



## Cross-sectional study

# 15.4% of older people with hip fracture have visual impairment, 38.6% auditory impairment and 30.1% combined sensory impairment

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Commentary on: **Grue EV, Kirkevold M, Ranhoff AH.** Prevalence of vision, hearing, and combined vision and hearing impairments in patients with hip fractures. *J Clin Nurs* 2009;**18**:3037–49.

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This prospective descriptive correlational study investigated an often overlooked clinical condition in older adults, sensory impairment. The study specifically addressed vision and hearing impairment in hospitalised older adults who had sustained a hip fracture.

Sensory impairments affect older adults' ability to interact with and navigate safely in their environment, as demonstrated by the high prevalence of sensory impairment in this sample of hip fracture patients as compared with the general population of community-dwelling older adults.

In this study 332 older adults were screened for vision and hearing impairment using the RAI-AC and the KAS-Screen. These self-report measures were completed by a research nurse. Of the 332 patients screened, 279 (83.7%) were found to have some level of sensory impairment. Of those who screened positive for sensory impairment, 186 were further evaluated with vision testing, including visual acuity, peripheral vision, central field vision and binocular stereo depth perception. Ears were checked for cerumen. Hearing was evaluated by an audiologist using pure tone air conduction audiometry.

The review of the literature supported the premise that sensory impairment is a risk factor for falls and fractures. The risk of falls in visually impaired older adults is well documented in the literature and well supported in this article. There is mixed evidence supporting the link between hearing impairment and falls. Grue and colleagues are commended for presenting a compelling case for the indirect risk of falls in hearing-impaired older adults. In this sample, hearing impairment was common: 69% identified as hearing impaired by self-report, and 89.2% were identified as hearing impaired with formal audiometric testing. The importance of sensory impairment in older adults with hip fractures was well supported in this study.

One surprising finding was the percentage of participants who had cataracts and were awaiting cataract surgery. Of the 279 people found to have sensory impairment by self-report, 146 (52.3%) had a vision-related diagnosis. Of those with a vision-related diagnosis, 52 (35.3%) had a cataract, and 24 of those (46.8%) were awaiting cataract surgery. In Norway, in the years preceding this study, the average waiting time to see a specialist was 96 days, and there were 47 000 people who had waited more than 1 year for outpatient specialist treatment. This was reported to be due to staffing shortages. By 2006 the waiting times had decreased to 68 days, with only 4500 people who had waited longer than 1 year to see a specialist.<sup>1</sup> The number of people awaiting cataract surgery who fell and fractured their hip has important public health and social policy

implications. Successful cataract surgery has been shown to improve quality of life in older adults<sup>2</sup> and has been found to decrease fall rates.<sup>3</sup> This study adds evidence to support the role of cataract surgery in preventing falls.

A few methodological concerns relating to this study should be kept in mind when drawing conclusions. The first, reported by the authors, is the subjective under-reporting of hearing impairment by the participants. In the second-level assessment to determine the true presence and severity of sensory impairment, 33% of participants who reported good hearing were found to have significant hearing impairment on audiometric testing by the audiologist. This raises concerns regarding the sensitivity of the RAI-AC and the KAS-Screen in identifying hearing impairment by self-report.

Another methodological concern was the prevalence of delirium (n=50, 17%) in the first level of screening. Delirium screening was reported as being completed only once, 3 days postoperatively. One screen may not have been sufficient to identify all the possible delirium cases. Delirium is a syndrome that presents acutely, with inattention and clouding of consciousness, and has a fluctuating course.<sup>4</sup> The authors required all four of these elements to be present for a participant to have a positive delirium score. The reliability and validity of sensory screening responses in these participants is questionable because of the presence of delirium.

Despite the methodological concerns, this study was an ambitious project that has clear implications for nursing and interdisciplinary care. Sensory impairment is common in community-dwelling older adults. Fall prevention must begin in the community and should include a thorough assessment of sensory status similar to that included in this study, including visual acuity, fields of vision and stereoscopic vision. Contrast sensitivity should be added to these tests. Hearing should be assessed at the very least by an audioscope exam where the presence of cerumen can be assessed and impairment can be identified at the 40 dBL level. Appropriate referrals should be made for routine eye care, and hearing aid use and follow-up appointments should be encouraged. Sensory impairment is not a static condition. Most conditions are progressive and require monitoring every 1 or 2 years.

Clinical gems from this study include the reasons participants reported for not wearing their hearing aids. These subjective responses can guide nursing interventions to improve the use of hearing aids and guide the development of hearing devices for older adults with concomitant visual impairment or dexterity issues.

Self-report, particularly regarding hearing impairment, was less reliable than testing an older adult's hearing. There is evidence from this study of a need for translation studies for the implementation of evidence protocols for care of older adults with vision and hearing impairment.

The authors are to be commended for this comprehensive and complex study in the acute care setting. Like many programmes of research, this study opens the door to further inquiry into the relationship between sensory impairment and falls in community-dwelling older adults.

Competing interests: None.

## References

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