

Falls in the elderly – Why are they important and can physical activity help?

Introduction

A 'fall' is generally defined as an event resulting in an individual coming to rest at a lower level (or on the floor), which is not following any major event or hazard (UK Government, 2022). They are an unfortunate yet completely normal aspect of being human, however there are some groups within the population who are not only more likely to experience them, but they are also more likely to have longer-lasting or more severe health outcomes following the event – an example of which being the elderly. Therefore, in this essay the current statistics of rates falls in the elderly, and their causes, will be examined along with the knock-on effects of such to society, and the role physical activity can play in the prevention of falls will be discussed.

There are many factors that could make the incidence of a fall more likely such as: muscle weakness, side effects of medication, visual impairment, poor balance, and they can also happen as a result of medical conditions such as vertigo or osteoporosis, making it even harder to maintain balance and steady stance (UK Government, 2022), these are also all afflictions more likely to occur in the elderly, of which the number in the UK is rising. Furthermore, it is important to consider that falls should be evaluated not so much in isolation but with consideration also paid to their other knock-on effects; a fall can have detrimental effects on mental health for example (Storey, A., 2021).

Last reported in 2018, the total number of those over the age of 65 in the UK (and therefore classified as 'elderly') had reached 11.9 million, equating to 18% of the total population. When compared to the same measure 50 years ago the percentage of the population was 10.8; around 5.3 million people over the age of 65 (Coombs, N., 2019).

The most recent data showing the general population age in the UK is from an Office for National Statistics report released in the middle of 2020, and so it may be worth noting that the true effect that the COVID-19 pandemic has had on the elderly population (and the social care strategies in place for them) has yet to be fully realised (Storey, A., 2021). This report shows that the number of those reaching the age of 90 had increased by 0.7% on the

previous year, but the number of those reaching or surpassing their centenary year was even higher at a 25% increase vs the previous year. This major increase is reported to be owing - in part - to the post World War 1 birth spike (more births equalling more people, and therefore more people to potentially reach 100 years old), but mostly owing to the improvement in several factors facilitating a higher population age, for example scientific advancement resulting in improved treatment of illness and disease (Storey, A., 2021).

In addition to this, it was reported that 30% of people over the age of 65 and 50% of those over the age of 80 would experience a fall at least once a year (one in two women and around one in five men (PHE, 2017)), with around 5% of these falls resulting in a fracture and subsequent hospital stay (UK Government, 2022). Of the 5% of falls that resulted in fracture, around 18% of those resulted in an increased mortality within a year of the fracture, and around 33% found that it negatively impacted their everyday lifestyles habits, including basic walking and shopping, following recovery. Notably around 20% of hip fracture sufferers subsequently entered residential care (UK Government 2022). Also important to note is the comparison between falls within the community versus those happening to individuals already within a hospital setting; around 247,000 falls are reported annually in inpatient wards, which could lead to even more severe health outcomes versus those happening in the community, such as longer hospital stays, loss of independence and confidence (thereby having a detrimental effect on mental health) or even further health complications potentially resulting in death (Royal College of Physicians, 2020).

Statistics show that the percentage of the population reaching older age is increasing, and so too is the number of falls, resulting in further pressure on the National Health Service and associated social care partners – with the former experiencing around 255,00 fall-related emergency admissions, and incurring resulting costs of around £4.4billion - £2billion of which on hip replacements alone each year (Public Health England, 2017), and an estimated £1.1billion on social care each year (UK Government, 2022).

Discussion – What helps and why?

Because of this ongoing percentage increase in the elderly population, it is ever more important to find cost-effective strategies to limit the risk of falling, thus reducing the subsequent need for ongoing care, and therefore decreasing costs to the NHS and social care partners. There are numerous potential strategies to aid in the reduction of falls, however

there are some studies which are so far proving inconclusive – some studies found vitamin D supplementation reduced the incidences of falls in those with osteoporosis by as much as 30%, some found this only worked when used in conjunction with calcium, some found no improvement at all (Stubbs et al., 2015).

An example of more promising studies would be those by the US Preventative Services Task Force, following the use of exercise interventions on >65 year olds who were either male or female and residing within the community, which they found had notable positive effects on the risks of falling (JAMA, 2019), it is worth noting however that there was a wide and disproportionate range with their report; seventeen of the studies examined used balance exercises, however only 5 used resistance training. Furthermore, the longevity of the studies referenced were widely varied; some programmes were run for 2 months whereas others remained even after 24 months, thus making the results somewhat difficult to compare. Despite this, the collected evidence does agree that physical activity of any kind and of any time duration does positively affect the risk of falls (JAMA, 2019).

In addition to the JAMA report, a systemic review conducted in Hong Kong analysed the cost-effectiveness of exercise interventions using the cost per quality adjusted life year (QALY) to determine that strengthening exercises on the lower limbs yielded a positive correlation in reduction of falls in the over 65s (Winser, S., 2019). To further corroborate the above findings, an umbrella review written by Sherrington et al. produced similar results; exercise improved the risks of falling for >65 year old men and women residing within the community, but interestingly also found that balance-based exercises such as Tai chi, resistance training and even jumping exercises yielded even more positive results (Sherrington, C., 2020). A further umbrella review found that not only did physical activity reduce the risk of falling in the first instance, it also shortened recovery time and reduced the risk of complications incurred during any resulting hospital stays (DiPietro, 2019).

In Conclusion

There is overwhelming evidence in support of exercise as an intervention to not only prevent falls, but also evidence to show that physical activity reduces recovery time from any falls, thereby limiting time spent in hospital and reducing the potential dependency on social care partners and residential homes. In addition to the physical benefit of reducing falls, there

is also the potential mental health improvement derived from sustained confidence in an individual's abilities, and independence.

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