



Exploring Older Adult ED Fall Patients' Understanding of Their Fall: A Qualitative Study

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Scholarly Report submitted in partial fulfillment of the MD Degree at Harvard Medical School

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Scholarly Report Title: “Exploring Older Adult ED Fall Patients’ Understanding of Their Fall: A Qualitative Study”

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Running Title: Perspectives: Older Adult Falls - ED

Abstract

Study Objective: We sought to gain understanding of older adult, emergency department (ED) fall patient perspectives and emotions about antecedent falls, and to gain better understanding of their attitudes toward falls prevention interventions.

Methods: We conducted a qualitative study between July 2015 and January 2016 to examine the perspective of older adults who had recently fallen and were in the care of ED providers in an urban, level-one teaching hospital. We included non-demented, community-dwelling, older adults based on a convenience sample. Interviews were semi-structured, consisting of open-ended questions, utilizing a piloted interview guide. Interviews were audio-recorded and transcribed. Codes were generated inductively, organized into categories, subthemes, and ultimately prominent themes. Once we achieved thematic saturation, we stopped enrollment.

Results: Our final sample was 63 patients. Patients blamed falls on the environment, on themselves, on a freak accident, or on a medical condition but never noted a multifactorial rationale. Patients have variable emotions about current fall and varying perceptions of future fall risk, ranging from extremely concerned to not at all concerned. Patients demonstrated a range of receptiveness to ED interventions aimed at preventing falls, with very little input as to what those interventions should be.

Conclusions: Although perceptions are varied, older adults tend to be more receptive to intervention and more concerned about their future fall risk in the ED than in a community setting, making the ED an appropriate setting for intervention. However, ED physicians will first have to educate patients that fall risk is multifactorial, and that patients require multifactorial risk assessment and targeted fall reduction intervention.

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Introduction

In the older adult population (age 65 and older), accidental falls have long been considered a leading cause of preventable injury, functional disability and mortality¹, and have thus become an important public health issue. Elderly people fall frequently². Annually, one in three community-dwelling older adults falls³. The estimated direct medical cost of fall-related injuries is approximately \$34 billion each year, with an average hospital cost of \$35,000⁴. The cost will likely only increase as this population ages⁴⁻⁶, and the total cost is estimated to rise to \$67 billion by the year 2020⁷.

While the majority of unintentional falls in the elderly population do not result in significant injury⁸, the resultant overall decline in health, loss of confidence, social isolation, and increased risk of admission to nursing homes are well-documented phenomena⁹⁻¹². Furthermore, approximately 10% of unintentional falls do result in significant injury⁸, and they remain the number one cause of death due to injury in adults aged 65 and older⁶. Annually, there are more than 27,000 deaths and approximately 2.5 million nonfatal injuries from falls in this population⁶. Further, older adult falls serve as a major risk factor for future falls^{13,14}, having a compounding effect on morbidity. Studies have found fall recurrence rates within 6 months of ED discharge range from 14-48%^{9,15,16}. Thus, falls in this population are widely considered to be sentinel events.

A Cochrane meta-analysis showed multifactorial interventions significantly reduced rates of falls¹⁷. While the Geriatric Emergency Department Guidelines now recommend conducting multifactorial evaluations of older ED fall patients and subsequent involvement of multidisciplinary groups for falls prevention¹⁸, patient perceptions regarding falls and resultant motivation/openness to participating in such falls prevention interventions have yet to be examined in this setting.

Previous qualitative studies of elderly patients' views on falls and fall prevention have consistently described denial of the personal relevance of falls prevention interventions and diminishment of personal risk as barriers to care^{19,20}. These studies have been conducted in non-clinical settings and notably not in the setting of a recent fall. To date, no studies have assessed patient perceptions regarding falls in the setting of a recent fall while being cared for in an emergency department. Given the contextual

factors unique to acute care settings, generalizability of previous studies remains in question. The success of an ED referral intervention may depend upon patients' attitudes regarding therapy, their illness-related insight, and their receptiveness to referral from the ED. In this study, we examine patient understanding of recent falls, perceptions of future fall risk, and attitudes toward falls prevention intervention from the ED.

Student Role

Devon Taylor (MS4) conducted a literature review. He screened patients and conducted interviews in the ED during the months of November '15, December '15, and January '16. He transcribed interviews and entered data into spreadsheets and REDCap™, a secure web application for building and managing online surveys and databases. He served as one of the two independent reviewers and analyzed collected data in collaboration with SL. He searched for and selected relevant quotes from interviews that ultimately serve as useful examples for this final manuscript. He drafted the manuscript, including the Introduction, Methods, Results, Discussion, and Conclusions sections with guidance and feedback from the PI, Shan Liu, MD. He created and formatted tables and charts as appropriate. He will draft the final manuscript for publication and will make corrections as recommended by the PI and reviewers.

Methods

Study Design

Between July 2015 and January 2016, two of the investigators (DT and CR) conducted semi-structured, open-ended interviews with older adults in the ED who had recently fallen using a protocol approved by the Massachusetts General Hospital institutional review board. The goal of these interviews was to elucidate patient perceptions of the fall that precipitated presentation, future fall risk, and receptiveness to ED interventions aimed at preventing future falls, with the ultimate goal of informing future approaches to implementation of ED falls prevention interventions for older adults. All patients were screened for dementia and gave written and informed consent.

Population and Setting

Patients were identified while receiving care in the ED of an urban, academic level-one trauma center with 90,000 visits annually, two observation units, and an admission rate of approximately 23%. Patients who were prospectively identified in the electronic medical record system as community-dwelling, aged 65 and older, without a documented history of dementia, who had fallen within the past 7 days, and who were in the care of the ED were approached, unless ED clinicians (physicians, physician assistants, or nurses) believed the patients were too ill or otherwise inappropriate to be interviewed. Patients who did not speak English were able to participate via interpreter services.

In a convenience sample (Table 1), all patients meeting these criteria were approached for a brief cognitive assessment and dementia screening, utilizing the validated 6-item Cognitive Impairment Test (6CIT)²¹, with people scoring in the normal range (0-7) being consented for the study, and those scoring 8 or more being excluded, limited by the availability of the investigators. Demented patients were deemed inappropriate because a past study failed to demonstrate benefit from falls prevention interventions in patients with underlying dementia²² and because cognitive deficits could affect the ability to participate in the interview.

Patients were recruited and enrolled 7 days per week from 8 a.m to midnight, based on the availability of the investigators, with the preponderance of patients being enrolled on weekdays between 8 a.m. and 6 p.m.

Study Protocol

Interviews were conducted in patient rooms. If patients were not in a room (i.e. in a hallway bed or open waiting area), patients were taken to private consultation rooms for interview. Two investigators (DT, CR), trained by the senior author (SL) in interview techniques to minimize interviewer bias, conducted and recorded interviews. Interviews were semi-structured consisted of open-ended questions. All interviews were audio recorded and were transcribed verbatim. Periodic reviews of transcripts were performed to evaluate for emerging themes, and interviews were halted when thematic saturation was reached.

Interview Tool

Interview tool was developed by the PI (SL), based on review of the literature and expert opinion on pertinent aspects of patient perception regarding falls (Table 2). The interview tool was piloted and refined to adequately cover the scope and context of our research question.

Data Analysis

Throughout the data collection period, the transcripts were independently reviewed by two of the investigators (SL, DT). Interim analysis was conducted, and it was determined that thematic saturation was reached after enrolling 63 patients, at which point enrollment was halted. Two investigators (SL, DT) again reviewed the transcripts to gain better understanding of key concepts, context and scope²³. One reviewer (SL) then created an initial thematic framework, which was informed by previous experience, noted response patterns, and the stated aims of this study. This initial thematic framework was discussed with DT and was agreed upon. The transcripts were then reread by the two reviewers (SL, DT), independently, and codes generated inductively in accordance with established qualitative research methods based in grounded theory^{23,24}. The two reviewers (SL, DT) discussed common concepts and generated a final code list^{23,24}. The two investigators will then coded the transcript independently^{23,24}. The two reviewers (SL, DT) discussed any discrepancies and

assigned codes through negotiated consensus²³. The coded data was then organized into concepts and sub-themes, ultimately yielding an overarching theme²³. Demographic data and was calculated using Microsoft Excel.

Results

Our final sample included n=63 participants. Two participants had incomplete interviews. The average age was 79.9 years (standard deviation [SD] 8.5); there were 46 female and 17 male patients. Table 1 lists age, gender, and English-speaking status. During enrollment period, many patients were approached and either refused or were screened out for dementia. Many other patients were missed due to the availability of investigators.

Theme 1: Patients blamed falls on the environment, on themselves, on a freak accident, or on a medical condition but never noted a multifactorial rationale.

During the course of interviews, all patients either blamed their falls on a specific entity, such as *“the brick walkways,”* on themselves for being *“stupid”* or *“not paying attention,”* or on nothing at all, often stating, *“...I just fell.”* One theme that emerged early was that patients perceived the environment was at fault for their falls. People blamed things ranging from *“uneven sidewalks,”* to *“black ice,”* to a *“pile of blankets.”* One patient, when asked about her current risk factors for falls stated:

“...so, I was using the walker and I gotta tell you, I ran over a mouse, and I went back like this, and the walker fell, and I fell... If it wasn't for the mouse, none of this would have happened.”

Moments later, when asked what she would do to decrease her risk of future falls, she added, *“I don't really have any [risk factors for fall] because it was just a freak accident with that stupid mouse...”* Of the 63 participants, twenty (32%) attributed the fall to environmental factors. Further, when asked, what they *“would do in the future to decrease risk of falling,”* patients frequently responded with actions aimed only at avoiding those particular environments. For example, one patient responded to this question by saying, *“I would never go down that street again. We don't have these kinds of streets at home.”* Another patient, who fell on his home stairs, said that he would *“place chairs [between his bedroom and the stairs] to prevent [him] from reaching the stairs.”* On further probing about what he might do to prevent future falls, he only stated, *“well, the chairs change everything.”*

Another prominent sub-theme that emerged was self-blame. Many participants either referred to themselves as “*stupid*,” described “*rushing*,” or simply “*not paying attention*.” One patient encompassed all three of these principles in a response to questioning, saying, “*This one I was really stupid... not to remember that the chair was there, and I should’ve been paying attention. Yeah, and not being in such a hurry.*” Another subject responded to a question about what the fall meant to her with, “*I’m angry with myself because I’m stupid. I don’t look where I’m walking.*” Yet another patient attributes her fall to carelessness, even going as far as to actively deny there is anything else contributing to her fall, stating:

“I think in both instances it was an element of carelessness. I am always in a hurry. I feel better about that, as opposed to a serious problem. I don’t feel as if it is a medical problem, but I just need to be more careful.”

People also spoke of being otherwise “*distracted*,” “*fidgiting*,” etc. Even people who did not attribute any of these factors to their falls spoke to paying attention, slowing down, or being more aware when asked what they would do in the future to prevent falls. For example, one woman blamed her accidental fall on a “*curb*” and “*her shoes*,” but then, when asked what she would do to prevent future falls, she said: “*It’s the shoes; I was going to throw them away. [I] really have to be careful about other things, and not be distracted.*”

Freak accidents were another recurring subtheme. Many patients described the events as things that just happened. People described going “*flying*” out of nowhere and sensations of being “*thrown*,” with no clear antecedent event. For instance, one patient who fell stated, “*I wiggled myself out of the chair, took two steps to the phone, turned around, and the next thing you know I’m sailing across the room.*” Another man described his fall as, “*I was just walking and ,wow, it was like somebody threw me.*” While several participants alluded to the idea that this fall was just a freak accident, many people plainly described it as such. “*I mean, well, it just happened...just a freak accident,*” one subject said in response to the question of what the fall meant to her. Another man responded to that same question with, “*nothing, it was a fluke.*”

Some patients demonstrated some understanding of medical conditions as potential fall risks, with many citing strength or balance as important factors, while

others tended to cite specific body parts as issues. One patient, for example, cites balance, but like in other cases, she immediately diminishes the relevance to this particular fall: “...you know I have balance issues, so I have to be careful. But I don’t fall because of those.” Another patient who stated he had no risk factors for falls, said this when asked what he would do to prevent future falls: “Be a little more careful that’s all. Vertigo has been awful. I never had good balance.” Overall, 17 patients (27%) mentioned balance as a issue during the interviews, but none of them addressed the issue as part of a group of risks, and only one spoke of therapy aimed at improving balance. Weakness, both general and of a specific body part, was mentioned by several of the participants. One patient said, “my legs get weak, and then...,” not understanding what makes him fall. Another man said, “...my knee that I had surgery [on] is very weak and painful. I don’t think I could ever have a second knee surgery.”

In all, many patients placed blame on a variation of things, but no patients described multifactorial causes of these falls. Some patients, although few (3 patients), did attribute their falls to “getting old,” which does perhaps acknowledge some multifactorial aspects in an indirect way. However, even in those patients there were efforts to walk these back as risk factors. For example, one patient said:

“Oh boy, risk factors... well I have, although it doesn’t have anything to do with it, I have positional vertigo... I find that when I get older, that didn’t have anything to do with this particular fall um, but um, I just um, as I get older I am more unsteady.”

Theme 2: Patients have variable emotions about current fall and variable concerns about future fall risk, ranging from extremely concerned to not at all concerned.

Although 37 patients were concerned (“extremely,” “mildly,” “a little,” “somewhat”), 26 patients (41%) were either “not concerned” or were indifferent. Of those 26 patients, 21 of them were coded as not concerned. Patients who were not concerned frequently had short answers to questions that addressed their level of concern for risk of future falls such as, “no,” “I’m not concerned,” and “not at all.” Only 19 of 63 patients (30%) directly admitted to having risk factors when asked. There were

again several who listed risk factors, as above, but subsequently denied or diminished their importance or relevance. Further, 40 of 63 patients (63%) denied having or did not know if they had any risk factors for future falls, with 28 participants denying having any risk factors all together. Further, several participants cited mitigating factors, such as baseline activity, as potentially protective factors. For instance, one participant when asked about his risk for future falls stated, *"I am very active, and I workout and stuff. So, I don't think so. My balance is good. I try and do stuff too fast; I am very abrupt with my movements and turning."* Another participant who stated he had no risk factors later said, *"...you need to know in what condition the person is in. If a person has rheumatism, these people are in bad shape. You may need to do something for them. As for me, I tripped while I was jogging."*

The majority of patients were concerned to some degree. Some of these participants exhibited low to moderate level of concern, as in, *"I'd say I'm a little concerned about falling again. I took a little spill today, and I can tell you this isn't fun;"* or another, who simply replied, *"[I'm] moderately concerned."* Others voiced more concern, with many stating they were *"extremely concerned"* or *"very concerned."* One subject, for example, said she was *"scared...very concerned, absolutely."* Another said, *"[falling] is always in the back of my mind."*

Slightly more than half of the subjects described ways in which they would prevent future falls, given their concern. However, a minority of patients put forth actionable items when asked what they would do to decrease risk of future falls. The most common theme put forth in response to this question was to elevate the level of attentiveness. A majority of these responses involved *"being more careful," "paying attention,"* or *"being more aware,"* with 27 (43%) participants offering one of these up as the primary method of risk reduction. In contrast, 4 (6%) subjects mentioned some form of therapy or exercise, and only 7 (11%) subjects said they would employ the use of stabilizing devices, such as canes, walkers, wheelchairs, or the use of handrails.

For some participants, the utilization of the above strategies (i.e. being careful and using a walker) negated the perception of any risk. One patient with previous falls told us, *"I haven't fallen for about 2-3 years, so [I don't have any risk factors]."* He then went on to say he is *"not concerned"* regarding his risk of falling, explaining, *"I have my*

walker, and I am cautious of it.” Then, when asked what he would do to decrease his risk of falling, he responded by simply saying, “nothing.”

Ultimately, there was a wide range of response around questions of concern and risk. Overall, there seemed to be a mismatch of real and perceived risk. The subjects also appear to rely heavily on paying attention and being careful in efforts to prevent future falls, whereas there seems to be little focus on use of physical therapy or stabilizing devices, such as canes and walkers. There was also, notably, no mention of medication reviews or other non-surgical interventions.

Theme 3: Patients demonstrated a range of receptiveness to ED interventions aimed at preventing falls, with very little input as to what those interventions should be.

We asked patients two questions regarding ED interventions aimed at preventing falls. 1. “How would you feel about the emergency department trying to prevent you from falling in the future?” 2. “What would you think should be part of an ED effort to prevent you falling again?” Question #1 was added to the original interview tool during the data collection process to more adequately address the scope of our research aims.

Answers ranged widely. There were many patients who seemed receptive to the idea of an intervention, but few of them had ideas about what that should entail. For instance, one person who was open to ED intervention said, “I don’t know what you could do, but I guess if you could do something, that would be great. But, I don’t know what that is.” Another participant, seemingly unsure of what that might entail asked, “Can you do that? I don’t know about that.” Although most patients viewed ED intervention positively, with statements ranging from “...why not?” to “I would love that,” still there were some who thought it was unnecessary or had clear trepidation. These answers ranged from outright rejection, e.g. “I don’t need that,” to patients saying, “I don’t know how I would feel about that.”

When it came to patient perspectives about what might be part of an ED intervention, there were few who offered up ideas. Most participants either stated, “I don’t know,” or they used praise of the ED physicians to the effect that there was nothing left to do. For example, one patient responded:

“Everything’s been perfect I have no complaints. Treated me well, watching my blood pressure which goes up when this happens and I am sure I’ll be taken care of. I can’t complain as far as I know they are doing everything fine. They put me in. I’m here; somebody’s here with me. The doctors have been in. I have no complaints.”

Another stated, *“My care was very good right down to the ambulance drivers and I had a great experience. Were doing great.”* Though most didn’t offer ideas about what should be done in the ED, there were others who thought it might be appropriate to speak with or coach patients about falls. One woman told us, *“... Maybe talk to elderly people about their balance and maybe some exercises we can do.”* While another participant said ED physicians should talk about specific environmental changes, saying:

“Do know that you should never put loose carpets and Persians down. I think care should be taken in the shower. I think a great deal of falls are in the shower. We mustn’t trifle with our strength and ability to walk.”

Yet another said we should talk to patients about their physical limitations and possible ways to overcome them, offering:

“Tell them... One of the things that they teach you once you have an operation is how to use your other appendages to do things, to get up...to stay up. You could teach people. You have to be sure to let seniors know is there is no shame. Be sure that people know that as you get older, the first thing to go is your legs. They need to remember that they have to work on their strength. You need to tell people to exercise. You have to teach people to take care of themselves and to exercise because the body is made for exercise... It’s made to be used.”

In all, subjects had varying opinions and receptiveness regarding ED interventions. Further, very few offered any ideas regarding what the ED might be able to do to prevent falls. If any concept emerged, it was that the ED physicians should talk to patients about their falls and perhaps about some things they could do to reduce their risk of future falls.

Discussion, Limitations, Conclusions

Discussion

This study is the first to examine the perspectives of older adults (aged 65 and older) who had recently fallen and who were patients in an emergency department. Falls are a leading cause of preventable injury, functional disability, and mortality in the older adult population¹, and they cost our health care system \$34 billion annually². In this vulnerable population, falls leading to ED presentation are widely recognized as sentinel events warranting sentinel responses. As part of an appropriate response, the Geriatric Emergency Department Guidelines recommend conducting multifactorial evaluations of older ED fall patients and subsequent involvement of multidisciplinary groups for falls prevention¹⁸. However, for this to be successful, patients must have some understanding of their fall risk and be willing and open to participate in such an intervention. Our study provides important insight into patient understanding of their personal fall risk profiles and their attitudes toward intervention by ED physicians. This insight could help guide patient-physician conversations directed at counseling or at referral to multidisciplinary teams aiming to prevent future falls. Further, this study helps contextualize the many variables and patient factors that could serve as potential barriers to care.

In our study, we found the patients blamed many different things for their falls, most prominently, self and the environment, but no participants understood the multifactorial nature of older adult fall risk²⁵⁻²⁸. Some patients did recognize that their advancing age could perhaps be contributing to their fall risk, which is in some ways multifactorial, although never made explicit. It is not surprising that patients tended to blame the environment, as a previous study of community-dwelling older adults showed outside environmental factors were perceived to be the only important factors for personal risk of fall²⁰. However, “paying attention” was viewed as relatively unimportant²⁰ in a previous study, but was viewed as a common cause of blame for falls in our patient group. This highlights key differences in both perspective and context

between community-dwelling adults who have not recently fallen and those who are in the immediate aftermath of a fall necessitating an ED visit.

This study also found there was varied level of concern and emotional response in older adults who had recently fallen. In some ways, these findings are consistent with previous studies carried out in non-clinical settings, in that diminishment of personal risk was frequent^{19,20}. However, unlike those studies^{19,20}, the majority of our subject group was concerned (“mildly” to “extremely”) about future falls, irrespective of their perspectives on personal risk; whereas, community-dwelling people without a recent fall tended to be less concerned^{19,20}. This is an important distinction because the effectiveness of some health behavior interventions may rely on motivational factors, such as concern²⁹. Level of concern is a major driver of consciousness raising, which has the potential to make ED visits in older adults, who are *status post* fall, important teachable moments^{29,30}.

Lastly, we found that patients varied in terms of receptiveness to ED intervention and as to what such an intervention might entail. Patients in community-based studies rejected interventions, dismissing them as not personally relevant^{19,20}. However, participants in this study differed from previous studies in that a majority of participants in the ED viewed the idea of a falls prevention intervention positively. Whereas in the community, this population rejected falls prevention interventions, including advice, viewing fall-prevention advice as potentially patronizing and distressing¹⁹, the patients in our study who offered up potential interventions overwhelmingly recommended advice and counseling. This supports our thought that proximity to a fall and the setting of an emergency department have the potential to transform the way patients approach falls prevention strategies. Thus, the ED could be an ideal place to intervene, improving the health of this population^{31,32} and reducing health care costs³³.

Limitations

There were many limitations of this study. The external validity may be limited by population characteristics and severity of illness differences amongst emergency departments. Our sample was unbalanced with respect to gender, but we feel we

interviewed enough subjects to reasonably overcome gender differences. The sample is not purposive, but this seems reasonable for pilot purposes. Further, like many other qualitative studies, this study utilized a small sample size. Our study inherently lacks application to a sicker population of elderly fallers who have dementia or who live in skilled nursing facilities or are otherwise institutionalized. Also, subjects who are not demented but have acute mental status changes, will likely be screened out of the study by the 6CIT dementia screening tool, which is reasonable because studies of falls prevention program efficacy have failed to demonstrate an effect in older adults with dementia²². Further, answers could be influenced by demand characteristics inherent to our study causing subjects to take on different roles (i.e. the good or apprehensive participant roles).

Conclusions

Patients do not understand the full spectrum of fall risk and often blame themselves for not paying attention, blame the environment, or blame another factor. Although patients' openness to intervention and their concern for future falls is variable, they tend to be more concerned about fall risk and more interested in falls prevention interventions in the ED, after a fall, than healthy older adults in the community. This may make the ED an ideal setting for a falls prevention intervention.

ED interventions aimed at preventing falls in older adults have great potential to make an impact; however, ED providers will first have to educate their fall patients that fall risk is multifactorial, and that they require multifactorial risk assessment and targeted fall reduction intervention.

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Tables

Table 1. Participant characteristics

Characteristic	
Sex, <i>n</i> (%)	
Male	17 (27)
Female	46 (73)
Age (yr), <i>mean</i> (<i>SD</i>)	79.8 (8.5)
English Speaking, <i>n</i> (%)	
Yes	61 (97)
No	2 (3)

Table 2. Key Interview Tool Questions

Concept	Questions
Emotion/Perception of fall	<i>What does this fall mean to you?</i> <i>How concerned are you regarding your risk of falling again?</i>
Perceived Risk	<i>What risk factors do you have for falls?</i> <i>What would you do to decrease your risk of fall?</i>
Perception of ED intervention	<i>How would you feel about the emergency department trying to prevent you falling in the future?</i> <i>What would you think should be part of an ED effort to prevent you falling again?</i>