

Understanding Fear of Falling in the Elderly through the Fear Avoidance Model

Sanah Singh, 4th Year Medical Student, Lancaster Medical School and Lauren Fothergill, Health Research Lancaster University

INTRODUCTION

Aging is a natural experience we all share. It is associated with countless changes within our bodies and transitions in self-perception. As medical professionals, geriatric care and optimising health in old age is a crucial part of our training. One of the most common presentations, and arguably an unfavourable sign of holistic health in an elderly patient, is the occurrence of falls.

Falls account for numerous injuries and high numbers of morbidity and mortality.¹ Impact from a single fall can lead to premature admissions into nursing homes and further loss of independence.¹ One-third of patients above the age of 65 and almost half of patients over 80 experience a fall every year.²

Hip fracture, a common injury due to falls in the elderly with weak bone health, account for 1.8 million beds a year and over one billion pounds per year in treatment. There is an associated 15-20% mortality within one year of a hip fracture; furthermore, only one-third of patients are expected to survive over five years after a hip fracture.³ Prognosis is likely to be worse in elderly, frail and co-morbid patients. This might be due to multifactorial aspects that must be addressed in order to optimise their health after a fall.

Everyone's experience of aging is unique. However, it is interesting to learn that disease or disability in almost every system of the body can lead to the occurrence of falls. They may also occur in the absence of physiological diseases. There is vast evidence to support that having a history of falls can lead to individuals developing a persistent fear of falling (FOF) which in turn increases the risk of falling.⁴ Over 50% of people over the age of 65 experience FOF.⁵ Due to these statistics, it is important to understand how fear settles in and the impact it has over the lives of the elderly; moreover, what can doctors and other medical professionals do to prevent this fear and loss of independence.

This paper will address the development of (FOF) by using the Fear Avoidance Model, addressing how painful experiences can lead to restrictions in activity. This will be followed by understanding current measures that are in place to help patients deal with the FOF and what research suggests should be done to address this issue. I will be reflecting upon personal experiences from placements to further emphasise the burden falls pose over our health service as well as on the individual patient.

THE FEAR AVOIDANCE MODEL AND FOF

Fear is anticipatory emotion, allowing us to protect ourselves from situations we perceive as threats.⁶ However, feeling fear towards experiences that are not actually harmful can lead to unnecessary restrictions which can be detrimental to our health.⁶ The fear avoidance model was originally conceptualised to understand the psychological impact of chronic pain. The model showcases two main pathways that individuals experiencing pain can go through. The first pathway highlights how a painful experience is followed by individuals confronting and recovering from the event. They don't allow the fear towards the experience to manifest. The second pathway

showcases how painful experiences are catastrophised, causing fear towards them to build up. This leads to avoidance and disability. This can be further aggravated by negative affectivity, such as negative emotions and external influences that increase the fear towards an experience.⁷



Fear Avoidance Model⁷

I decided to use this model to analyse FOF as, similar to chronic pain, FOF may manifest due to a number of reasons. FOF can be defined as “a lasting concern about falling that leads to an individual avoiding activities that they remain capable of performing”.⁵ FOF may exist irrespective of a patient's past fall or medical history. The psychological block alone may lead to avoidance behaviour. I found this to be quite evident amongst patients that were medically deemed to be fit and mobile, however, would decrease their mobility and activity after a single fall solely due to the fear of presenting with similar trauma again.

Despite the varied presentation of falls and how they might have occurred, when asked about mental wellbeing and impact of the injury, I found some common threads among most patients that could be indicative of FOF settling in. Alongside the research done and my personal reflections through clinical placement, there were four main factors that stood out and might be crucial in the manifestation of FOF. These were negative emotions; disease and fall histories; self-perceived burden and ageism.

1. Negative Emotions

Under the model's theory, negative affectivity towards an experience can further exaggerate its pain.⁵ A structured interview conducted by Holloway et al concluded that among 863 elderly patients (over 65), those with anxiety or anxious beliefs towards their balance and movements were three times more likely to fall than those without.⁸ Anxiety can be difficult to pick up amongst the elderly due to the increased incidence of disease and other mental disorders common in old age.⁹ They might also experience anxiety differently than younger adults. Anxiety in older age is more likely to be characterised through fearfulness and guilt.¹⁰

During my clinical geriatric placement, I spoke to several patients that had experienced a fall. Most of them complained about uncertainty when standing up or hesitation

when thinking about moving. It was interesting to note that a significant amount of these patients had come into the hospital due to their very first fall. When asked about their fear and reluctance, most patients expressed concerns linked to anxiety and uneasiness they felt while moving. Presence of anxiety and negative views towards mobility alone can be responsible for increased amounts of FOF regardless of physical health and ability.⁵

Other negative emotions, such as depression and neuroticism, are also associated with increased levels of FOF.⁵ A patient with Parkinson's disease stated that she would take hours to get up off her bed and go to the bathroom. She lived by herself and expressed symptoms of depression and loneliness causing her to restrict her movements as she had no immediate help present. Depression can be common amongst the elderly due to major life changes such as reduced physical functioning and loss of social support.¹¹ Chronic conditions might also make the elderly more likely to suffer from depressive disorders.¹² Associated symptoms of depression, such as reduced self-esteem, distractedness and fatigue might increase FOF.¹³

2. Diseases and Fall History

A significant fall history is perhaps the most obvious reason for developing FOF. Several studies use the Fall Efficacy Scale (FES)¹⁴ to quantify FOF based on previous falls. They concluded that the higher the FES, the more likely the presence of FOF.¹⁵ Aging is also associated with reduced posture control, body orientation and loss of muscle strength and tone.¹ Loss of these key sensations would increase the risk of falling and also elevate fear.

The post fall syndrome (PFS) is another adaptive phenomenon that helps address the psychomotor adaptations that occur after a fall, leading to non-economical postural changes, increasing the risk of falling.¹⁵ Understanding this syndrome might be extremely useful and helpful to medical professionals as it highlights the physical manifestations of FOF. These can be a lot easier to spot than psychological blocks which require an open and honest conversation with patients.

Features such as floor gripping, slower gaits and reduced stride are common features of PFS.¹⁵ A study in Madrid, highlighted how features of PFS can be present during post-surgical physiotherapy and concluded that this led to increased length of hospital admissions as patients are reluctant to move.¹⁶ The restriction in movement can persist even after discharge. PFS is a relatively new term and lacks a formal criteria to identify it. The PFS was an aspect quite evident in patients I spoke to a few days after their hip or knee replacement surgeries. In discussion with patients, a lot of them described a hesitancy towards walking that wasn't entirely intentional or pain related. Taking shorter steps, walking slower or shuffling could all be manifestations of the PFS. If not discussed or confronted with patients, they become habitual.

However, this might be due to the spiralling effect of FOF and falls, having either one of these increases the risk of developing the other, hence making it difficult to assess causality. In terms of avoidance behaviour, a cohort study by Delbaere et al concluded that having a fall history increased the incidence of avoidance behaviour. FOF, however was present regardless of a significant fall history.¹⁷ Over time

preventative and avoidant measures might reduce falls, but may increase FOF which may deteriorate health in other ways.

3. Self-Perceived Burden (SPB)

Alongside the negative affectivity and emotions that the elderly might associate with falls, not all patients regard their FOF to be stemming solely from anxiety or depression. Several patients spoken to during placement suggested that repeatedly falling despite receiving care and physiotherapy was demotivating. They felt embarrassed receiving medical interventions for something as simple as maintaining balance and walking, an aspect of daily functioning most of us take for granted. According to a report by Age UK, a survey of over 700 people aged over 65 stated that they feel like a "burden" over the wider society.¹⁸ Feeling like a burden is common amongst those with chronic illnesses, pain and frailty and can heavily impact the relationship the elderly share with medical professionals and care-givers.

A small focus group study looked into the impact that falls had over patients and their care-givers. One of the key points participants were asked about was the impact they felt their falls had over others. Most of the comments recorded suggested how everyone took extra care of them, often sacrificing other commitments to do so. This led to some of the participants hiding falls and trips experienced by them and avoiding certain activities all together in order to reduce the burden.¹⁹ Negative correlations between self-management behaviour and SPB reduced patient motivation to cope with physical and psychological consequences of chronic diseases.²⁰ Hence, fall management might need to address personal values and beliefs, motivating individuals to keep trying and explore their ideas of SPB.

4. Ageism

During clinical placement, elderly patients coming in due to a fall was the most common presentation and hence, I felt that at time, multi-disciplinary teams that worked with these patients had somewhat of a disassociated attitude towards falls. Falls are a good example of issues the elderly are just "meant to accept" much like forgetting names or hearing differently. It can be difficult to change the attitude toward normal age-related deficits, especially for healthcare workers as we deal with similar presentations every day. Over 90% of the people aged over 65 live at home and are independent.²¹ However, healthcare professionals usually only see the portion of the elderly that require more advanced care and are less likely to recover even with adaptations in place.

A 2019 retrospective study from Newcastle University interviewed both patients and professionals to see how stigmatisation, especially ageist attitudes might be another reason for FOF to be established. They concluded that ageism and lack of motivation from professionals can lead to long term disabilities.²¹ More interestingly, internalised ageism stemmed from interventions that re-iterated to patients the extra support they need to do simple tasks. An example of this would be the presence of handrails in bathrooms.²³ Influences of key care-givers can impact self-perceptions of aging which in turn can impact how the elderly deal with their health.

Studies have suggested that the more positive views elderly associate with aging, the less likely they are to associate negative emotions to obstacles, such as falls and inculcate

avoidant behaviour.²² Ageism can be subtle and indirect where elderly patients are at a disadvantage due to the way care is offered. For example, minimising inpatient stay might lead to health services not fully addressing patient concerns, such as FOF which is subtle and takes time to work through. As an aging population, mostly due to the betterment of medical care, it is important to consider the stages and progression of disability.²³ Simply adding aids and implementing functional changes might not be enough to address falls. FOF is neither picked up nor addressed by these interventions, but it might re-iterate loss of functionality potentially leading to avoidant behaviour.

INTERVENTIONS FOR DEALING WITH FOF

Current guidelines by the National Institute for Health and Care Excellence (NICE) suggest a multifactorial assessment when dealing with falls. This includes questioning patients regarding any “fears they have associated to falling in addition to physical assessments of gait, balance as well as home hazards”.²³ However, multifactorial interventions do not explicitly state the term FOF or any psychological interventions that might help address it. Specific emphasis is placed upon strength and balance training, hazard assessment, vision referrals and medication reviews.²³ Although these thorough interventions will identify and fix most of the physical risks leading to falls, they might only be short-term fixes.

A small 2018 study looking at integrated exposure therapy in 42 patients compared the use of two interventions, ABLE (Activity, Balance, Learning and Exposure) and FPE (Fall Prevention Education) to see which of the two was more effective in addressing both FOF and disability in elderly patients. Even though no significant difference was found between the effectivity of the two studies, it did conclude that addressing mental health and anxiety was crucial to helping patients recover and reduce FOF.²⁴ When taking histories from patients recovering from fall-related complications, it was evident that lots of them felt the pressure to mobilise and practice walking in the hospital. While this was crucial, as being immobile does not aid recovery, psychological therapy was not a part of the multi-disciplinary approach to helping these patients recover.

Physiotherapy and occupational therapy are crucial in getting patients back up on their feet and mobilising, especially at home. However, they fail to address the psychological impact a fall might have had over the patient; hence it might be useful integrating some form of psychological assessment before patients are discharged after surgery. For example, using the Fall Efficacy Scale (FES) could be useful in quantifying the FOF that might exist.

Furthermore, this might allow medical practitioners to signpost and perhaps even directly refer patients towards services where they can receive additional support. The NICE guidelines do encourage patients to get involved in fall prevention programmes.²³ However, given the impact self-perceived burden and negative emotions can have over elderly patients, they might be less likely to reach out and ask for help; hence, it might be useful to integrate psychological screening of FOF into the multi-disciplinary approach, much like physiotherapy and occupational therapy.

The Post Fall Syndrome (PFS)¹⁵ might serve as another helpful indicator in order to screen for FOF. As suggested by

the syndrome, physical manifestation of FOF might be present soon after major interventions such as surgery. For some, these might only be present in the short term as the patient could be in pain. However, it might be worth confronting patients regarding their minor adaptive behaviour and make sure that these don't manifest into permanent activity restrictions.

With regard to the Fear Avoidance Model, another aspect of treating fear avoidance is acceptance and commitment therapy.²⁵ This urges patients to understand that certain types of pains are a part of life and it should not hinder activities of daily living. Patients that receive a combination of both physiotherapy and psychological therapy are more likely to stay active and mobile rather than those just receiving physiotherapy alone.

Another crucial aspect that might not be directly addressed through physiotherapy or occupational therapy is how their involvement might be demotivating for some patients. As mentioned by the Newcastle study above, several patients found the presence of handrails, mobility supports and other home interventions a harsh reality to face, mocking how they needed support to carry out daily tasks.²¹ This could demotivate them from using aids and inculcate avoidant behaviour. Additional psychological therapy might reduce the negative emotions some elderly might associate with aid being given, as well as address fear and anxiety. Anxiety might still be present even though interventions and aids are in place; hence, helping these patients accept support without blatantly assuming it will be used might be key in reducing FOF.

I believe further research into the Fear Avoidance Model and FOF may lead to medical practitioners accepting that falls are not a quick fix. The avoidance model showcases the two possible paths patients can fall into after a traumatic experience or injury. Having open conversations regarding mobility and normalising the fear that exists around it might be a simple yet crucial factor in challenging and changing the way patients view themselves and their physical health after falls.

CONCLUSION

Falls, even though frequently expressed by the elderly, are not age specific. At any age, falling can lead to embarrassment and loss of control.²⁵ The associated FOF does not only represent the pain and injury-related complications, but also more subtle psychological aspects. For an aging individual this might highlight the physical decline we are all inevitably going to experience. Hence, interventions as recommended by NICE, although effective in fear-confrontation, solely focus on mobility-based adjustments. The fear avoidance model provides a lens through which common causes of FOF such as negative emotions, extensive fall histories, self-perceived burden and ageism can be dissected. These causes represent the psychological aspect of FOF, that left unaddressed will continue to diminish the current efforts taken to reduce falls. As per the literature presented, a more holistic approach might provide reassurance, giving the elderly the confidence to continue with daily activities and remove the looming thoughts of doubts and apprehensions.

Aging changes us humans in every aspect of life, both physical and mental, addressing injuries and disease must target both these aspects. As a medical student basing my

Understanding Fear of Falling in the Elderly through the Fear Avoidance Model

Sanah Singh, Lauren Fothergill

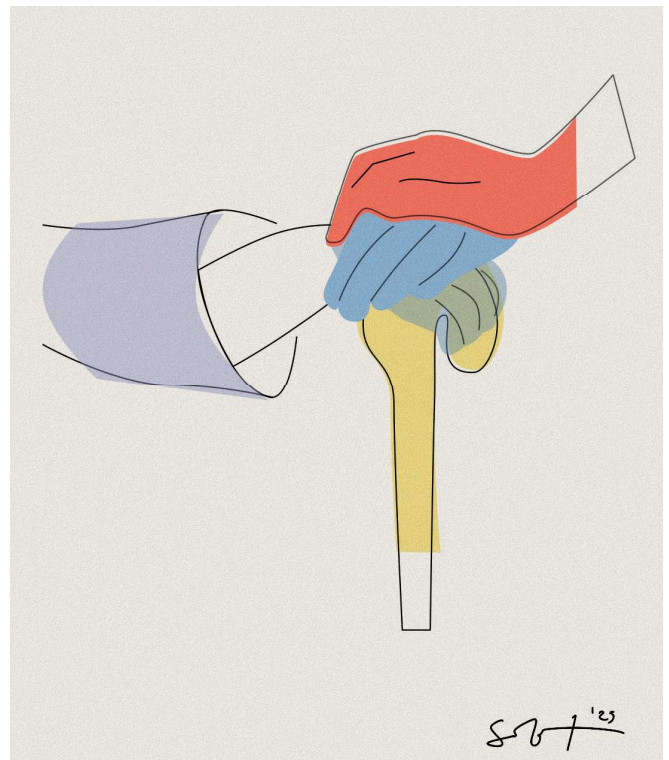
learning through clinical experiences and patient interactions, I intuit that although physical and mental health go hand-in-hand at times, explicitly addressing these aspects can also encourage patients to be reassured that we aim to support all aspects of health. This holistic approach is something I hope to incorporate into my own clinical practice as a graduate.

Correspondence to:

s.singh27@lancaster.ac.uk, l.fothergill1@lancaster.ac.uk

REFERENCES

1. Berg RL. The second fifty years: promoting health and preventing disability. 2nd ed. Washington, DC: National Academies Press (US); 1992. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK235613/> (accessed 05 April 2023)
2. Ambrose AF, Paul G, Hausdorff JM. Risk factors for falls among older adults: A review of the literature. *Maturitas*. 2013;75(1):51-61. Available from: <https://doi.org/10.1016/j.maturitas.2013.02.009>
3. Public Health England. Falls: applying All Our Health. GOV.UK. 2022. Available from: <https://www.gov.uk/government/publications/falls-applying-all-our-health/falls-applying-all-our-health> (accessed 05 April 2023)
4. Lavedán A, Viladrosa M, Jürschik P, et al. Fear of falling in community-dwelling older adults: A cause of falls, a consequence, or both? *PLOS ONE*. 2018;13(3):e0194967. Available from: <https://doi.org/10.1371/journal.pone.0194967>
5. Peeters G, Bennett M, Donoghue O, Kennelly S, Kenny R. Understanding the aetiology of fear of falling from the perspective of a fear-avoidance model. A narrative review. *Clin Psychol Rev*. 2020;79:101862. Available from: <https://doi.org/10.1016/j.cpr.2020.101862>
6. Vlaeyen JWS, Crombez G, Linton S. The fear-avoidance model of pain. *Pain*. 2022;157(8):1588-89. Available from: <https://doi.org/10.1097/j.pain.0000000000000574>
7. Fear Avoidance Model. *Physiopedia*. 2022. Available from: https://www.physio-pedia.com/Fear_Avoidance_Model (accessed 27 April 2022)
8. Holloway KL, Williams LJ, Brennan-Olsen SL, et al. Anxiety disorders and falls among older adults. *J Affect Disord*. 2016;205:20-7. Available from: <https://doi.org/10.1016/j.jad.2016.06.052>
9. Balsamo M, Cataldi F, Carlucci L, Fairfield B. Assessment of anxiety in older adults: a review of self-report measures. *Clin Interv Aging*. 2018;13:573-593. Available from: <https://doi.org/10.2147/CLIA.S114100>
10. Lawton M, Kleban M, Dean J. Affect and age: Cross-sectional comparisons of structure and prevalence. *Psychol Aging*, 1993;8(2):165-175. Available from: <https://doi.org/10.1037//0882-7974.8.2.165>
11. Aneshensel CS, Frerichs RR, Huba GJ. Depression and Physical Illness: A multiwave, nonrecursive causal model. *J Health Soc Behav*. 1984;25(4):350. Available from: <https://pubmed.ncbi.nlm.nih.gov/6520358/>
12. Aina Y, Susman JL. Understanding comorbidity with depression and anxiety disorders. *J Am Osteopath Assoc*. 2006;106(5 supp2):S9-14.
13. Hoffman GJ, Hays RD, Wallace SP, Shapiro M, Ettner SL. Depressive symptomatology and fall risk among community-dwelling older adults. *Soc Sci Med*. 2017;178:206-13. Available from: <https://doi.org/10.1016/j.socscimed.2017.02.020>
14. Makino K, Makizako H, Doi T, et al. Fear of falling and gait parameters in older adults with and without fall history. *Geriatr Gerontol Int*. 2017;17(12):2455-9. Available from: <https://doi.org/10.1111/ggi.13102>
15. Bru V. Post fall syndrome and recovery for elderly people. *MyFrenchPhysio*. 2016. Available from: <https://myfrenchphysio.london/post-fall-recovery-elderly-people/#:~:text=Post%20Fall%20Syndrome%20or%20Psychomotor> (accessed 27 April 2022)
16. Alarcon T, Gonzalez-Montalvo JI, Barcena A, Gotor P. Post-fall syndrome: a matter to study in patients with hip fractures admitted to orthopaedic wards. *Age Ageing*. 2006;35(2):205-6. Available from: <https://doi.org/10.1093/ageing/afj046>
17. Delbaere K, Crombez G, Vanderstraeten G, Willems T, Cambier D. Fear-related avoidance of activities, falls and physical frailty. A prospective community-based cohort study. *Age Ageing*. 2004;33(4):368-73. Available from: <https://doi.org/10.1093/ageing/afh106>
18. Age UK. Older people "feel a burden" to society. Age UK. 26 June 2013 Available from: <https://www.ageuk.org.uk/latest-news/archive/older-people-feel-a-burden-to-society/> (accessed 05 April 2023)
19. Munford D, Gunn H. What are the perceptions and experiences of falls amongst people with stroke who live in the community? *Disabil Rehabil*. 2020;42(5):722-729. Available from: <https://doi.org/10.1080/09638288.2018.1510047>
20. Ren X-R, Wei Y-Y, Su X-N, et al. Correlation between self-perceived burden and self-management behavior in elderly stroke survivors. *Medicine*. 2020;99(44). Available from: <https://doi.org/10.1097/MD.00000000000022862>
21. Bailey C, Aitken D, Wilson G, Hodgson P, Douglas B, Docking R. "What? That's for old people, that." Home adaptations, ageing and stigmatisation: A qualitative inquiry. *Int J Environ Res Public Health*. 2019;16(24):4989. Available from: <https://doi.org/10.3390/ijerph16244989>
22. Gore PG, Kingston A, Johnson GR, Kirkwood TBL, Jagger C. New horizons in the compression of functional decline. *Age and Ageing*. 2018;47(6):764-8. Available from: <https://doi.org/10.1093/ageing/afy145>
23. NICE. Falls in older people: assessing risk and prevention [CG161]. Recommendations. 2013. Available from: <https://www.nice.org.uk/guidance/cg161/chapter/recommendations#multifactorial-intervention> (accessed 05 April 2023)
24. Cosio D. Fear-avoidance and chronic pain: helping patients stuck in the mouse trap. *Practical Pain Management*. 2019;19(5). Available from: <https://www.practicalpainmanagement.com/treatments/psychological/cognitive-behavioral-therapy/fear-avoidance-chronic-pain-helping-patients> (accessed 05 April 2023)
25. Kjørstad E, Nuse IP. Why are we more concerned about someone seeing us fall on our face than whether it hurts? *sciencenorway.no*. 2019. Available from: <https://sciencenorway.no/animal-kingdom-behaviour-psychology/why-are-we-more-concerned-about-someone-seeing-us-fall-on-our-face-than-whether-it-hurts/1562384#:~:text=Most%20people%20are%20concerned%20with> (accessed on 27 April 2022)



Falls by Sofia Tentativa