led to the application of the 'fall prevention' label and associated self-identifying components. By comparison, participants who did not select the fall prevention program generally dissociated from the label of 'fall prevention' and the associated implications for self-identity by using attributional reasoning as a way of relabeling and preserving their sense of self. Finally, this process is taking place in the social environment where social stigma influences everyday interactions. The original theoretical model can be adapted (Figure 9) to take into account both the quantitative and qualitative findings of the three experiments as follows:

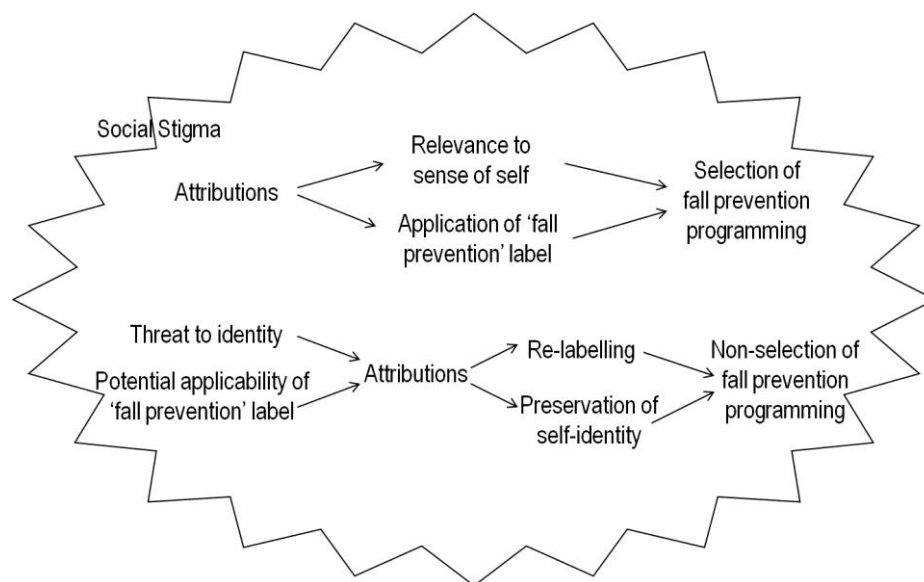


Figure 9. Proposed contribution of stigma theories in the explanation of older adults' fall prevention program participation decisions.

A number of noteworthy points are deserving of further discussion. Findings regarding affective decisional making, subjective norms, perceived suitability, readiness for exercise, and the social and psychological stigma will be discussed in turn below.

Subjective Norms

Health behaviour theories have been used in the conceptualization and development of falls research. For example, Yardley and colleagues (2007, 492) used the theory of planned behaviour as a theoretical framework for the development of their research related to strength and balance training. Findings from Experiments 1 and 2 are important to view in relation to such theoretical application. The theory of reasoned action (TRA) and the extension of the concepts to the theory of planned behaviour (TPB) both incorporate the construct of subjective norms.

TRA (Ajzen & Fishbein, 1980) states that a person's intention to perform an action is a primary determinant of their behaviour. The intention of an individual is

comprised of two determinants: attitudes toward performing a behaviour and perceptions of the social pressure exerted to perform the behaviour (Ajzen & Fishbein, 1980; Cappella, Fishbein, Hornik, Ahern, & Sayeed, 2001). TPB was developed by adding the concept of perceived behavioural control to the TRA, alongside the existing attitude and subjective norms determinants of intentions (Ajzen, 1991; Sparks, 2000; Webb & Sheeran, 2006). Of importance to the present discussion is the subjective norms component. Subjective norms describe an individual's belief about what most others who are important to the individual think he or she should do (Trafimow, 2000) and represent perceived social pressure to take part in certain behaviours and the motivation to comply with such expectations (Pender & Pender, 1986).

Findings from Experiments 1 and 2 appear to refute the usefulness of subjective norms as a concept integral to the study of older adults' fall-related behaviours. When subjective norms were assessed in Experiment 1 for three groups of important others (family, friends or neighbours, and doctors), participant scores generally indicated strong agreement by important others regarding suitability of program participation (scores ranged from 75 to 84 on visual analogue scale). However, qualitative responses during the questerview process uncovered that while participants felt those important to them would agree with their program participation, the opinions of these groups of people were not an important factor in their decision-making process. Experiment 2 directly assessed this finding by asking participants whether the subjective norms responses would, in fact, cause them to change their behaviours. The majority of participants reported that the opinions of important others would not cause them to change their behaviours, and once again the questerview data supported the lack of influence on respondents' decision-

making. As the findings from Experiments 1 and 2 indicate that the subjective norms concept was not influential in older adults' decision-making for these two experiments, further research would need to be conducted to determine the value of the subjective norms concept in other falls research applications.

Affective Decisions

Fall-related stigma was certainly expressed by participants as an emotionally derived response. The rationale provided by participants for the program choice they made in Experiments 2 and 3 could easily be distinguished by the underlying emotional affect expressed. For some participants across the three experiments, their dislike of the fall prevention exercise option was immediate, almost alike to a knee-jerk reaction. The primacy of affect (Newell, Lagnado, & Shanks, 2007) as argued by Zajonc (1980) is supported in these individuals' responses. The negative affective reaction toward the fall prevention option was demonstrated in the non-selection of the fall prevention class, and then followed up with a rationale as to why it was not the selected option, or why the alternate, non-labelled exercise class was. This general thought process of emotionally derived thought expressed first and followed by the decision rationale, follows Zajonc's argument that affective judgements occur before, and independent of, cognition. Stigma follows the pattern of affective responses and therefore the study of fall-related stigma could be aided by research on affect and emotion in decision-making.

Perceived Suitability

Perceived suitability was found to be an important construct in all three experiments. While personal suitability was found to predict program choice and

reported likelihood of participation scores, a major finding was the lack of ability to use other survey questions to predict personal suitability scores. Suitability scores did not highly correlate with other questions included in the survey, such as self-rated risk, fall history, age, or sex. Suitability, therefore, appears to represent a unique construct related to older adults' personal assessment of fall prevention programming. It is possible that suitability was correlated with some variables not captured by the questions included in the survey. It is also possible that suitability is determined by some other self-assessment or thought process and represents a truly unique evaluation of older adults' preferences or abilities. Additional research is needed to better understand how older adults determine personal suitability of fall prevention activities. Such knowledge could improve advertisement strategies in order to appeal to older individuals' perceptions of personal suitability.

Readiness for Exercise

Across the three experiments, a main variable of interest was the reported likelihood of program participation score provided by participants for a hypothetical exercise class. In Experiment 1, participants randomly received either a description of a fall prevention exercise class or a generically titled exercise class. In Experiments 2 and 3, participants were provided with both exercise classes from Experiment 1 with modifications to the program description and a layout. Effort was made to describe the classes in a manner consistent with actual program advertising, including sufficient detail about the program components to aid older adults in making a decision. However, in order to ensure participants did not base their decision on logistical issues not relevant to the labelling hypothesis, potential barriers to exercise participation were addressed

(O'Neill & Reid, 1991). Participants were asked to overlook issues such as whether the program would fit into their schedule, if a financial cost associated with the program could be met, and the logistical detail of transportation to and from the program.

It is important to recognize that the likelihood scores do not directly translate into exercise participation rates for community-dwelling older adults. Participants were aware that the survey aimed to capture attitudes and opinions and that no existing exercise program was being offered to them at the time of survey completion. In this respect, the scores likely overestimate likelihood of participation rates as not all participants were actually ready for exercise participation. However, even though participants were asked to respond to hypothetical or imaginary exercise programs, the studies do have significant relevance to the promotion of health and injury prevention programming at the community level.

The transtheoretical model of stages of change has been applied to the study of a number of health behaviours (McKenzie & Smeltzer, 1997). The model helps to explain the stages that people experience as they attempt to change their health behaviours and their associated readiness for change at each stage (Siegel & Doner Lotenberg, 2007). The five stages in making a behaviour change include precontemplation, contemplation, preparation, action, and maintenance (McKenzie & Smeltzer, 1997). The current series of studies hold relevance to the understanding of decisions around entry into fall prevention programming. All participants, regardless of their actual readiness for behaviour change, were exposed to the opportunity to take part in exercise just as would take place in the real-world setting of a community-wide promotional flyer or advertisement for an exercise class. The present series of experiments mimics the

broader targeting of individuals in the community because respondents likely represented people at each of the various stages of behaviour change. All individuals in a community-wide advertisement campaign would receive the message and make their own judgements about attention given to, and interest in, the message. While not all message recipients would be at the higher readiness levels, the presentation of the programming could be the positive exposure needed to move people along to the next stage.

Social – Psychological Stigma

Human interactions take place in a socially constructed world, where the interpretation of meaning is derived from those interactions and experiences (Gergen, 1985; Pawson, 1999). Stigma mirrors society (Coleman, 1997) and springs from the definitions society uses to categorize individuals (Gabe, Bury, & Elston, 2004). Stereotyping and stigmatization are separate, yet highly related processes (Biernat & Dovidio, 2003). Social stigma exists when meanings regarding stereotypes and group membership decrease the status of the members of those groups. Ageism is a major contributor to the social stigma of falling. The ageist perspectives related to independence and health become tied to events that threaten these values.

While stigma exists in the social world, it is also a creation of the psychological interplay between individuals and their social reality. Psychological stigma is the process in which individuals buy into stereotypes and existing social stigmas and apply the negative attributes from the social world to the individual level. It is the process of cognitively marking an individual as possessing a negative characteristic and defining the individual in terms of the negative attribute (Neuberg, Smith, & Asher, 2003).

Fall-related stigma demonstrates aspects of both psychological stigma and social stigma. In accordance with the social ecological model (McKenzie & Smeltzer, 1997), addressing stigma at multiple levels of influence (individual, interpersonal, community, and public policy) would produce the greatest opportunity to achieve change. Addressing fall-related stigma at the public health level and at the individual level could potentially diminish stigma from both a top-down and a bottom-up approach.

The results from Experiment 3 demonstrated that change targeted at individual older adults can prove effective in mitigating the stigmatizing potential of the fall prevention label. In this experiment, de-stigmatizing constructs were presented to participants in the form of an informational paragraph before the presentation of a choice between two exercise program options. The increase in selection of the fall prevention exercise class over previous findings suggested that it is possible to dampen the psychological application of stigma concepts.

Another strategy to reduce fall-related stigma could be to address the broader social environment in which stigmatizing attitudes exist. If an authority figure, such as a public health department, were to provide a blanket guideline across an entire demographic segment it is possible that the social stigma related to participation in fall prevention programming could be reduced. For example, if a guideline was set regarding the appropriateness of fall prevention programming for all older people, individual older adults would no longer be required to self-select into programming after weighing potential benefits of participation against the threat of potentially acquiring a stigmatized status. To blunt the effects of fall-related stigma for community-dwelling older adults

from both ends of the issue, addressing both the social and psychological components of stigma would be required.

Fall Prevention Practice – Bringing Back the ‘F-Word’

There is a move in some Canadian fall prevention practice settings to eliminate the use of all 'fall' language from discussions with older adults. Such circles have eliminated the 'fall prevention' label from the title and promotion of fall prevention activities. In fact, some go so far as paralleling the word 'falls' with expletive language, terming it the 'f-word'. It is difficult to find an example of another stigmatized health condition where the response from practitioners serving the condition would be to avoid speaking the name of the health issue. Imagine if health clinics refused to speak the words HIV or AIDS when promoting preventive advice or communicating treatment plans. Further, results from the current research demonstrate that there are specific sub-groups of older adults who are actually identifying with the fall label. For these reasons, the argument for terming falls and fall prevention as the 'f-word' never to be used do not stand. Doing so could have the opposite effect intended.

Removing the label from fall prevention programming could actually increase fall-related stigma experienced by older adults. Eliminating fall language would only serve to further stigmatize the topic when it is subsequently used. Removing fall language would give weight to the associated negative meanings currently associated with the topic by older adults. Eliminating fall language acknowledges that a stigma is associated. If fall language was removed, its effect would then be intensified when it was used. Falls language would then heavily convey the negative meanings and create further fear of being negatively labelled with such language among older adults. The proposed

way to break the self-fulfilling prophecy of further fall-related stigmatization is to appropriately use the term where it is intended and to address the stigmatizing potential by eliminating the social and psychological stigma at the root of the stigmatizing process altogether. For example, increasing the awareness of social stereotypes across all age categories could help fighting ageism and decrease ageist notions relating to health and abilities. Public re-education to dispel common beliefs that frailty and mental incompetence are the causes of falls could reduce stigma. Changing the social meaning of what it is to sustain a fall in older adulthood and addressing the stereotypes that make older adults hesitant about disclosing falls and entering fall prevention programming will make significant gains in reducing fall-related stigma.

Future Research

From the findings of three experiments conducted, a number of future research avenues could be pursued. One obvious area would be to continue the line of research started in Experiment 3. Findings from Experiment 3 indicated that while the informational vignettes were successful in mitigating the negative effect of the fall prevention label, the experiment was unable to distinguish any difference between the two vignette versions. Further research could be conducted to better understand the de-stigmatizing contribution made by each construct used in the statements. Such information would then allow for the development, and testing, of messaging incorporating the ideal combination of de-stigmatizing factors, thus creating another line of research.

The informational vignettes developed for Experiment 3 did not make use of persuasion tactics. Research into the application of message persuasion techniques on

fall prevention advertisement could be developed. One example within this area could be to develop gain-framed and loss-framed messages. Perhaps utilizing gain-framed messages in the promotion of fall prevention activities might result in greater persuasion for uptake of the activities by older adults.

Research into methods to reduce fall-related stigma extend beyond the practical application of uptake of prevention programming. Falls are often inquired about by and disclosed to health professionals. Strategies for reducing fall-related stigma could benefit such discussions. Perhaps details regarding the ideal combination of de-stigmatizing statements could be used by health professionals to preface their discussions with older adults regarding fall histories. Researchers utilizing retrospective recall methods could also benefit from findings on the most effective way to broach the subject. If the topic could be approached in a manner sensitive to issues such as identity threat and fear of labelling, potential stigma influencing fall reporting could be decreased or eliminated.

Findings from Experiments 2 and 3 were unable to fully capture the construct of personal suitability to fall prevention programming. Understanding how individuals determine their personal suitability would be a fruitful area of inquiry for falls research, and the findings of such work would have applications across a wide range of health contexts. In relation to fall prevention efforts, improved understanding of how older adults determine the suitability of a given program would allow program developers to target their programming and program promotion to best reach the target adult audience. Knowledge of the factors that individuals use in the determination of personal suitability could be applied to a wide range of other health promotion contexts as well.

Stigma concepts have been successfully utilized in a series of three studies to better understand older adults' fall-related attitudes and reported behaviours. The application of stigma to falls research has demonstrated that older adults' attitudes, opinions, and behaviours can, in fact, be better understood when viewed through a stigma lens. The stigma concept has value for inclusion in future falls research.

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Appendix 1: Research Ethics Approval for Research Involving Human Subjects



Office of Research Ethics

The University of Western Ontario
 Room 4180 Support Services Building, London, ON, Canada N6A 5C1
 Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca
 Website: www.uwo.ca/research/ethics

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A.W. Salmoni

Review Number: 15987S

Review Date: May 29, 2009

Revision Number: 1

Review Level: Expedited

Protocol Title: Exploring perceived and anticipated experiences of fall-related stigma in older adulthood

Department and Institution: Kinesiology, University of Western Ontario

Sponsor:

Ethics Approval Date: June 18, 2009

Expiry Date: April 30, 2010

Documents Reviewed and Approved: Revised study methods, study instruments, number of study participants and participant recruitment. Questionnaire. Letter of Information and Consent.

Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the study or consent form may be initiated without prior written approval from the NMREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the NMREB:

- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- all adverse and unexpected experiences or events that are both serious and unexpected;
- new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

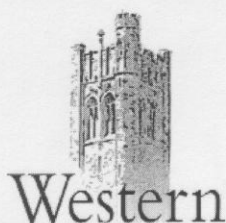
Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the NMREB.

Chair of NMREB: Dr. Jerry Paquette

Ethics Officer to Contact for Further Information			
<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Janice Sutherland (jsutherl@uwo.ca)	<input type="checkbox"/> Elizabeth Wambolt (ewambolt@uwo.ca)	<input type="checkbox"/> Denise Grafton (dgrafton@uwo.ca)

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 Website: www.uwo.ca/research/ethics

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A.W. Salmoni

Review Number: 15987S

Review Date: December 21, 2009

Revision Number: 2

Approved Local # of Participants: 264

Review Level: Expedited

Protocol Title: Exploring perceived and anticipated experiences of fall-related stigma in older adulthood

Department and Institution: Kinesiology, University of Western Ontario

Sponsor:

Ethics Approval Date: January 05, 2010

Expiry Date: April 30, 2010

Documents Reviewed and Approved: Revised number of study participants and study instruments. Letter of Information and Consent Form, Program Choice and Participation Questionnaire.

Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above referenced revision(s) or amendment(s) on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

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Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the NMREB.

Chair of NMREB: Dr. Jerry Paquette
 FDA Ref. #: IRB 0000941

Ethics Officer to Contact for Further Information

<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Janice Sutherland (jsutherl@uwo.ca)	<input type="checkbox"/> Elizabeth Wambolt (ewambolt@uwo.ca)	<input type="checkbox"/> Denise Grafton (dgrafton@uwo.ca)
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Office of Research Ethics

The University of Western Ontario
 Room 4180 Support Services Building, London, ON, Canada N6A 5C1
 Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca
 Website: www.uwo.ca/research/ethics

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. A. Salmoni

Review Number: 17101S

Review Date: June 04, 2010

Review Level: Full Board

Approved Local # of Participants: 126

Protocol Title: Message Priming and Program Selection: Older Adults' Program Preference Questionnaire

Department and Institution: Kinesiology, University of Western Ontario

Sponsor:

Ethics Approval Date: June 04, 2010

Expiry Date: October 31, 2010

Documents Reviewed and Approved: UWO Protocol, Letter of Information and Consent. Poster.

Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans and the applicable laws and regulations of Ontario has granted approval to the above named research study on the approval date noted above.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the NMREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the study or consent form may be initiated without prior written approval from the NMREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the NMREB:

- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse and unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the NMREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the NMREB.

Chair of NMREB: Dr. Jerry Paquette
 FDA Ref. #: IRB 0000941

Ethics Officer to Contact for Further Information			
<input checked="" type="checkbox"/> Grace Kelly (grace.kelly@uwo.ca)	<input type="checkbox"/> Janice Sutherland (jsuther@uwo.ca)	<input type="checkbox"/> Elizabeth Wambolt (ewambolt@uwo.ca)	<input type="checkbox"/> Denise Grafton (dgrafton@uwo.ca)

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Appendix 2: Chapter 2 Copyright Release

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INTRODUCTION

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Appendix 3: Experiment 1 Survey Material – Likelihood of Program Participation Questionnaire

One vignette versions appeared on page 2 of the survey:

Vignette Version A: Non-Label-Inducing

An Exercise Program is opening for older adults, 60 years of age and over, in your community. The program will include activities to improve balance, coordination, cardiovascular fitness, and muscular strength. The program will be offered in a group format and will take place three times each week. The components are progressive in nature, allowing participants to advance at their own pace. All ability levels are welcome. The goal of the program is to help older adults maintain their physical abilities.

Vignette Version B: Label-Inducing

A Falls Prevention Exercise Program is opening for older adults, 60 years of age and over, in your community. The program will include activities to improve balance, coordination, cardiovascular fitness, and muscular strength. The program will be offered in a group format and will take place three times each week. The components are progressive in nature, allowing participants to advance at their own pace. All ability levels are welcome. The goal of the program is to help older adults prevent falls.

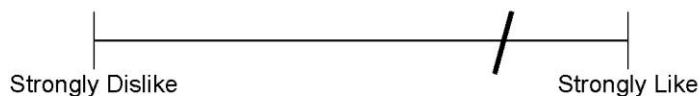
Likelihood of Program Participation Questionnaire

Thank you for agreeing to take part in this survey. We value your willingness to share your attitudes and opinions.

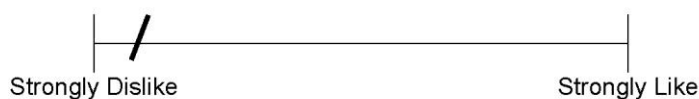
You will be asked to read a short description of a hypothetical exercise program. Please complete the questions that follow as if you were thinking about enrolling in this hypothetical program. As you complete the survey using pen on paper, you will also be asked to think-out-loud as you respond. Your thought process will be audio recorded.

For each question, please place a mark on the line corresponding to where you believe your response best fits. For example, if the question asked about your favourite colour, you would place a mark on the line in the location that you believe best describes your opinion. The example might look like this:

What is your preference for clothing that is the **colour green**?



What is your preference for clothing that is the **colour orange**?



Please note that there are no 'right' or 'wrong' answers to this questionnaire. Your honest responses are appreciated.

PART 1

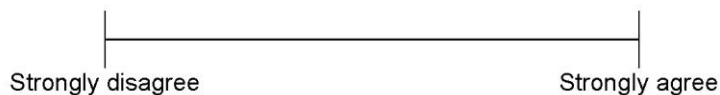
Please read the following description of a potential program. Based only on the information provided in the description, answer the questions below.

[Vignette Version A or B Inserted Here]

1. If there were no barriers to your participation (such as issues with transportation, scheduling, or cost), what is the **likelihood that you would take part** in this program?



2. This program is an appropriate activity for **you**:



3. This program is relevant to **your** physical abilities:



4. This program would be relevant to **other people your age**:

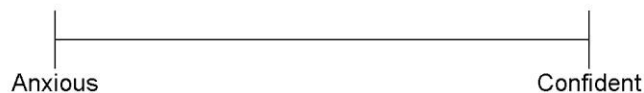
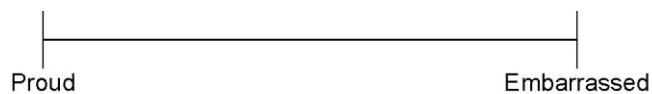


Please imagine that you are now taking part in the program described above and answer the following questions.

5. This program would provide a benefit to **your** health:



6. How would **you** feel about taking part in this program?



7. Continue to imagine you are taking part in the above program. **What would the following people think about your participation?**

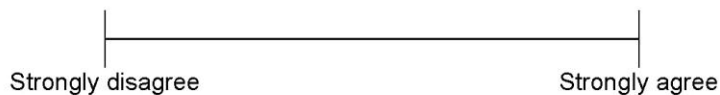
Your family would think this program is suitable for **you**:



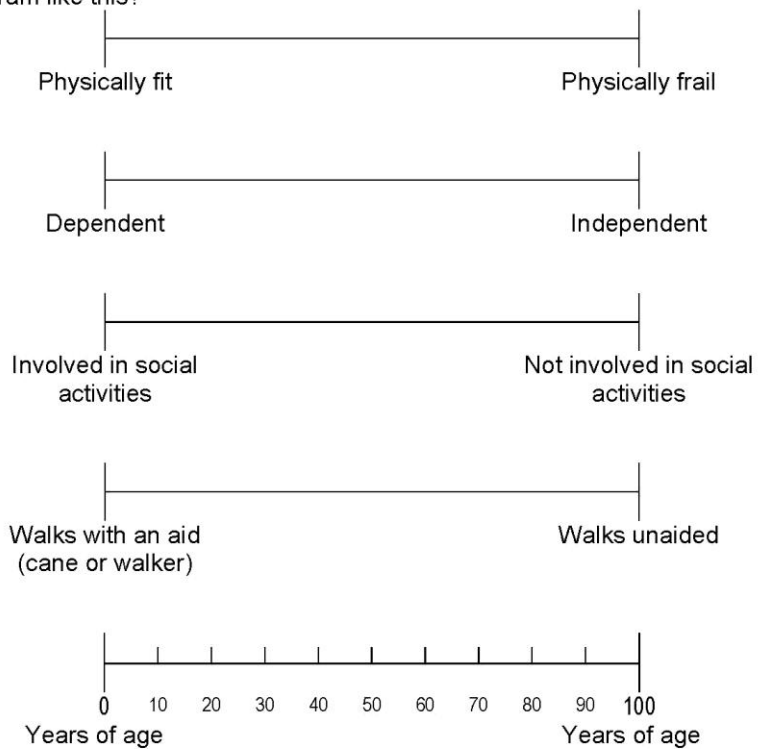
Your friends or neighbours would consider this program to be suitable for **you**:



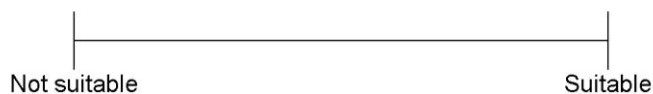
Your doctor would think this program is suitable for **you**:



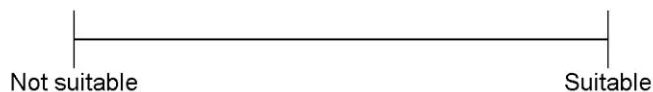
8. How would you describe a **typical** person that you would expect to see at a program like this?



9. For **older adults** in general, this program is:



10. For **you**, personally, this program is:



This marks the end of questions relating to the program description you read.

PART 2

This next section asks for your thoughts and opinions about the topic of falls among older adults.

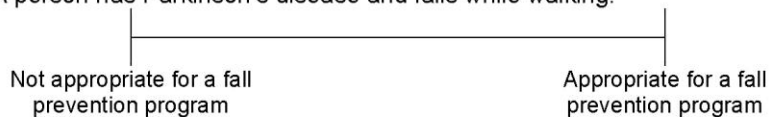
When answering these questions, please think of a fall as an unexpected event which results in a person coming to rest on the ground or other lower level.

11. What is the **most appropriate age** for older adults to join a falls prevention program? _____(please print/write)
12. Over the course of one year, **how many falls** would someone need to experience before they should attend falls prevention programming?
_____(please print/write)
13. How **appropriate** would a falls prevention program be for an individual in each of the following circumstances?

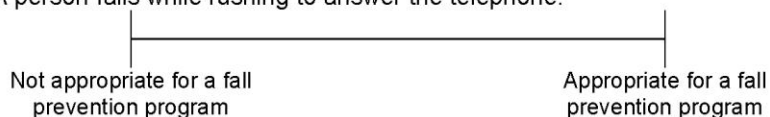
A person catches their toe by chance on an uneven piece of sidewalk and falls forward:



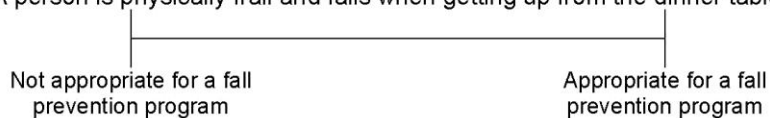
A person has Parkinson's disease and falls while walking:



A person falls while rushing to answer the telephone:



A person is physically frail and falls when getting up from the dinner table:



This is the final section of the questionnaire. Please check the boxes that best describe you.

14. What is your sex?
 Female Male
15. In what year were you born? _____
16. What is your marital status?
 Single (never married) Separated
 Married (or common law) Divorced
 Widowed
17. What is the highest level of education you have completed?
 Primary school
 Some secondary school
 Completed secondary school
 Some trade/technical school or college
 Completed trade/technical school or college diploma
 Some university
 Completed university degree
 Some graduate education
 Completed graduate degree
18. What are your current living arrangements? Do you live:
 Alone
 With your spouse or partner
 With another member of your family
 With a friend or roommate
 Other: _____
19. Generally speaking, do you usually have sufficient income to do the things you want to do? Please rate yourself on the following scale by **circling** the number that best describes your income:
- | | | | | | |
|--|---|--|---|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Not enough
income to do
the things I
want to do | Sometimes
enough income
but usually not
enough to do
the things I
want to do | Usually enough
income to do
the things I
want to do with
careful
planning | | | More than
enough income
to do the things
I want to do |

20. Do you regularly take part in physical activity?
 No
 Yes
21. Do you regularly take part in organized exercise?
 No
 Yes
22. How would you rate your risk of falling?
 High
 Moderate
 Low
23. In general, would you say your health is:
 Excellent
 Very Good
 Good
 Fair
 Poor
24. Would you describe your balance as:
 Excellent
 Very Good
 Good
 Fair
 Poor
25. Do you use anything to assist you when you walk?
 No
 Yes, What do you use to assist you? _____
26. Do you regularly take prescription medications?
 No
 Yes, How many prescription medications are you currently taking every day?

27. Do you have or have you ever had any of the following?
- | | |
|---|--|
| <input type="checkbox"/> Arthritis | <input type="checkbox"/> Breathing problems |
| <input type="checkbox"/> Chronic pain | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Dizziness or light-headedness | <input type="checkbox"/> Hearing problems |
| <input type="checkbox"/> Heart or circulatory problems | <input type="checkbox"/> High blood pressure |
| <input type="checkbox"/> Mobility problems | <input type="checkbox"/> Osteoporosis |
| <input type="checkbox"/> Reduction in muscular strength | <input type="checkbox"/> Vision problems |
| <input type="checkbox"/> Any other illness: _____ | |
28. How many times have you fallen in the past 12 months (since last summer)?
_____ (If zero, please skip to Question 31.)
29. In the past 12 months, have you sustained an injury from a fall?
- No injury → please skip to Question 31.
 - Mild injury (bruising/swelling lasting a day or two)
 - Moderate injury (extensive bruising/swelling lasting several days or a week)
 - Serious injury (sprain/fracture taking weeks or months to heal)
30. If you were injured, did you receive medical attention?
- No
 - Yes, Where did you receive your medical attention? _____
31. Do you know of a friend or neighbour who has recently experienced a fall?
- No
 - Yes

Thank you for your participation in this questionnaire!

Appendix 4: Experiment 1 Survey Response Summary Tables

Mean and Standard Deviation Scores for Continuous Variable Survey Questions ($N = 143$)

Variable	Mean (<i>SD</i>)
Q1	69.5 (29.7)
Q2	77.4 (24.2)
Q3	75.9 (24.9)
Q4	78.8 (18.8)
Q5*	84.7 (21.0)
Q6A*	76.0 (23.4)
Q6B	75.4 (25.3)
Q7A	83.7 (18.8)
Q7B	75.1 (22.4)
Q7C	82.0 (20.2)
Q8A*	52.8 (23.7)
Q8B	64.7 (24.1)
Q8C*	63.8 (26.0)
Q8D	62.4 (25.8)
Q8E	70.1 (7.6)
Q9	83.1 (15.3)
Q10	78.6 (24.2)
Q11	63.9 (9.0)
Q12	1.8 (2.5)
Q13A	59.3 (32.9)
Q13B	75.7 (25.8)
Q13C	60.6 (31.1)
Q13D	77.4 (24.5)

Frequency Counts and Corresponding Percentages for Categorical Variable Survey Questions ($N = 143$)

Variable	No. (%) [†]
Sex (Q14)	
Male	77 (53.8)
Female	66 (46.2)
Age (2009 minus Year of birth) (Q15)*	75.2 (8.8)
Marital Status (Q16)	
Single	14 (9.9)
Married	64 (45.1)
Widowed	44 (31.0)
Separated	1 (0.7)
Divorced	19 (13.4)
Education Level (Q17)	
Primary	4 (2.8)
Some secondary	14 (9.8)
Completed secondary	20 (14.0)
Some trade/technical/college	14 (9.8)
Completed trade/technical/college	23 (16.1)
Some university	24 (16.8)

Completed university	23 (16.1)
Some graduate	4 (2.8)
Completed graduate	17 (11.9)
Living Arrangement (Q18)	
Alone	79 (55.2)
With spouse/partner	61 (42.7)
With other(s)	3 (2.1)
Self-rated income (Q19)*	4.3 (1.3)
Regular Physical Activity (Q20)	
No	31 (21.7)
Yes	112 (78.3)
Regular Organized Exercise (Q21)	
No	81 (57.0)
Yes	61 (43.0)
Self-rated Risk of Falling (Q22)	
Low	77 (53.8)
Moderate	52 (36.4)
High	14 (9.8)
Self-rated Health (Q23)	
Poor	1 (0.7)
Fair	15 (10.6)
Good	59 (41.5)
Very good	47 (33.1)
Excellent	20 (14.1)
Self-Rated Balance (Q24)	
Poor	9 (6.3)
Fair	31 (21.7)
Good	51 (35.7)
Very good	36 (25.2)
Excellent	16 (11.2)
Use of Assistive Device (Q25)	
No	115 (80.4)
Yes	28 (19.6)
Use of Regular Prescription Medication (Q26)	
No	20 (14.0)
Yes	123 (86.0)
Amount*	3.6 (2.5)
Previous/Existing Health Conditions (Q27)	
Arthritis	71 (49.7)
Breathing problems	25 (17.5)
Chronic pain	23 (16.1)
Depression	13 (9.1)
Dizziness or light-headedness	34 (23.8)
Hearing problems	40 (28.0)
Heart or circulatory problems	37 (25.9)
High blood pressure	71 (49.7)
Mobility problems	17 (11.9)
Osteoporosis	34 (23.8)
Reduction in muscular strength	37 (25.9)
Vision problems	42 (29.4)
Any other illness	27 (18.9)
Previous Falls Experienced in past 12 months (Q28)	
No	105 (73.4)
Yes	38 (26.6)
Amount*	2.0 (1.4)
Injury Sustained (Q29)	

No injury	17 (45.9)
Mild injury	9 (24.3)
Moderate injury	8 (21.6)
Serious injury	3 (8.1)
Received Medical Attention (Q30)	
No	13 (59.1)
Yes	9 (40.9)
Awareness of Fall Experienced by Other(s) (Q31)	
No	64 (46.0)
Yes	75 (54.0)

Notes: * Indicates continuous variable and reports the mean (*SD*).

† Percentages may not total to 100% due to rounding errors.

Appendix 5: Experiment 2 Survey Material – Program Choice and Participation Questionnaire

Both program descriptions (counterbalanced from left to right) appeared on page 2 of the survey:

Program Description Option 1: Non-Label-Inducing

**Exercise Classes
for Older Adults**

An exercise class is opening for older adults
in your community

The goal of the program is to help older
adults maintain their physical abilities

Program Components: balance, coordination,
cardiovascular fitness, and muscular strength
exercises

Format: Group exercise 3 times each week
Ages: 60 years and over
Location: Cherryhill Community

Participants advance at their own pace.
All ability levels are welcome

**Maintain your abilities – join this
exercise program!**

Program Description Option 2: Label-Inducing

**Fall Prevention Exercise Classes
for Older Adults**

A fall prevention exercise class is opening for
older adults in your community

The goal of the program is to help older
adults prevent falls

Program Components: balance, coordination,
cardiovascular fitness, and muscular strength
exercises

Format: Group exercise 3 times each week
Ages: 60 years and over
Location: Cherryhill Community

Participants advance at their own pace.
All ability levels are welcome

**Keep yourself from falling – join this
fall prevention exercise program!**

Program Choice and Participation Questionnaire

Older Adults' Attitudes, Opinions, and Preferences Regarding Exercise

Thank you for agreeing to take part in this survey. We value your willingness to share your attitudes and opinions.

You will be asked to imagine you are deciding between attending one of two options for exercise available in your community. You will read two posters advertising possible exercise program options. Please complete the questions that follow as if you were thinking about enrolling in a program.

As you complete the survey using pen on paper, you will also be asked to think-out-loud as you respond. Your thought process will be audio recorded. When answering the survey questions, please think of a "fall" as an unexpected event which results in a person coming to rest on the ground or other lower level.

There are two types of question formats used in this survey. For each question, please indicate your response by circling the appropriate number or marking the box that best represents your response.

Please note that there are no 'right' or 'wrong' answers to this questionnaire. Your honest responses are appreciated.

PART 1 – Program Preferences

Please imagine that you have decided to take part in an exercise program offered in your community. Two programs that fit your needs are currently being offered. The programs are promoted as follows:

Option A:

[Program Description Inserted Here]

Option B:

[Program Description Inserted Here]

1. Which program would you **most prefer** to take part in?
 - Option A – [Corresponding Title Inserted Here]
 - Option B – [Corresponding Title Inserted Here]
2. a) **Why** did you select the program you did? _____

- b) Why did you **not** select the other program option? _____

3. If there were no barriers to your participation (such as issues with transportation, scheduling, or cost), what is the **likelihood that you would take part** in the program you selected?

1	2	3	4	5	6	7
Very unlikely	Unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Likely	Very likely

Please continue thinking about the program you selected above as you answer the following questions.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
4. This program would provide a benefit to your health:	1	2	3	4	5	6	7
5. This program is within your physical capabilities:	1	2	3	4	5	6	7
6. For you, personally , this program is suitable:	1	2	3	4	5	6	7
7. For older adults in general, this program is suitable:	1	2	3	4	5	6	7

8. How would **you feel** about taking part in this program?

- a) Very embarrassed
 Embarrassed
 Somewhat embarrassed
 Neutral
 Somewhat proud
 Proud
 Very Proud
- b) Very anxious
 Anxious
 Somewhat anxious
 Neutral
 Somewhat confident
 Confident
 Very confident

9. You would **willingly tell** your friends you joined this class:
- Strongly disagree
 - Disagree
 - Somewhat disagree
 - Neither disagree nor agree
 - Somewhat agree
 - Agree
 - Strongly agree
10. Please think of the typical or average person you would imagine would take part in a program like this. How **comfortable** would you be exercising with such people?
- Very uncomfortable
 - Uncomfortable
 - Somewhat uncomfortable
 - Neutral
 - Somewhat comfortable
 - Comfortable
 - Very comfortable

11. What would the following people think about your participation in this program?

- | | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|---|------------------------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| a) Your family would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) Your friends would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Your neighbours would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) Your doctor would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e) Would the opinion of any of these people cause you to change your behaviour? | | | | | | | |
| | <input type="checkbox"/> No | | | | | | |
| | <input type="checkbox"/> Yes, Who? | _____ | | | | | |

Now, refer back to the program option from page 2 that you did not select.

Please think about this non-selected program as you answer the following questions.

12. If there were no barriers to your participation (such as issues with transportation, scheduling, or cost), what is the **likelihood that you would take part?**

1	2	3	4	5	6	7
Very unlikely	Unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Likely	Very likely

- | | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|---|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| 13. This program would provide a benefit to your health: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. This program is within your physical capabilities: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. For you, personally , this program is suitable: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. For older adults in general, this program is suitable: | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

17. How would **you feel** about taking part in this program?

- a) Very embarrassed
 Embarrassed
 Somewhat embarrassed
 Neutral
 Somewhat proud
 Proud
 Very Proud
- b) Very anxious
 Anxious
 Somewhat anxious
 Neutral
 Somewhat confident
 Confident
 Very confident

18. You would **willingly tell** your friends you joined this class:
- Strongly disagree
 - Disagree
 - Somewhat disagree
 - Neither disagree nor agree
 - Somewhat agree
 - Agree
 - Strongly agree
19. Please think of the typical or average person you would imagine would take part in a program like this. How **comfortable** would you be exercising with such people?
- Very uncomfortable
 - Uncomfortable
 - Somewhat uncomfortable
 - Neutral
 - Somewhat comfortable
 - Comfortable
 - Very comfortable
20. What would the following people think about your participation in this program?

- | | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|---|--|----------|-------------------|----------------------------|----------------|-------|----------------|
| a) Your family would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) Your friends would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) Your neighbours would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) Your doctor would think this program is suitable for you : | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e) Would the opinion of any of these people cause you to change your behaviour? | | | | | | | |
| | <input type="checkbox"/> No | | | | | | |
| | <input type="checkbox"/> Yes, Who? _____ | | | | | | |

This marks the end of questions related to the two program options described above.

PART 2 – Attitudes and Opinions

21. Please imagine that you have the following health issues listed in turn below. Would you prefer to take part in an exercise program specifically designed for the health issue or a general exercise program where people would not know your motivations for joining?
- a) If you had arthritis, which exercise class would you prefer?
 - Arthritis exercise class
 - General exercise class
 - b) If you were obese, which exercise class would you prefer?
 - Exercise class for people with obesity
 - General exercise class
 - c) If you sustained a recent fall, which exercise class would you prefer?
 - Fall prevention exercise class
 - General exercise class
 - d) If you had high blood pressure, which exercise class would you prefer?
 - Exercise class for people with high blood pressure
 - General exercise class
22. What **type** of fall prevention exercise program would you **most** prefer?
- A brochure with pictures showing you how to complete various exercises on your own at home
 - Having an exercise trainer come to your home to complete an at-home program
 - Attending a program at a fitness centre
 - Attending a program at a community centre
23. If you were going to attend a group fall prevention program, what do you feel would be the **ideal characteristics** of the program?
- a) Advertised for people over age 40
 Advertised for people over age 60
 - b) Advertised for all older adults
 Advertised specifically for people who have fallen
 - c) Held in a location that offers those attending privacy
 Held in a location that is visible to onlookers
 - d) What **other** program characteristics would be important to you?
-
-

For this next section, please imagine that you have fallen two times in the past month as you answer the following questions.

24. How comfortable would you be with the following people knowing about your falls?

	Very uncomfortable	Uncomfortable	Somewhat uncomfortable	Neutral	Somewhat comfortable	Comfortable	Very comfortable
a) An adult child:	1	2	3	4	5	6	7
b) Your spouse:	1	2	3	4	5	6	7
c) A friend:	1	2	3	4	5	6	7
d) A neighbour:	1	2	3	4	5	6	7
e) Your doctor:	1	2	3	4	5	6	7
f) Another health care professional:	1	2	3	4	5	6	7

25. What is the likelihood that you would disclose a fall in the following situations?

	Very unlikely	Unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Likely	Very likely
a) If directly asked about it by your doctor:	1	2	3	4	5	6	7
b) At a health care appointment, but when the subject was not brought up by your doctor:	1	2	3	4	5	6	7
c) In a related conversation with a family member:	1	2	3	4	5	6	7
d) In a casual conversation with a family member:	1	2	3	4	5	6	7
e) In a group conversation with family:	1	2	3	4	5	6	7
f) In a related conversation with a friend/neighbour:	1	2	3	4	5	6	7
g) In a casual conversation with a friend/neighbour:	1	2	3	4	5	6	7
h) In a group conversation with friends:	1	2	3	4	5	6	7

26. Would you be concerned that people would think of you differently if they knew about your fall? Please rate your level of agreement with each of the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
a) If people knew you fell, they would assume you are frail:	1	2	3	4	5	6	7
b) If people knew you fell, they would be more likely to offer you assistance with transportation:	1	2	3	4	5	6	7
c) If people knew you fell, they would think your health was declining:	1	2	3	4	5	6	7
d) If people knew you fell, they would assume you were getting 'old':	1	2	3	4	5	6	7
e) If people knew you fell, they would offer you sympathy and encourage you to be more careful:	1	2	3	4	5	6	7
f) If people knew you fell, they would question your ability to live on your own independently:	1	2	3	4	5	6	7
g) If people knew you fell, they would question your mental abilities:	1	2	3	4	5	6	7
h) If people knew you fell, they would be more likely to assist you with your groceries and errands:	1	2	3	4	5	6	7

This is the final section of the questionnaire. Please check the boxes that best describe you.

27. What is your sex?
 Female Male
28. In what year were you born? _____
29. What is your marital status?
 Single (never married) Separated
 Married (or common law) Divorced
 Widowed
30. What is the highest level of education you have completed?
 Primary school
 Some secondary school
 Completed secondary school
 Some trade/technical school or college
 Completed trade/technical school or college diploma
 Some university
 Completed university degree
 Some graduate education
 Completed graduate degree
31. What are your current living arrangements? Do you live:
 Alone
 With your spouse or partner
 With another member of your family
 With a friend or roommate
 Other: _____
32. Generally speaking, do you usually have sufficient income to do the things you want to do? Please rate yourself on the following scale by **circling** the number that best describes your income:
- | | | | | | |
|--|---|---|--|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Not enough
income to do
the things I
want to do | | Sometimes
enough income
but usually not
enough to do
the things I
want to do | Usually enough
income to do
the things I
want to do with
careful
planning | | More than
enough income
to do the things
I want to do |

33. Do you regularly take part in physical activity?
 No
 Yes
34. Do you regularly take part in organized exercise?
 No
 Yes
35. How would you rate your risk of falling?
 High
 Moderate
 Low
36. In general, would you say your health is:
 Excellent
 Very Good
 Good
 Fair
 Poor
37. Would you describe your balance as:
 Excellent
 Very Good
 Good
 Fair
 Poor
38. Do you use anything to assist you when you walk?
 No
 Yes, What do you use to assist you? _____
39. Do you regularly take prescription medications?
 No
 Yes, How many prescription medications are you currently taking every day? _____

40. Do you have or have you ever had any of the following?
- | | |
|---|--|
| <input type="checkbox"/> Arthritis | <input type="checkbox"/> Breathing problems |
| <input type="checkbox"/> Chronic pain | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Dizziness or light-headedness | <input type="checkbox"/> Hearing problems |
| <input type="checkbox"/> Heart or circulatory problems | <input type="checkbox"/> High blood pressure |
| <input type="checkbox"/> Mobility problems | <input type="checkbox"/> Osteoporosis |
| <input type="checkbox"/> Reduction in muscular strength | <input type="checkbox"/> Vision problems |
| <input type="checkbox"/> Any other illness: _____ | |
41. How many times have you fallen in the past 12 months (since last Christmas)?
_____ (Please write/print the number of falls. If zero, please skip to Question 44.)
42. In the past 12 months, have you sustained an injury from a fall?
- No injury → please skip to Question 44.
 - Mild injury (bruising/swelling lasting a day or two)
 - Moderate injury (extensive bruising/swelling lasting several days or a week)
 - Serious injury (sprain/fracture taking weeks or months to heal)
43. If you were injured, did you receive medical attention?
- No
 - Yes, Where did you receive your medical attention? _____
44. Would you consider yourself a 'faller'?
- No
 - Yes
45. Do you know of a friend or neighbour who has recently experienced a fall?
- No
 - Yes

Thank you for your participation in this questionnaire!

Appendix 6: Experiment 2 Survey Response Summary Tables

Mean and Standard Deviation Scores for Continuous Variable Survey Questions

Variable	Program Choice 0 – Exercise (n = 94)	Program Choice 1 – FPP (n = 24)	Total (N = 118)
Q1	0.0 ± 0	1.0 ± 0	.2 ± .4
Q3	6.0 ± 1.3	5.1 ± 1.8	5.8 ± 1.4
Q4	6.5 ± .8	6.2 ± .7	6.4 ± .8
Q5	6.3 ± 1.0	5.8 ± 1.1	6.2 ± 1.1
Q6	6.3 ± 1.1	5.5 ± 1.4	6.1 ± 1.2
Q7	6.2 ± .9	6.0 ± .9	6.2 ± .9
Q8a	5.2 ± 1.3	5.0 ± 1.4	5.2 ± 1.3
Q8b	5.6 ± 1.2	5.4 ± 1.6	5.6 ± 1.3
Q9	6.2 ± .9	6.1 ± 1.0	6.1 ± .9
Q10	5.9 ± 1.1	5.8 ± 1.6	5.9 ± 1.2
Q11a	6.2 ± 1.0	6.2 ± 1.1	6.2 ± 1.0
Q11b	6.1 ± .9	5.9 ± 1.2	6.1 ± 1.0
Q11c	5.9 ± 1.2	5.6 ± 1.3	5.8 ± 1.2
Q11d	6.6 ± .6	6.3 ± .8	6.5 ± .7
Q11e	.1 ± .3	.1 ± .3	.1 ± .3
Q12	4.1 ± 2.0	5.4 ± 1.8	4.4 ± 2.0
Q13	5.6 ± 1.4	6.5 ± .7	5.7 ± 1.4
Q14	6.2 ± 1.0	6.1 ± 1.3	6.2 ± 1.1
Q15	4.9 ± 1.8	6.0 ± 1.5	5.1 ± 1.8
Q16	5.8 ± 1.2	6.1 ± 1.3	5.8 ± 1.2
Q17a	4.5 ± 1.1	5.0 ± 1.5	4.6 ± 1.2
Q17b	4.9 ± 1.2	5.5 ± 1.3	5.0 ± 1.3
Q18	5.4 ± 1.4	6.6 ± .5	5.6 ± 1.4
Q19	5.1 ± 1.4	6.2 ± 1.3	5.3 ± 1.4
Q20a	5.1 ± 1.6	6.3 ± 1.4	5.4 ± 1.6
Q20b	5.0 ± 1.5	5.9 ± 1.5	5.2 ± 1.5
Q20c	4.9 ± 1.4	5.5 ± 1.7	5.0 ± 1.5
Q20d	5.6 ± 1.5	6.6 ± .7	5.7 ± 1.5
Q20e	.1 ± .3	.1 ± .3	.1 ± .3
Q21a	.6 ± .5	.8 ± .4	.6 ± .5
Q21b	.6 ± .5	.5 ± .5	.6 ± .5
Q21c	.5 ± .5	.9 ± .3	.6 ± .5
Q21d	.6 ± .5	.7 ± .5	.6 ± .5
Q22	3.0 ± 1.2	3.1 ± 1.1	3.0 ± 1.1
Q23a	1.8 ± .4	1.8 ± .4	1.8 ± .4
Q23b	1.3 ± .5	1.3 ± .5	1.3 ± .5
Q23c	1.3 ± .5	1.3 ± .5	1.3 ± .5
Q24a	5.5 ± 1.7	5.5 ± 1.8	5.5 ± 1.7
Q24b	6.1 ± 1.4	6.2 ± 1.4	6.1 ± 1.4
Q24c	5.5 ± 1.5	5.4 ± 1.8	5.5 ± 1.6
Q24d	5.0 ± 1.7	5.1 ± 1.7	5.0 ± 1.7
Q24e	6.2 ± 1.3	6.1 ± 1.4	6.2 ± 1.3
Q24f	6.2 ± 1.2	6.0 ± 1.4	6.2 ± 1.2
Q25a	6.7 ± .8	6.7 ± 1.1	6.7 ± .8
Q25b	5.7 ± 1.6	6.3 ± 1.5	5.8 ± 1.6
Q25c	5.9 ± 1.4	6.1 ± 1.3	5.9 ± 1.4

Q25d	5.4 ±1.4	5.6 ±1.6	5.5 ±1.5
Q25e	5.1 ±1.7	5.2 ±1.9	5.1 ±1.7
Q25f	4.7 ±1.8	5.1 ±1.3	4.8 ±1.7
Q25g	4.2 ±1.7	4.4 ±2.0	4.3 ±1.8
Q25h	4.6 ±1.7	4.4 ±2.0	4.6 ±1.8
Q26a	3.9 ±1.7	3.1 ±1.6	3.8 ±1.7
Q26b	4.7 ±1.5	4.7 ±1.6	4.7 ±1.5
Q26c	4.3 ±1.8	3.5 ±1.7	4.1 ±1.8
Q26d	4.6 ±1.8	4.3 ±1.9	4.6 ±1.8
Q26e	5.0 ±1.5	4.8 ±1.7	4.9 ±1.6
Q26f	3.7 ±1.9	3.0 ±1.8	3.5 ±1.9
Q26g	3.1 ±1.9	2.6 ±1.6	3.0 ±1.9
Q26h	4.2 ±1.7	4.9 ±1.8	4.4 ±1.8

Frequency Counts and Corresponding Percentages for Categorical Variable Survey Questions ($N = 118$)

Variable	No. (%) [†]
Program Choice (Q1)	
Exercise class for older adults	94 (79.3)
Fall prevention exercise class for older adults	24 (20.7)
Preferred Exercise Class – Arthritis (Q21a)	
Labelled exercise class	41 (36.6)
General exercise class	71 (63.4)
Preferred Exercise Class – Osteoporosis (Q21b)	
Labelled exercise class	51 (45.1)
General exercise class	62 (54.9)
Preferred Exercise Class – Fall Prevention (Q21c)	
Labelled exercise class	44 (38.9)
General exercise class	69 (61.1)
Preferred Exercise Class – High Blood Pressure (Q21d)	
Labelled exercise class	48 (41.7)
General exercise class	67 (58.3)
Preferred Type of Fall Prevention Exercise Program (Q22)	
Brochure at home	21 (18.4)
Trainer at home	13 (11.4)
Program at fitness centre	28 (24.6)
Program at community centre	52 (45.6)
Ideal Program Characteristics (Q23)	
Advertised over 40 years	19 (17.4)
Advertised over 60 years	90 (82.6)
Advertised for all older adults	78 (70.3)
Advertised specifically for those who had fallen	33 (29.7)
Held in location offering privacy	74 (69.8)
Held in location visible to onlookers	32 (30.2)
Sex (Q27)	
Male	52 (44.1)
Female	66 (55.9)
Age (2010 minus Year of birth) (Q28)*	74.8 ±8.4
Marital Status (Q29)	
Single	7 (5.9)
Married	73 (61.9)
Widowed	25 (21.2)
Separated	2 (1.7)

Divorced	11 (9.3)
Education Level (Q30)	
Primary	1 (.8)
Some secondary	22 (18.6)
Completed secondary	7 (5.9)
Some trade/technical/college	14 (11.9)
Completed trade/technical/college	20 (16.9)
Some university	15 (12.7)
Completed university	18 (15.3)
Some graduate	4 (3.4)
Completed graduate	17 (14.4)
Living Arrangement (Q31)	
Alone	44 (37.3)
With spouse/partner	70 (59.3)
With other(s)	4 (3.4)
Self-rated income (Q32)*	4.2 ±1.4
Regular Physical Activity (Q33)	
No	16 (13.6)
Yes	102 (86.4)
Regular Organized Exercise (Q34)	
No	49 (41.5)
Yes	69 (58.5)
Self-rated Risk of Falling (Q35)	
Low	77 (65.3)
Moderate	37 (31.4)
High	4 (3.4)
Self-rated Health (Q36)	
Poor	1 (.8)
Fair	13 (11.0)
Good	26 (22.0)
Very good	54 (45.8)
Excellent	24 (20.3)
Self-Rated Balance (Q37)	
Poor	2 (1.7)
Fair	17 (14.5)
Good	38 (32.5)
Very good	40 (34.2)
Excellent	20 (17.1)
Use of Assistive Device (Q38)	
No	106 (89.8)
Yes	12 (10.2)
Use of Regular Prescription Medication (Q39)	
No	21 (17.8)
Yes	97 (82.2)
Amount*	2.7 ±2.5
Previous/Existing Health Conditions (Q40)	
Arthritis	55 (46.6)
Breathing problems	18 (15.3)
Chronic pain	18 (15.3)
Depression	25 (21.2)
Dizziness or light-headedness	15 (12.7)
Hearing problems	34 (28.8)
Heart or circulatory problems	18 (15.3)
High blood pressure	15 (12.7)
Mobility problems	25 (21.2)
Osteoporosis	45 (38.1)

Reduction in muscular strength	16 (13.6)
Vision problems	19 (16.1)
Any other illness	26 (22.0)
Previous Falls Experienced in past 12 months (Q41)	
No	92 (78.0)
Yes	26 (22.0)
Amount*	.3 ±.6
Injury Sustained (Q42)	
No injury	12 (46.2)
Mild injury	7 (26.9)
Moderate injury	4 (15.4)
Serious injury	3 (11.5)
Received Medical Attention (Q43)	
No	9 (64.3)
Yes	5 (35.7)
Considers self a 'faller' (Q44)	
No	113 (96.6)
Yes	4 (34.5)
Awareness of Fall Experienced by Other(s) (Q45)	
No	55 (47.0)
Yes	62 (53.0)

Notes: * Indicates continuous variable and reports the mean ±SD.

† Percentages may not total to 100% due to rounding errors.

Appendix 7: Experiment 3 Survey Material – Program Preference Questionnaire

One of the following vignette versions appeared in paragraph form on page 2 of the Program Preference Questionnaire

Version A

Constructs include: normalizing the topic, personal suitability, and perceived benefit

- Falls occur at every point in the lifespan; from childhood to young adulthood through to older adulthood we all fall (normalizing)
- Everyone experiences a fall at some point in life, so fall prevention programs are suitable for all older adults (personal suitability)
- Individuals looking to improve their abilities and those with high levels of physical fitness would both be suitable program participants and would benefit from fall prevention activities (perceived benefit and suitability)

Version B

Constructs include: normalizing the topic, affect, willingness to tell, attribution of cause, personal risk, personal suitability, balance, and perceived benefit

- Falls occur at every point in the lifespan; from childhood to young adulthood through to older adulthood we all fall (normalizing)
- As everyone has experienced a fall at some point in life, it should not be viewed as an embarrassing topic that older adults are unwilling to talk about (affect, willingness to tell)
- Falls can take place in many settings and are experienced both by people with high and low personal risk of falling (personal risk)
- Falls can occur for a variety of reasons including tripping over objects, rushing, underlying health conditions, and many other causes (attribution of cause)
- Individuals looking to improve their balance and abilities and those with high levels of physical fitness would both be suitable program participants and would benefit from fall prevention activities (balance, perceived benefit, and suitability)

Both program descriptions (counterbalanced from left to right) appeared on page 2 of the survey:

Program Description Option 1: Non-Label-Inducing

**Exercise Classes
for Older Adults**

An exercise class is opening for older adults
in your community

The goal of the program is to help older
adults maintain their physical abilities

Program Components: balance, coordination,
cardiovascular fitness, and muscular strength
exercises

Format: Group exercise 3 times each week
Ages: 60 years and over
Location: Cherryhill Community

Participants advance at their own pace.
All ability levels are welcome

**Maintain your abilities – join this
exercise program!**

Program Description Option 2: Label-Inducing

**Fall Prevention Exercise Classes
for Older Adults**

A fall prevention exercise class is opening for
older adults in your community

The goal of the program is to help older
adults prevent falls

Program Components: balance, coordination,
cardiovascular fitness, and muscular strength
exercises

Format: Group exercise 3 times each week
Ages: 60 years and over
Location: Cherryhill Community

Participants advance at their own pace.
All ability levels are welcome

**Keep yourself from falling – join this
fall prevention exercise program!**

Program Preference Questionnaire

Older Adults' Attitudes, Opinions, and Exercise Program Selection

Thank you for agreeing to take part in this survey. We value your willingness to share your attitudes and opinions.

You will be asked to imagine you are deciding between attending one of two options for exercise available in your community. You will read two posters advertising possible exercise program options. Please complete the questions that follow as if you were thinking about enrolling in a program.

As you complete the survey using pen on paper, you will also be asked to think-out-loud as you respond. Your thought process will be audio recorded. When answering the survey questions, please think of a "fall" as an unexpected event which results in a person coming to rest on the ground or other lower level.

There are two types of question formats used in this survey. For each question, please indicate your response by circling the appropriate number or marking the box that best represents your response.

Please note that there are no 'right' or 'wrong' answers to this questionnaire. Your honest responses are appreciated.

PART 1 – Program Preferences

Please read the following information in preparation for answering the first section of questions:

[Vignette Version A or B Inserted Here]

Please imagine that you have decided to take part in an exercise program offered in your community. Two programs that fit your needs are currently being offered. The programs are promoted as follows:

Option A:

[Program Description Inserted Here]

Option B:

[Program Description Inserted Here]

1. Which program would you **most prefer** to take part in?
 - Option A – [Corresponding Title Inserted Here]
 - Option B – [Corresponding Title Inserted Here]

2. a) **Why** did you select the program you did? _____

- b) Why did you **not** select the other program option? _____

3. If there were no barriers to your participation (such as issues with transportation, scheduling, or cost), what is the **likelihood that you would take part** in the program you selected?
- | | | | | | | |
|---------------|----------|-------------------|-----------------------------|-----------------|--------|-------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Very unlikely | Unlikely | Somewhat unlikely | Neither likely nor unlikely | Somewhat likely | Likely | Very likely |

Please continue thinking about the program you selected above as you answer the following questions.

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
4. This program would provide a benefit to your health:	1	2	3	4	5	6	7	
5. This program is within your physical capabilities:	1	2	3	4	5	6	7	
6. For you, personally , this program is suitable:	1	2	3	4	5	6	7	
7. For older adults in general, this program is suitable:	1	2	3	4	5	6	7	

8. How would **you feel** about taking part in this program? (please answer both)
- a) Very embarrassed
 Embarrassed
 Somewhat embarrassed
 Neutral
 Somewhat proud
 Proud
 Very Proud
- b) Very anxious
 Anxious
 Somewhat anxious
 Neutral
 Somewhat confident
 Confident
 Very confident
9. You would **willingly tell** your friends you joined this class:
- Strongly disagree
 Disagree
 Somewhat disagree
 Neither disagree nor agree
 Somewhat agree
 Agree
 Strongly agree
10. Please think of the typical or average person you would imagine would take part in a program like this. How **comfortable** would you be exercising with such people?
- Very uncomfortable
 Uncomfortable
 Somewhat uncomfortable
 Neutral
 Somewhat comfortable
 Comfortable
 Very comfortable

Now, refer back to the program option from page 2 that you did not select. Please think about this non-selected program as you answer the following questions.

11. If there were no barriers to your participation (such as issues with transportation, scheduling, or cost), what is the **likelihood that you would take part?**

1	2	3	4	5	6	7
Very unlikely	Unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Likely	Very likely

Please continue thinking about the alternate program from page 2 as you answer the following questions.

- | | | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|---|-------------------|----------|-------------------|----------------------------|----------------|-------|----------------|
| 12. This program would provide a benefit to your health: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 13. This program is within your physical capabilities: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 14. For you, personally , this program is suitable: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 15. For older adults in general, this program is suitable: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
16. How would **you feel** about taking part in this program? (please answer both)
- a) Very embarrassed
 Embarrassed
 Somewhat embarrassed
 Neutral
 Somewhat proud
 Proud
 Very Proud
- b) Very anxious
 Anxious
 Somewhat anxious
 Neutral
 Somewhat confident
 Confident
 Very confident

17. You would **willingly tell** your friends you joined this class:
- Strongly disagree
 - Disagree
 - Somewhat disagree
 - Neither disagree nor agree
 - Somewhat agree
 - Agree
 - Strongly agree
18. Please think of the typical or average person you would imagine would take part in a program like this. How **comfortable** would you be exercising with such people?
- Very uncomfortable
 - Uncomfortable
 - Somewhat uncomfortable
 - Neutral
 - Somewhat comfortable
 - Comfortable
 - Very comfortable

This marks the end of questions related to the two program options described above.

PART 2 – Attitudes and Opinions Regarding Falls in Older Adulthood

19. The topic of falls can bring to mind different ideas for different people. In your opinion, what does a fall signal?

20. Is there a time in life when experiencing a fall would be a greater concern to you?

No

Yes, When? _____

21. Please think about the typical or average person you would expect to see at a fall prevention class. How would you describe that person? What attributes would best describe him/her?

22. Please rate your level of agreement with each of the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
a) Falls are often caused by rushing:	1	2	3	4	5	6	7
b) Falls are often caused by not paying attention:	1	2	3	4	5	6	7
c) Falls take place because people are physically frail:	1	2	3	4	5	6	7
d) Falls result in a loss of independence:	1	2	3	4	5	6	7
e) Falls are a sign that an older person needs to make changes to address the cause of the fall:	1	2	3	4	5	6	7
f) Falls often result in older people moving out of their own homes or apartments:	1	2	3	4	5	6	7

This is the final section of the questionnaire. Please check the boxes that best describe you.

23. What is your sex?
 Female Male
24. In what year were you born? _____
25. What is your marital status?
 Single (never married) Separated
 Married (or common law) Divorced
 Widowed
26. What is the highest level of education you have completed?
 Primary school
 Some secondary school
 Completed secondary school
 Some trade/technical school or college
 Completed trade/technical school or college diploma
 Some university
 Completed university degree
 Some graduate education
 Completed graduate degree
27. What are your current living arrangements? Do you live:
 Alone
 With your spouse or partner
 With another member of your family
 With a friend or roommate
 Other: _____
28. Generally speaking, do you usually have sufficient income to do the things you want to do? Please rate yourself on the following scale by **circling** the number that best describes your income:
- | | | | | | |
|--|---|---|--|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Not enough
income to do
the things I
want to do | | Sometimes
enough income
but usually not
enough to do
the things I
want to do | Usually enough
income to do
the things I
want to do with
careful
planning | | More than
enough income
to do the things
I want to do |

29. Do you regularly take part in physical activity?
 No
 Yes
30. Do you regularly take part in organized exercise?
 No
 Yes
31. How would you rate your risk of falling?
 High
 Moderate
 Low
32. In general, would you say your health is:
 Excellent
 Very Good
 Good
 Fair
 Poor
33. Would you describe your balance as:
 Excellent
 Very Good
 Good
 Fair
 Poor
34. How afraid are you of falling?
 Extremely
 Very
 Somewhat
 Slightly
 Not at all
35. Do you use anything to assist you when you walk?
 No
 Yes, What do you use to assist you? _____
36. Do you regularly take prescription medications?
 No
 Yes, How many prescription medications are you currently taking every day? _____

37. Do you have or have you ever had any of the following?
- | | |
|---|---|
| <input type="checkbox"/> Arthritis | <input type="checkbox"/> Breathing problems |
| <input type="checkbox"/> Chronic pain | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Dizziness or light-headedness |
| <input type="checkbox"/> Hearing problems | <input type="checkbox"/> Heart or circulatory problems |
| <input type="checkbox"/> High blood pressure | <input type="checkbox"/> Mobility problems |
| <input type="checkbox"/> Osteoporosis | <input type="checkbox"/> Reduction in muscular strength |
| <input type="checkbox"/> Vision problems | |
| <input type="checkbox"/> Any other illness: _____ | |
38. How many times have you fallen in the **past 3 months** (April to June of this year)? _____ (If zero, please skip to Question 41.)
39. In the **past 3 months**, have you sustained an injury from a fall?
- No injury → please skip to Question 41.
 - Mild injury (bruising/swelling lasting a day or two)
 - Moderate injury (extensive bruising/swelling lasting several days or a week)
 - Serious injury (sprain/fracture taking weeks or months to heal)
40. If you were injured, did you receive medical attention?
- No
 - Yes, Where did you receive your medical attention? _____
41. Now, please think of the **9 months prior** to that. Thinking about the time period from July 2009 to March of this year, how many times have you fallen?
_____ (If zero, please skip to Question 44.)
42. In those **9 months**, had you sustained an injury from a fall?
- No injury → please skip to Question 44.
 - Mild injury (bruising/swelling lasting a day or two)
 - Moderate injury (extensive bruising/swelling lasting several days or a week)
 - Serious injury (sprain/fracture taking weeks or months to heal)
43. If you were injured, did you receive medical attention?
- No
 - Yes, Where did you receive your medical attention? _____
44. Do you know of a friend or neighbour who has recently experienced a fall?
- No
 - Yes

Thank you for your participation in this questionnaire!

Appendix 8: Experiment 3 Survey Response Summary Tables

Mean and Standard Deviation Scores for Continuous Variable Survey Questions

Variable	Vignette A – 3 construct strength (<i>n</i> = 54)	Vignette B – 8 construct strength (<i>n</i> = 54)	Total (<i>N</i> = 108)
Q1	.5 ±.5	.4 ±.5	.4 ±.5
Q3	4.7 ±2.1	5.1 ±1.8	4.9 ±1.9
Q4	6.1 ±.9	6.0 ±.8	6.1 ±.9
Q5	5.8 ±1.2	5.9 ±1.5	5.9 ±1.3
Q6	5.5 ±1.4	5.6 ±1.6	5.6 ±1.5
Q7	6.0 ±1.1	5.9 ±1.1	5.9 ±1.1
Q8a	5.0 ±1.4	4.6 ±1.3	4.8 ±1.4
Q8b	5.0 ±1.4	5.1 ±1.6	5.1 ±1.5
Q9	5.8 ±1.0	5.7 ±1.3	5.8 ±1.2
Q10	5.5 ±1.3	5.3 ±1.6	5.4 ±1.5
Q11	4.7 ±2.1	4.7 ±2.0	4.7 ±2.1
Q12	5.9 ±1.1	6.0 ±.8	5.9 ±1.0
Q13	6.1 ±1.0	6.0 ±1.3	6.0 ±1.1
Q14	5.3 ±1.6	5.3 ±1.5	5.3 ±1.6
Q15	6.1 ±1.2	6.0 ±1.0	6.0 ±1.1
Q16a	4.7 ±1.3	4.6 ±1.2	4.6 ±1.2
Q16b	5.0 ±1.4	4.9 ±1.7	4.9 ±1.5
Q17	5.5 ±1.4	5.8 ±1.2	5.6 ±1.3
Q18	5.5 ±1.3	5.3 ±1.5	5.4 ±1.4
Q20	.8 ±.4	.8 ±.4	.8 ±.4
Q22a	5.4 ±1.5	5.8 ±1.1	5.6 ±1.3
Q22b	5.9 ±1.3	5.9 ±1.1	5.9 ±1.2
Q22c	5.4 ±1.6	5.5 ±1.5	5.4 ±1.6
Q22d	5.6 ±1.6	5.8 ±1.3	5.7 ±1.4
Q22e	5.8 ±1.6	5.9 ±1.2	5.9 ±1.4
Q22f	5.2 ±1.7	5.0 ±1.8	5.1 ±1.7

Table 1 [no punctuation APA]
Frequency Counts and Corresponding Percentages for Categorical Variable Survey Questions (*N* = 108)

Variable	No. (%) [†]
Program Choice (Q1)	
Exercise class for older adults	64 (59.3)
Fall prevention exercise class for older adults	44 (40.7)
Sex (Q23)	
Male	54 (50.0)
Female	54 (50.0)
Age (2010 minus Year of birth) (Q24)*	75.3 ±9.4
Marital Status (Q25)	
Single	12 (11.2)
Married	47 (43.9)

Widowed	35 (32.7)
Separated	2 (1.9)
Divorced	11 (10.3)
Education Level (Q26)	
Primary	3 (2.8)
Some secondary	19 (17.6)
Completed secondary	11 (10.2)
Some trade/technical/college	15 (13.9)
Completed trade/technical/college	15 (13.9)
Some university	15 (13.9)
Completed university	17 (15.7)
Some graduate	4 (3.7)
Completed graduate	9 (8.3)
Living Arrangement (Q27)	
Alone	54 (50.0)
With spouse/partner	47 (43.5)
With other(s)	7 (6.5)
Self-rated income (Q28)*	4.1 ±1.4
Regular Physical Activity (Q29)	
No	27 (25.0)
Yes	81 (75.0)
Regular Organized Exercise (Q30)	
No	59 (54.6)
Yes	49 (45.4)
Self-rated Risk of Falling (Q31)	
Low	55 (51.9)
Moderate	42 (39.6)
High	9 (8.5)
Self-rated Health (Q32)	
Poor	3 (2.8)
Fair	11 (10.2)
Good	36 (33.3)
Very good	41 (38.0)
Excellent	17 (15.7)
Self-Rated Balance (Q33)	
Poor	7 (6.5)
Fair	25 (23.1)
Good	33 (30.6)
Very good	31 (28.7)
Excellent	12 (11.1)
Fear of Falling (Q34)	
Not at all	29 (27.1)
Slightly	28 (26.2)
Somewhat	33 (30.8)
Very	13 (12.1)
Extremely	4 (3.7)
Use of Assistive Device (Q35)	
No	90 (83.3)
Yes	18 (16.7)
Use of Regular Prescription Medication (Q36)	
No	22 (20.4)
Yes	86 (79.6)
Amount*	3.1 ±2.4
Previous/Existing Health Conditions (% yes) (Q37)	
Arthritis	48 (44.4)
Breathing problems	15 (13.9)

Chronic pain	18 (16.7)
Depression	29 (26.9)
Diabetes	59 (54.6)
Dizziness or light-headedness	13 (12.0)
Hearing problems	23 (21.3)
Heart or circulatory problems	16 (14.8)
High blood pressure	14 (13.0)
Mobility problems	18 (16.7)
Osteoporosis	33 (30.6)
Reduction in muscular strength	15 (13.9)
Vision problems	30 (27.8)
Any other illness	19 (17.6)
Previous Falls Experienced in past 3 months (Q38)	
No	92 (85.2)
Yes	16 (14.8)
Amount*	.3 ±1.0
Injury Sustained (p3mo) (Q39)	
No injury	10 (62.5)
Mild injury	4 (25.0)
Moderate injury	1 (6.2)
Serious injury	1 (6.2)
Received Medical Attention (p3mo) (Q40)	
No	3 (50.0)
Yes	3 (50.0)
Previous Falls Experienced in 9 months prior (Q41)	
No	74 (68.5)
Yes	34 (31.5)
Amount*	.2 ±.4
Injury Sustained (p9mo) (Q42)	
No injury	15 (44.1)
Mild injury	7 (20.6)
Moderate injury	9 (26.5)
Serious injury	3 (8.8)
Received Medical Attention (p9mo) (Q43)	
No	9 (47.4)
Yes	10 (52.6)
Total Fall History (p12mo)	
No Fall(s)	67 (62.0)
Any Fall(s)	41 (38.0)
Amount*	.8 ±1.6
Awareness of Fall Experienced by Other(s) (Q44)	
No	47 (43.9)
Yes	60 (56.1)

Notes: * Indicates continuous variable and reports the mean ±SD.

† Percentages may not total to 100% due to rounding errors.

Appendix 9: Description of the Recruitment Strategy



Participants were recruited by a public spaces recruitment campaign. A recruitment table was set up in commercial shopping centres frequented by older adults. The table was a self-contained recruitment and data collection centre: older adults would walk past the table and read the poster and flyers promoting the research study. Those looking for more information or interested in participating approached the researcher at the table. The researcher maintained a friendly and approachable demeanour to attract participants but did not roam the area to actively solicit study participants. When an older adult demonstrated interest, they sat at the table with the researcher to read and discuss the Letter of Information and Informed Consent documents. All data collection materials and equipment were prepared when setting up the table, so data collection took place without delay. Participants completed the questerview process (quantitative survey and

qualitative think-out-loud audio responses) one-on-one setting with the researcher. After participants completed the questerview protocol, they were asked if they had any questions and were invited to enter their name in a draw prize box as a way of thanking them for their participation.

The recruitment strategy was effective for three main reasons. First, it brought the researcher into the community environment where older adults conducted their daily tasks (groceries, banking, recreation, socialization). Second, the location allowed inquiry and interest in participation to be immediately followed by participation. Third, due to the increased visibility, chain referral was possible. An older adult completing participation would see a friend or neighbour and encourage him or her to also take part. However, even with these benefits, the strategy did have some drawbacks. First, the acoustic environment of the commercial centre pushed the limits of the digital audio recorder on occasion. Second, the visibility of the recruitment table, while aiding in chain referral, sometimes led to interruptions of the questerview protocol if the participant stopped to say hello to a friend or neighbour. Occasionally, one-on-one data collection was jeopardized if friends were interested in completing the survey simultaneously.

In addition to recruitment at commercial shopping centres, social and recreational groups were also utilized. The researcher would arrange to speak at the start of the gathering. Posters and flyers were set up to identify the researcher as the older adults gathered. After being introduced, the researcher addressed the group of older adults and explained the purpose of the study, what participants would be asked to do, and the process for completing the survey pages. Copies of the data collection material were then

distributed to interested older adults, who either completed the forms on the spot or took them home to complete and bring back to the researcher the next time the group gathered. When surveys were returned to the researcher, a quick review of the survey responses was conducted in order to maintain the data quality of surveys completed in the absence of the researcher.

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