



# RESEARCH BRIEF

## EXAMINING THE LINKS BETWEEN FEAR OF FALLING, VISUAL IMPAIRMENT AND MOBILITY IN COMMUNITY- DWELLING OLDER IRISH ADULTS

**ORNA DONOGHUE**

**DECEMBER 2014**

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ORNA DONOGHUE<sup>1</sup>

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One in three adults aged 65 and older fall every year. As falls are the leading cause of injury, disability and admission to nursing homes for this group, it is not surprising that many older adults are afraid of falling, even those who have no history of falls. Previous research has found that older adults with fear of falling are almost twice as likely to fall within a 20 month period while those with a history of falls are almost twice as likely to develop fear of falling in the same time period.<sup>1</sup> These strong links between falls and fear of falling, therefore, create a vicious cycle in which one increases the risk of the other.

In some cases, fear of falling can cause older adults to avoid activities that they are capable of performing, leading to social isolation and reduced strength, fitness and mobility. Mobility reflects an individual's ability to move freely and easily, and walking is an important component of this. Having a walking impairment is one of the biggest risk factors for falls.

Many factors affect walking ability including age, poor cognitive function, poor vision and depression. Fear of falling is also associated with walking impairments but we do not fully understand this relationship, the impact of these other factors, and how this relates to the risk of falls. However, we do know that mobility can be improved and fear of falling can be reduced, for example with tai chi or home-based fall prevention programmes.<sup>2</sup> Therefore, it is important to examine these relationships and how they may lead to an increased fall risk so that clinicians can identify the best ways to improve mobility, reduce fear of falling and prevent falls.

Data from the first wave of The Irish Longitudinal Study on Ageing (TILDA) provides a unique opportunity to examine fear of falling and mobility in a nationally representative sample of community-dwelling older Irish adults. In our initial analysis, we examined two research questions:

- (i) How does fear of falling affect walking patterns?<sup>3</sup>
- (ii) Is visual impairment associated with fear of falling, and if so, how does it affect mobility in people with fear of falling?<sup>4</sup>

These papers focus on those aged 65 and over as this is the group most at risk for falls and disability.

## HOW WAS FEAR OF FALLING ASSESSED AND HOW COMMON IS IT?

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Participants completed a face-to-face interview during which they were asked if they were afraid of falling and if this caused them to limit their activities, such as where they go or what they do. This information was used to classify participants into three groups – (i) those with no fear of falling, (ii) those with fear of falling but no activity restriction, and (iii) those with fear-related activity restriction. In TILDA, 21% of adults aged 65 and over reported fear of falling, while an additional 11% restricted their activity as a result of this fear. Women were more likely to report fear of falling than men (44% versus 17%) and it becomes more common with increasing age (22% of 65-69 year olds report it compared to 45% of the over 80s). As noted, fear of falling is common even in those with no history of falls; 29% of those with no history of falling reported fear of falling compared to 43% of those who had reported a fall.

## WHAT TYPE OF MOBILITY TESTS AND VISION MEASUREMENTS WERE TAKEN?

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Participants completed three mobility tests during a detailed health assessment carried out by research nurses. Their walking patterns were recorded as they walked along a sensed mat connected to a computer. This provided information about their walking speed, how long and wide their steps were and how long they spent with both feet on the ground. As well as walking normally, participants completed a 'walking while talking' task in which they walked while reciting every second letter of the alphabet (i.e. A-C-E). Participants also completed the Timed Up-and-Go, a simple mobility test where they stood up from a chair, walked 3 metres, turned around, walked back to the chair and sat down again.

Participants self-rated their vision as Excellent, Very Good, Good, Fair or Poor during the interview and completed two vision tests during the health assessment – visual acuity and contrast sensitivity. In the visual acuity test, participants were asked to read black letters on a white background. This is a common vision test, often used by opticians and doctors to assess how clear an individual's vision is. In the contrast sensitivity test, participants were asked to distinguish a series of grey lines from a grey background. The varying contrast between the lines and the background identifies the participant's ability to distinguish

between objects in poor contrast or low light conditions (e.g. a change in floor surface or seeing objects at dusk).

### HOW DOES FEAR OF FALLING AFFECT WALKING PATTERNS?

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Older adults with fear of falling, and especially fear-related activity restriction, walked more slowly and took shorter steps than those who were not afraid of falling in all walking tests. This was true even after taking physical and mental health and cognitive function into account. In certain situations such as in icy conditions, walking slowly and more cautiously is an important way to increase stability. However, long-term changes to normal walking patterns may increase the risk of falls, disability and other adverse outcomes.<sup>5</sup>

### WHAT IMPACT DOES VISION HAVE ON FEAR OF FALLING AND MOBILITY?

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Older adults with poor self-rated vision were more likely to report fear of falling and fear-related activity restriction but there was no relationship with measured visual function (i.e. visual acuity or contrast sensitivity). However, older adults with the lowest level of visual function combined with fear-related activity restriction, had the slowest Timed Up-and-Go performance, indicating the largest impairment in mobility. This highlights the important role that vision plays in mobility for older people with fear-related activity restriction.

### WHAT DO THESE FINDINGS MEAN?

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These findings have important implications for policymakers and practitioners:

- (i) Clinicians need to recognise fear of falling and manage it before it leads to activity restriction.
- (ii) Clinicians should assess walking ability in older adults with fear of falling and provide guidance on appropriate exercise interventions that improve physical function including walking.
- (iii) A comprehensive vision assessment should be included for older adults, especially those who have reported fear of falling. Appropriate prescription of visual aids is encouraged along with advice on environmental adaptations to improve visual function especially in low light and poor contrast conditions.

## REFERENCES

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Researchers interested in using TILDA data may access the data for free from the following sites:

- Irish Social Science Data Archive (ISSDA) at University College Dublin  
<http://www.ucd.ie/issda/data/tilda/>
- Interuniversity Consortium for Political and Social Research (ICPSR) at the University of Michigan  
<http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/34315>

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<sup>i</sup> [odonogh@tcd.ie](mailto:odonogh@tcd.ie)