Published in final edited form as:

Int J Older People Nurs. 2011 December ; 6(4): 289–298. doi:10.1111/j.1748-3743.2011.00299.x.

Practice Development Section Paper 1 Older People's Perspectives on Fall Risk and Fall Prevention Programs: A Literature Review

Siobhan McMahon, MSN, MPH, GNP-BC,

John A. Hartford Foundation BAGNC Pre-Doctoral Scholar, PhD Student, Arizona State University, Assistant Professor, The College of St. Scholastica, School of Nursing, Phone: 218-290-3422

Kristine M. Talley, PhD, RN, GNP-BC, and

Assistant Professor, University of Minnesota, School of Nursing, Phone: 612-624-9412

Jean F. Wyman, PhD, RN, GNP-BC, FAAN, FGSA

Professor and Cora Meidl Siehl Endowed Chair in Nursing Research, Director, Minnesota Hartford Center of Geriatric Nursing Excellence, University of Minnesota, School of Nursing, Phone: 612-624-2132

Siobhan McMahon: Siobhan.McMahon@asu.edu; Kristine M. Talley: carl0106@umn.edu; Jean F. Wyman: wyman002@umn.edu

Abstract

Despite evidence supporting fall prevention methods, fall-related injury and death rates continue to rise. Understanding older people's views on fall risk and prevention will help nurses and other health professionals in the design of fall prevention strategies that will broaden their scope, reach, and adoption. This literature review synthesized 19 qualitative and quantitative studies examining older people's perspectives about fall risk and prevention using a social ecological framework. Three themes emerged about fall risk; fearing vulnerability, maintaining autonomy and independence, and interpreting risk. Four themes emerged about fall prevention programs; influence of participant and program characteristics, need for personal relevance and preference, maintaining autonomy and independence, and increased support for and access to programs. Implications for practice include individual, interpersonal, organizational and community level considerations for improving fall prevention efforts.

Keywords

Falls; Health Promotion; Person-Centred Practice

Introduction

Falls are a common, serious, and preventable problem experienced by older people throughout the world. Each year, approximately one third of older people fall, and the chance of falling increases with age (Centers for Disease Control and Prevention [CDC], 2010; World Health Organization [WHO], 2007). Further, despite decades of research on fall prevention, fall-related injury and death rates are increasing (CDC, 2010; Chandran, Hyder, & Beek-Asa, 2010; WHO, 2007). Global health organizations recognize the importance of implementing effective fall prevention campaigns (CDC, 2008; National Institute for Clinical Excellence, 2004; WHO, 2007) and evidence-based interventions (Gillespie et al., 2009). One factor limiting fall reduction efforts may be insufficient understanding of older people's views of falls and fall prevention strategies.

Previous reviews have examined older people's views of facilitators and barriers to participation in fall prevention programs (Bunn, Dickinson, Barnett-Page, McInnes, & Horton, 2008; McInnes & Askie, 2004). However, these reviews have not integrated studies examining older people's perspectives on their fall risk, though these perspectives may influence decisions about participating in prevention activities. For example, underestimation of health risks or fatalistic beliefs, can lead to assumptions that prevention efforts are not applicable or not beneficial (Bowling, & Ebrahim, 2001; Lloyd, 2001). People estimate their own health risks through analytic and affective processes that are influenced by personal values (Finucane & Halup, 2006), social factors, and cultural factors (Bowling & Ebrahim, 2001). This literature review therefore examined older people's perspectives on fall risk and fall prevention within a social ecological framework, recognizing individual, social, and environmental determinants of health (CDC, 2007; Smedley & Syme, 2000; Stokols, 1996; USDHHS, 2011). Understanding these factors reflected in the perspectives people have regarding falls and their prevention may expand the adoption of fall prevention efforts.

Aims

Research questions were: 1) What are the perspectives of older people regarding their own fall risk? 2) What do older people view as barriers and facilitators to participating in fall prevention programs?

Methods

English language articles published from 2005–2010 were identified from online bibliographic databases using the keywords falls, accidental falls, prevention, facilitators, barriers, experiences, and adherence. A recent five year time-frame was chosen as previous literature reviews on older people's perspectives of fall prevention included articles published through January 2005 (Bunn et al., 2008; McInnes & Askie, 2004). Manual searches of reference lists were also conducted. Abstracts of both qualitative and quantitative studies were screened. To be eligible studies had to include community-dwelling people ages 65 years or older and examine participants' views of falls and/or fall preventive strategies. Studies were excluded if they were proxy reports, or if they targeted older people in acute or long term care settings or people with central nervous system disease.

Study quality was assessed using checklists developed by the authors based on published criteria for evaluating qualitative (Sandelowski & Barroso, 2007; Tong, Sainsbury, & Craig, 2007) and survey research (Kelley, Clark, Brown, & Sitzia, 2003). Evaluations of qualitative studies considered purpose, design, sample, data collection, analysis, credibility and transferability. Evaluations of quantitative studies looked at purpose, design, sample, data collection, analyses, validity and generalizability. When ratings were discordant, articles were re-examined and differences discussed by all the authors until consensus was reached.

Study characteristics and findings are summarized in Table 1. Quotes related to fall risk and fall prevention were extracted and using thematic analysis, findings were compared to identify patterns, similarities, and differences, and to explore the range of perspectives (Harden et al., 2004). Themes were then organized into social ecological levels, defined as: (a) individual (e.g., influence of personal beliefs, knowledge, values, emotions); (b) interpersonal (e.g., influence of relationships with family, friends, health care providers); (c) organizational (e.g., influence of healthcare systems, fall prevention programs, public health programs); and (d) community (e.g., influence of environmental resources, social and cultural norms) (Harden et al., 2004).

Results

Nineteen of the 118 studies identified were eligible for review (Figure 1). Ten studies addressed perspectives on fall risk; 16 addressed views of fall prevention programs. Studies used qualitative (n=11), quantitative (n=7) and mixed method designs (n=1). Overall, the quality of studies ranged from poor (11 %) to adequate (68 %) to high (21 %). Of the 12,691 study participants, most were women. Few studies described race, ethnicity, or socioeconomic characteristics. Ten studies included older people identified as at risk of falling.

Fall Risk Perspectives

In general, perceptions of fall risk were linked to other risks, values, beliefs, and emotions. Three themes emerged: fearing vulnerability, maintaining autonomy and independence, and interpreting risk.

Fearing vulnerability—Fall risk perspectives were associated with fear of vulnerability. This fear was evident in participants' statements about fearing falls (Berlin Hallrup et al., 2009; Boyd & Stevens, 2009), fearing physical losses (Porter et al., 2010; Roe et al., 2008b) or pain (Roe et al., 2008a), fearing loss of independent living (Yardley et al., 2006) feeling embarrassed (Roe et al., 2008a), and fearing personal failure (Berlin Hallrup et al., 2009; Roe et al., 2008a; Roe et al., 2008b; Yardley et al., 2006). One of many participant quotations that illustrated fear was: 'What would I do if I fell? I am not sure that I can call them (the children), or them over there (the neighbours) ... it's not for certain that they'll ring or care about me. I might end up lying there' (Berlin Hallrup et al., 2009, pp. 382–383). Fear of vulnerability in turn influenced physical activity and interpersonal relationships and activities. For example, one participant said she had not 'garden for a couple of years due to fear of falling' (Horton, 2008, p. 1187). Other participants said they had decreased their social activities because of their fear (Roe et al., 2008b) and refrained from asking for help from family, friends, or neighbors, because of embarrassment (Berlin Hallrup et al., 2009). Messages from healthcare organizations, fall prevention programs, and public health programs about falls and fall risk influenced the fear of vulnerability. Information about falls and their impact was perceived as realistic by some participants, but perceived as frightening by others (Yardley et al., 2006). Many study participants expressed concern that organizational information about falls and the label of "faller" create negative views of older people, which in turn, create social stigma and contribute to ageism (Horne et al., 2009; Yardley et al., 2006).

Maintaining autonomy and independence—Many participants valued staying independent, minimizing insecurity, and staying physically and socially active in their communities (Berlin Hallrup et al., 2009; Kilian et al., 2008). Maintaining autonomy and independence often took precedence over calculating fall risk. Some individuals felt that responding to, or dedicating too much time and attention to their own fall risk might interfere with their freedom to engage in desired activities (Berlin Hallrup et al., 2009; Kilian et al., 2008; Yardley et al., 2006) or worse, lead to restricted mobility (Berlin Hallrup et al., 2009; Kilian et al., 2008). In a discussion about valuing independence and maintaining an active lifestyle one woman said, 'I don't go out the door in the morning and think, 'oh gosh... I might be taking a risk today' (Kilian et al., 2008, p. 336). Conversely, people who had fallen explained that reflecting on their fall, its cause, and future risks helped them to integrate precautionary actions into their lives, which in turn helped them to overcome or minimize their fears (Roe et al., 2008a; Roe et al., 2008b). Prioritizing values was contingent on having choices about how and when to act on fall risk (Evron et al., 2009; Kilian et al., 2008). More autonomy and independence were perceived in the presence of trusting and

consistent relationships with providers (Berlin Hallrup et al., 2009). Also, participants perceived more autonomy and independence when their adult children respected their views on fall risk and their decision making authority (Kilian et al., 2008).

Interpreting risk—Older people who had experienced a fall, understood the causes of a previous fall, or perceived physical changes tended to acknowledge personal fall risk more than persons who had not experienced a fall, or considered the causes of a previous fall, or perceived physical changes (Horne et al., 2009). People who perceived informal and formal support more willingly identified and verbalized their fall risk (Roe et al., 2008a; B. Roe et al., 2008b). Some participants noted that falls occur throughout life, but their effects change with time (Kilian et al., 2008; Roe et al., 2008a). While many people felt information provided by organizations about falls was logical, they often felt it was not personally relevant, for wide-ranging reasons such as beliefs that (a) falls are not a serious health problem (Horne et al., 2009); (b) falls are an unavoidable aspect of aging (Horne et al., 2009; Yardley et al., 2006); (c) other older people are at more risk (Kilian et al., 2008; Horne et al., 2009; Yardley et al., 2006); and (d) the occurrence of falls, like illnesses, is in the hands of God (Horne et al., 2009). Some participants suggested that using common sense to assess and respond to fall risk was more acceptable than careful calculation of risk (Kilian et al., 2008).

Views of Fall Prevention Programs

Four themes emerged: the influence of participant and program characteristics, personal relevance and preference, maintaining autonomy and independence, and support and access to programs.

Participant and program characteristics—Several barriers and facilitators to participating in fall prevention programs were identified. Health issues such as self-reported poor health (Riglin et al., 2010) or declining health (Roe et al., 2008b), fatigue (Riglin et al., 2010), limited mobility (Horne et al., 2009), pain (Riglin et al., 2010), feeling too old (Nyman & Yardley, 2009), having a limiting health condition such as arthritis or a hospital admission (Horne et al., 2009; Hutton et al., 2009; Riglin et al., 2010; Whitehead et al., 2006) were common barriers. Additionally, competing commitments to other activities and people were barriers to participation (Hutton et al., 2009). Participants with different demographic, ethnic, and socioeconomic characteristics often chose different interventions. For example, women and the very oldest participants were least likely to participate in strength and balance training (Yardley et al., 2007), though women were more likely to attend lectures (Sjosten et al., 2007), engage in home exercises, accept home modifications, and attend group sessions (Yardley et al., 2008). People with lower socioeconomic status were more likely to accept home modifications and to engage in home exercises, but less likely to attend group sessions (Yardley et al., 2008). People of Black or Asian ethnicity were more likely to accept home based interventions (Yardley et al., 2008). Those who had fallen recently were more likely to participate in prevention programs, to accept home modifications, and to engage in home or group exercise (Yardley et al., 2008).

Relevance and preference—A persistent theme was personal relevance and preference for fall prevention programs. Several participants said that interventions were not personally relevant or practical and they would not engage in the activities. Some people felt programs were not intense enough, or they were too young (Yardley et al., 2007), too fit (Horne et al., 2009), or too physically active (Nyman & Yardley, 2009; Snodgrass & Rivett, 2005; Whitehead et al., 2006) to benefit. Others felt programs were too vigorous (Nyman & Yardley, 2009) and were concerned about the discomfort that might occur with exercise (Riglin et al., 2010; L. Yardley et al., 2007). Some participants said that fall prevention

recommendations seemed reasonable but were more appropriate for other people (Yardley et al., 2006). Others felt that their home was already safe and did not need modification (Whitehead et al., 2006) or were simply opposed to home modifications (Yardley et al., 2008). People were more likely to participate in interventions if they believed it would maintain or improve their health (Berlin Hallrup et al., 2009; Whitehead et al., 2006; L. Yardley et al., 2007) and could prevent falls (Boyd & Stevens, 2009; Horne et al., 2009). Also, when participants attributed a fall to a specific cause, they were more likely to change their behavior to prevent another fall. For example, if they had tripped in the dark, they would thereafter turn on the light before getting out of bed (Porter et al., 2010). One participant explained taking care in a specific situation: “Well I’m just very very careful when I go out there now; I catch hold of the side door before I put my foot down” (Roe, 2008b, p., 2266). Older people preferred programs that were individualized and addressed specific, personally relevant actions such as removing throw rugs, moving furniture, or using a walker in the driveway (Porter et al., 2010; B. Roe et al., 2008a). Some men felt embarrassed to engage in Tai Chi, believing it was mostly for women (Hutton et al., 2009). Participants who disliked exercise preferred not to participate in a program with an exercise component (Hutton, et al., 2009). Some people preferred group activities (Hutton, et al., 2009; Riglin et al., 2010). Some identified organizational-level characteristics that could improve participation, such as having more frequent and longer classes with the option for home visits. Participants also felt programs could be enhanced with additional preferred activities such as access to a hot pool (Evron et al., 2009).

Maintaining autonomy and independence—Maintaining autonomy and independence was central: if people felt a threat to their autonomy, control, or independence they would not participate in a fall prevention program (Berlin Hallrup et al., 2009; Yardley et al., 2007; Yardley et al., 2006). Participants reported feeling threatened by labels alluding to frailty or vulnerability (Evron et al., 2009; Roe et al., 2008a; Roe et al., 2008b), having limited self-confidence (Roe et al., 2008a) or a poor self-image (Yardley et al., 2008), and a fear of falls and associated losses (Roe et al., 2008a). Participants who chose not to engage in a fall prevention program expressed concerns about hidden agendas as indicated by this quote, “they invite you to falls assessment, but you know they will find 10 other problems – and then you are caught in the system” (Evron et al., 2009, p. 733). They also had concerns about threats to their personal freedom and felt insulted by questions addressing cognitive function (Evron et al., 2009). Some believed participating in a fall prevention program would lead to loss of decision making authority (Evron et al., 2009). People were more likely to participate if they believed an intervention would help maintain independence and promote positive self-identity (Evron et al., 2009). Messages that conveyed positive images of older people (Yardley et al., 2006) and the positive benefits of interventions (e.g. health, posture, freedom), rather than focusing on threatening aspects of fall risk, were the most appealing (Yardley, 2006).

Support and access—Interpersonal, organizational, and community level support influenced people’s participation in fall prevention programs. Relationships with family, peers, and health care professionals affected older people’s decisions to engage in fall prevention. Participants who believed their provider did not listen to their concerns (Berlin Hallrup, 2009) or approve of intervention strategies (Whitehead et al., 2006) were less likely to participate, while those whose family and friends were enthusiastic about a program (Yardley et al., 2007) or whose health care provider recommended a program (Berlin Hallrup et al., 2009; Hutton et al., 2009; Snodgrass & Rivett, 2005; Yardley et al., 2007) were more likely to participate. Motivation thus improved when peers and professionals provided support (Hutton et al., 2009). Older people also felt supported when they knew others in the program group (Snodgrass & Rivett, 2005) and had trusting, collaborative

relationships with the interventionists (Berlin Hallrup et al., 2009). Impediments to participation included too many sessions, long waits, and extended travel times (Evron et al., 2009; Hutton et al., 2009; Snodgrass & Rivett, 2005; Whitehead et al., 2006). Participants were more likely to attend group programs with a fun, motivating (Hutton et al., 2009), trusting, and social atmosphere (Berlin Hallrup et al., 2009). They enjoyed receiving new information about how to increase their current physical activity (Hutton et al., 2009). Community barriers included access issues such as poor transportation (Hutton et al., 2009; Roe et al., 2008b; Snodgrass & Rivett, 2005), long travel distances (Snodgrass & Rivett, 2005), poor access to physical training sites (Roe et al., 2008b), and the cost of sustained participation (Evron et al., 2009). One participant suggested, 'I think the exercise classes need to be community based.... small local groups going here and there in church halls and community halls and so forth' (Hutton et al., 2009, p. 87).

Discussion

This paper reviews the research on older people's perspectives of fall risk and fall prevention programs and identifies individual, interpersonal, organizational, and community level implications for improving fall prevention efforts (Table 2). Diverse research was synthesized using methods to examine people's views (Harden et al., 2004). Studies used qualitative, interview or survey designs, and some had small purposive samples. Therefore, the review findings may not generalize to all older people. However, the purpose of synthesizing studies about "views" is to gain greater understanding of public health issues from the perspective of those targeted by interventions (Harden et al., 2004).

This review suggests that exploring individual fears, values, and beliefs about fall risk and perceived barriers and facilitators to participating in fall prevention programs will provide nurses opportunities to build stronger partnerships with older people and develop person-centered approaches to care (McCormack & McCance, 2006). Understanding how people interpret information about falls and fall risk and integrate (or do not integrate) this information into their lives will help nurses individualize prevention approaches. Further, including significant others in fall risk assessment and planning will clarify values and beliefs about fall risk, while promoting social support and continued autonomy within interpersonal relationships. Organizational and community level findings support that integrating elements into prevention programs that older people value will increase their participation. Finally, consideration of individual, interpersonal, organizational, and community approaches to improving fall prevention strategies is essential to expanding their reach and adoption.

Acknowledgments

This project was supported by grants from:

- John A. Hartford Foundation/Building Academic Geriatric Nursing Capacity Program
- National Institutes of Health /National Institute of Nursing Research Grant # F31NR012351

References

- Berlin Hallrup L, Albertsson D, Bengtsson Tops A, Dahlberg K, Grahn B. Elderly women's experiences of living with fall risk in a fragile body: A reflective lifeworld approach. *Health & Social Care in the Community*. 2009; 17(4):379–387. [PubMed: 19187421]
- Bowling A, Ebrahim S. Measuring preferences for treatment and perceptions of risk. *Quality in Health Care*. 2001; 10:i2–i8. [PubMed: 11533430]
- Boyd R, Stevens JA. Falls and fear of falling: Burden, beliefs and behaviours. *Age and Ageing*. 2009; 38:423–428. [PubMed: 19420144]

- Bunn F, Dickinson A, Barnett-Page E, McInnes E, Horton K. A systematic review of older people's perceptions of facilitators and barriers to participation in falls-prevention interventions. *Ageing & Society*. 2008; 28(4):449–472.
- Centers for Disease Control and Prevention. The social ecological model; a framework for prevention. 2007. Retrieved from http://www.cdc.gov/ncipc/dvp/social-ecological-model_dvp.htm
- Centers for Disease Control and Prevention. CDC falls prevention activities research studies. 2008. Retrieved from <http://www.cdc.gov/homeandrecreationsafety/falls/FallsPreventionActivity.html>
- Centers for Disease Control and Prevention. Web based injury statistics query and reporting system. 2010. Retrieved from www.cdc.gov/ncipc/wisqars
- Chandran A, Hyder AA, Beek-Asa C. The global burden of unintentional injuries and an agenda for progress. *Epidemiological Review*. 2010; 32:110–120.
- Evron L, Schultz-Larsen K, Fristrup T. Barriers to participation in a hospital-based falls assessment clinic programme: An interview study with older people. *Scandinavian Journal of Public Health*. 2009; 37(7):728–735. [PubMed: 19638371]
- Finucane ML, Holup JL. Risk as value: combining affect and analysis in risk judgments. *Journal of Risk Research*. 2006; 9(2):141–164.
- Gillespie LD, Robertson MC, Gillespie WJ, Lamb SE, GS, Cumming RG, Rowe BH. Preventing falls in older people living in the community. *Cochrane Database of Systemic Reviews*. 2009 August 10th.2009(4)
- Harden A, Garcia J, Oliver S, Rees R, Shepherd J, Brunton G, Oakley A. Applying systematic review methods to studies of people's views: an example from public health research. *Journal of Epidemiology and Community Health*. 2004; 58:794–800. [PubMed: 15310807]
- Horne M, Speed S, Skelton D, Todd C. What do community-dwelling Caucasian and South Asian 60–70 year olds think about exercise for fall prevention? *Age & Ageing*. 2009; 38(1):68–73. [PubMed: 19039019]
- Horton K. Falls in older people: The place of telemonitoring in rehabilitation. *Journal of Rehabilitation Research & Development*. 2008; 45(8):1183–1194. [PubMed: 19235119]
- Hughes K, van Beurden E, Eakin EG, Barnett LM, Patterson E, Backhouse J, Newman B. Older persons' perception of risk of falling: Implications for fall-prevention campaigns. *American Journal of Public Health*. 2008; 98(2):351–357. [PubMed: 18172132]
- Hutton L, Frame R, Maggo H, Shirakawa H, Mulligan H, Waters D, Hale L. The perceptions of physical activity in an elderly population at risk of falling: A focus group study. *New Zealand Journal of Physiotherapy*. 2009; 37(2):85–92.
- Kelley K, Clark B, Brown V, Sitzia J. Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care*. 2003; 15(3):261–266. [PubMed: 12803354]
- Kilian C, Salmoni A, Ward-Griffin C, Kloseck M. Perceiving falls within a family context: A focused ethnographic approach. *Canadian Journal on Aging*. 2008; 27(4):331–345. [PubMed: 19416795]
- Lloyd AJ. The extent of patients' understanding of the risk of treatments. *Quality of Health Care*. 2001; 10:i114–i118.
- McCormack B, McCance TV. Development of a framework for person-centered nursing. *Journal of Advanced Nursing*. 2006; 56(5):472–479. [PubMed: 17078823]
- McInnes E, Askie L. Evidence review on older people's views and experiences of falls prevention strategies. *Worldviews on Evidence-Based Nursing*. 2004; 1(1):20–37. [PubMed: 17147756]
- National Institute for Clinical Excellence. Clinical practice guideline for the assessment and prevention of falls in older people. London: Royal College of Nursing; 2004.
- Nyman SR, Yardley L. Usability and acceptability of a website that provides tailored advice on falls prevention activities for older people. *Health Informatics Journal*. 2009; 15(1):27–39. [PubMed: 19218310]
- Porter EJ, Matsuda S, Lindbloom E. Intentions of homebound women to reduce the risk of falling again. *Journal of Nursing*. 2010; 42(1):101–109.
- Riglin, J.; Husk, J.; Grant, R.; Spencer-Williams, M. Survey results Royal College of Physicians. London: Healthcare of Older People Programme National Falls and Bone Health Audit Steering Group; 2010. Older people's experiences of falls prevention services.

- Roe B, Howell F, Riniotis K, Beech R, Crome P, Ong BN. Older people's experience of falls: Understanding, interpretation and autonomy. *Journal of Advanced Nursing*. 2008a; 63(6):586–596. [PubMed: 18808580]
- Roe B, Howell F, Riniotis K, Beech R, Crome P, Ong BN. Older people and falls: Health status, quality of life, lifestyle, care networks, prevention and views on service use following a recent fall. *Journal of Clinical Nursing*. 2008b; 18(16):2261–2272. [PubMed: 19583659]
- Sandelowski, M.; Barroso, J. *Handbook for synthesizing qualitative research*. New York New York: Springer; 2007.
- Sjosten NM, Solonoja M, Piirtola M, Vahlberg JT, Hyttinen HK, Aarnio PT, Kivela S. A multifactorial fall prevention programme in the community-dwelling aged: Predictors of adherence. *European Journal of Public Health*. 2007; 17(5):464–470. [PubMed: 17208952]
- Smedley, BD.; Syme, SL., editors. *Promoting Health: Intervention Strategies from Social and Behavioral Sciences*. Washington, D.C: National Academy Press; 2000.
- Snodgrass SJ, Rivett DA. Perceptions of older people about falls injury prevention and physical activity. *Australasian Journal on Ageing*. 2005; 24(2):114–118.
- Stokols D. Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion*. 1996; 10(4):282–298. [PubMed: 10159709]
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007; 19(6):349–357. [PubMed: 17872937]
- U.S. Department of Health and Human Services. What's new for 2020. <http://www.healthypeople.gov/2020/about/new2020.aspx>
- Whitehead CH, Wundke R, Crotty M. Attitudes to falls and injury prevention: What are the barriers to implementing falls prevention strategies? *Clinical Rehabilitation*. 2006; 20(6):536–542. [PubMed: 16892935]
- World Health Organization. Global report on falls in older age. 2007. retrieved from http://whqlibdoc.who.int/publications/2008/9789241563536_eng.pdf
- Yardley L, Donovan-Hall M, Francis K, Todd C. Attitudes and beliefs that predict older people's intention to undertake strength and balance training. *Journal of Gerontology Social Sciences*. 2007; 62(2):P119–P125.
- Yardley L, Donovan-Hall M, Francis K, Todd C. Older people's views of advice about falls prevention: A qualitative study. *Health Education Research*. 2006; 21(4):508–517. [PubMed: 16467173]
- Yardley L, Kirby S, Ben-Shlomo Y, Gilbert R, Whitehead S, Todd C. How likely are older people to take up different falls prevention activities? *Preventive Medicine: An International Journal Devoted to Practice and Theory*. 2008; 47(5):554–558.10.1016/j.ypmed.2008.09.001

Figure 1.
Screening Flow Sheet

Table 1

Study Characteristics

Qualitative Studies					
Author (year)	Aim	Design	Participants	Setting	
Berlin Hallrup (2009)	• Explore the lived experience of fall risk from a life-world perspective in elderly women with previous fractures.	• Interviews • Phenomenology	• N = 13 • Average Age: 76–86 • Female 100 % • High risk for falls	• Home • Rural Sweden	
Evron (2009)	• Explore attitudes and views of community-dwelling older people at risk of falling who either rejected referral to participate in or completed a hospital-based falls prevention program.	• Interviews • Phenomenology	• N= 20 • Average Age: 86 • Female 80 % • High risk for falls	• Home • Frederiksberg, Copenhagen	
Home (2009)	• Identify beliefs that influence initiation and adherence to exercise for fall prevention among community dwelling Caucasian and South Asian people living in the UK	• Focus groups • Interviews • Ethnography	• N = 87 in 15 focus groups • N = 40 in depth interviews • Average Age: 64.8 • Female 63 %	• Home • UK	
Horton (2008)	• Explore people's experiences with and expectations of the use of tele-monitoring devices such as fall sensors, bed monitors.	• Interviews • Thematic analysis	• N = 35 • Average Age: 65–85 • Female 62 % • High risk for falls	• Home • UK	
Hutton (2009)	• Increase understanding of the perceptions that older adults at high risk for falls have of physical activity.	• Focus groups • Thematic analysis	• N = 20 • Average Age: 73 • Female 90 % • High risk of falling	• Group • New Zealand	
Kilian (2008)	• Describe contextual influences on the perceptions of older adults and their adult children regarding falls.	• Focus groups • Ethnography	• N = 8 (6 adult children) • Average Age: 81.4 (56.5 adult children) • Female 88 %	• Home • Ontario, Canada	

Qualitative Studies				
Author (year)	Aim	Design	Participants	Setting
Nyman (2009)	<ul style="list-style-type: none"> Investigate the views of older people and care providers regarding the usability and acceptability of the balance training website. 	<ul style="list-style-type: none"> Interviews 	<ul style="list-style-type: none"> Participants with high and low risk for falls N = 10 (20 wardens) Average Age: 71 (wardens 48) Female: 62.5 % older adults and 77 % wardens 	<ul style="list-style-type: none"> Home Southampton
Porter (2010)	<ul style="list-style-type: none"> Link reasons for falls with intentions for preventive behaviors described by older adults. 	<ul style="list-style-type: none"> Interviews Phenomenology 	<ul style="list-style-type: none"> N = 40 Average Age: 85–90 Female 100 % History of a fall 	<ul style="list-style-type: none"> Home Columbia, Missouri
Roe (2008a)	<ul style="list-style-type: none"> Explore the experiences of older people who recently fell; identify possible contributing factors for future service development. 	<ul style="list-style-type: none"> Interviews Content Analysis 	<ul style="list-style-type: none"> N = 27 Average Age: 81–87 Female 84 % Fall within 10 days 	<ul style="list-style-type: none"> Rural and urban towns Northwest England
Roe (2008b)	<ul style="list-style-type: none"> Explore experiences of older people who recently fell: (a) impacts on health, well-being, quality of life; and (b) their views of formal services, the role of social networks, and informal care. 	<ul style="list-style-type: none"> Interviews Content Analysis 	<ul style="list-style-type: none"> N = 27 Average Age: 81–87 Female 84 % Fall within 10 days 	<ul style="list-style-type: none"> Rural and Urban towns Northwest England
Yardley (2006)	<ul style="list-style-type: none"> Understand older adult perceptions of falls prevention advice; and learn how best to design health promotion messages. 	<ul style="list-style-type: none"> Focus Groups Thematic analysis 	<ul style="list-style-type: none"> N = 66 Female 80 % 	<ul style="list-style-type: none"> Southampton, UK

Quantitative Studies			
Author (year)	Aim	Design	Participants
Boyd (2009)	<ul style="list-style-type: none"> Estimate the prevalence of falls and the fear of falling. 	<ul style="list-style-type: none"> Telephone Survey 	<ul style="list-style-type: none"> N= 1709 Average Age: >65 Female 58.4 %

Quantitative Studies

Author (year)	Aim	Design	Participants	Setting
Riglin (2010)	<ul style="list-style-type: none"> Describe patient experiences of falls prevention services. 	<ul style="list-style-type: none"> Cross-sectional Survey 	<ul style="list-style-type: none"> N = 1028 Average Age: most >75 Female 69 % High risk for falls 	<ul style="list-style-type: none"> London, UK
Snodgrass (2005)	<ul style="list-style-type: none"> Explore the beliefs and perceptions of older people about falls injury prevention services; identify incentives and barriers to attending falls prevention services. 	<ul style="list-style-type: none"> Cross-sectional Survey 	<ul style="list-style-type: none"> N = 75 Average Age: 74.6 Female 	<ul style="list-style-type: none"> Greater Hunter South Wales, Australian
Sjosten (2007)	<ul style="list-style-type: none"> Determine factors predictive of adherence to preventive interventions (group and home-based exercises, psychosocial groups, lectures). 	<ul style="list-style-type: none"> Longitudinal Logistic Regression 	<ul style="list-style-type: none"> N = 293 Average Age: 73.4 Female 86 % Recent Fall 	<ul style="list-style-type: none"> Sub-study of RCT Finland
Whitehead (2006)	<ul style="list-style-type: none"> Assess perceived barriers to initiating a falls and injury prevention strategy among older adults at risk for falls. Identify factors that influence motivation for initiating prevention strategies. 	<ul style="list-style-type: none"> Survey 	<ul style="list-style-type: none"> N = 60 Average Age: 78.2 Female 73 % Recent fall 	<ul style="list-style-type: none"> Sub-study of RCT Australia
Yardley (2007)	<ul style="list-style-type: none"> Determine relationships of threat appraisal and coping appraisal to older people's intention to undertake strength and balance training. 	<ul style="list-style-type: none"> Postal Survey Theory-guided Structural Equation Modeling (AMOS) 	<ul style="list-style-type: none"> N = 558 Average Age: 60–95 Female 71 % Older adults from diverse settings 	<ul style="list-style-type: none"> Southampton, UK
Yardley (2008)	<ul style="list-style-type: none"> Determine the extent to which older people will engage in falls prevention activities; examine variations among different groups of older adults. 	<ul style="list-style-type: none"> Postal Survey Logistic Regression 	<ul style="list-style-type: none"> N = 5440 Average Age: 52% > 64 Female 52 % Older adults from diverse settings 	<ul style="list-style-type: none"> Southampton, UK

Mixed Method				
Author (year)	Aim	Design	Participants	Setting
Hughes (2008)	<ul style="list-style-type: none">Examine attitudes of older adults regarding falls.	<ul style="list-style-type: none">Mixed methodFocus groupComputer assisted telephone survey	<ul style="list-style-type: none">N = 3202N = Focus Group 73Average Age: >60Female 50 %	<ul style="list-style-type: none">Northern Rivers, New South Wales

Table 2**Multi-Level Considerations for Improving Fall Prevention Efforts**

Social-Ecological Level	Assessing and Identifying Fall Risk	Promoting Fall Prevention Interventions
Individual	<ul style="list-style-type: none"> • Explore previous experience with falls (e.g., fears, actions). • Explore personal goals, values, and beliefs. • Facilitate discussion about personal relevance of fall risk. • Reframe risk in a way that is personally meaningful (emphasize benefits in qualitative, simple terms). • Discuss information about fall risk in lay language emphasizing sensibleness. 	<ul style="list-style-type: none"> • Assess individual barriers and facilitators to participating in fall prevention interventions. • Elicit the preferences of older persons regarding recommended interventions. • Identify fall preventive strategies (formal or informal) previously used and their effects. • Assess motivation for participation in programs.
Interpersonal	<ul style="list-style-type: none"> • Explore relationships and roles in families, including family perceptions of fall risk • Explore older person's relationships with health care providers/support received. 	<ul style="list-style-type: none"> • Include significant others in education, care planning, and intervention participation. • Encourage significant others to promote the continued autonomy and independence of older persons.
Organizational	<ul style="list-style-type: none"> • Encourage providers to integrate perspectives of older persons into fall screening and assessment practices. • Advocate for the integration of individual's views in organization/program protocols addressing fall screening and risk assessment. 	<ul style="list-style-type: none"> • Offer choices and promote autonomous decision making. • Individualize interventions in accordance with older persons' preferences and abilities. • Integrate program elements that promote personal satisfaction/enjoyment and socialization.
Community	<ul style="list-style-type: none"> • In public messages about fall risk avoid words that suggest that older people are at fault for their own fall risk, or that having fall risk implies failure. 	<ul style="list-style-type: none"> • Offer information about transportation options. • Offer information about accessible prevention programs in the community that fit individual preferences. • Use language in messages about fall prevention interventions that reassure people it is never too late to start activities. • Use language and images in public messages that communicate the positive impact of fall prevention programs, such as staying healthy and staying independent.