

Hearing and vision needs of people with dementia

Identifying and supporting hearing and vision impairments is an inexpensive and effective opportunity to improve quality of life for people living with dementia. **Piers Dawes** explains

Hearing and vision impairments are common among people with dementia. Unfortunately hearing and vision impairments tend to go unrecognised and under-supported, worsening the impacts of cognitive impairment on quality of life and other outcomes. Effective identification and management of hearing and vision impairments offers an acceptable, low-cost, and low-risk opportunity to improve quality of life for people with dementia.

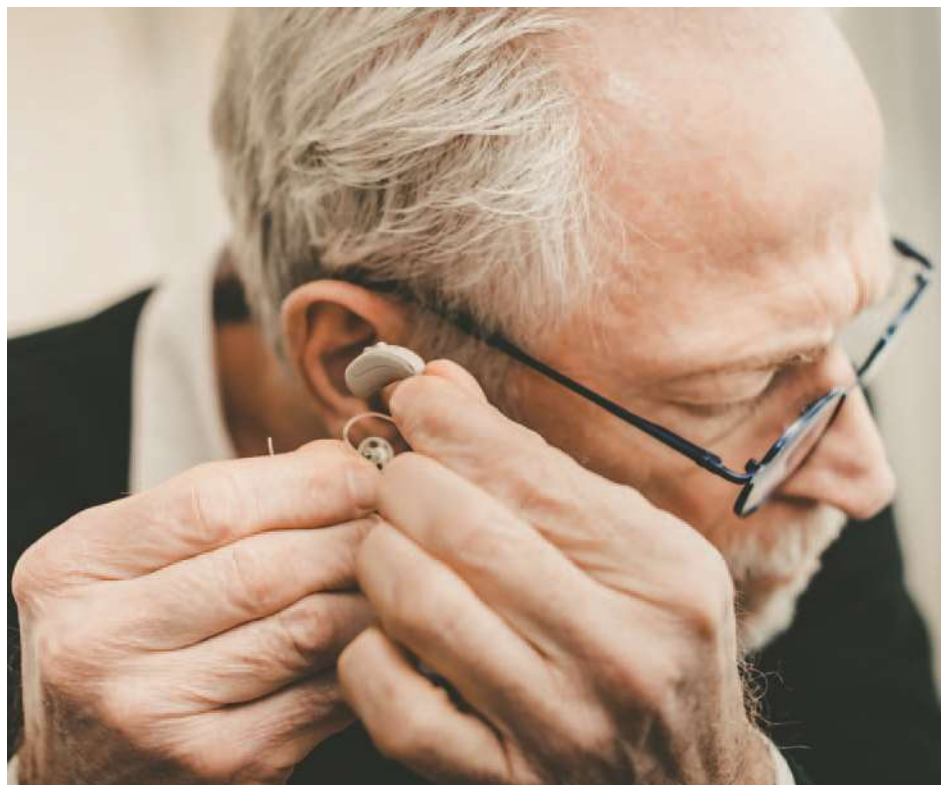
This article highlights interventions and key recommendations for carers and hearing and vision professionals to support and address these impairments.

Prevalence and impact

People with dementia are more likely to have hearing and vision impairments than people of a similar age without dementia. UK studies reported that 90% of people in the general community with mild/moderate dementia have hearing loss (Allen *et al* 2003) and 32.5% have vision impairment (Bowen *et al* 2016). Hearing and vision impairments are even more common among people with dementia in residential aged care settings (Bowen *et al* 2016; Cohen-Mansfield & Taylor 2004; Mitchell *et al* 1997). Hearing and/or vision impairments exacerbate the impact of dementia on quality of life by:

- Increasing behavioural and psychological symptoms (agitation, hallucinations, aggression and depression), leading to increased use of pharmaceutical and physical restraint.
- Increasing communication barriers, social isolation, cognitive decline, and resulting in higher care need and care costs (Dawes *et al* 2018).

People with both hearing *and* vision impairment (dual sensory impairment) have even worse outcomes. Hearing and vision impairments among people with dementia also impact on informal and paid carers, increasing social isolation, depression, relationship stress and care burden (Leroi, Wolski & Hann 2019).



Dementia may affect a person's ability to learn how to use or understand the need for sensory aids such as hearing aids and glasses, and they may need extra support to do so.

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Interventions

Hearing and vision interventions (such as hearing aids, glasses and cataract surgery) are effective in improving quality of life, functional ability, mental wellbeing and social participation for people with normal cognition. Our systematic review found that hearing and vision interventions also improve outcomes for people with dementia (Dawes *et al* 2018). These interventions are relatively low cost, so are highly cost-effective.

Under-identification

Unfortunately, hearing and vision impairments tend to go under-recognised in people with dementia (Allen *et al* 2003; Bowen *et al* 2016). Age-

related hearing/vision difficulties have a gradual onset, so many people may not realise they have a problem. Because dementia affects insight, people with dementia may be less aware of sensory difficulties and less likely to seek help than people with normal cognition.

Further, because some of the symptoms of dementia resemble the symptoms of hearing/vision loss (for example, disorientation, memory difficulties, not keeping up with the conversation, repeating questions, disengagement with friends and family), functional and communication difficulties may be misattributed by clinicians, friends and family as due to dementia, rather than due to a

Table 1: Recommendations for ageing-related hearing and vision impairment in people with dementia. Adapted with permission from Leroi *et al* (2020) *Hearing and Vision Impairment in People With Dementia: A Guide For Clinicians. Archives of Physical Medicine and Rehabilitation* 101(9) 1667-1670.

Detection

1. Raise awareness among hearing, vision, and dementia experts about the overlap of these problems.
2. Detect hearing and vision problems early to ensure better outcomes, such as improved quality of life and functional ability.
3. Offer hearing and vision testing to people newly diagnosed with dementia.

Assessment

1. Consider the impact of hearing and vision problems on cognitive testing for dementia diagnoses to ensure accurate diagnosis.
2. Modify hearing and vision testing to consider a person with dementia's difficulty in self-reporting symptoms and providing accurate feedback during clinical examinations.
3. Hearing and vision specialists should adapt testing by: (1) doing home assessments, if possible; (2) scheduling sessions at times when a person is most alert; (3) simplifying instructions and allowing extra time for the testing; (4) allowing caregivers to be present during the testing; and (5) considering that a person with dementia may not fully understand instructions or may respond slowly.
4. Consider hearing and vision impairments as a contributing factor if a person with dementia develops responsive behaviours (ie, apathy, agitation, aggression) or hallucinations.

Treatment and support

1. Use person-centred approaches, tailored to individuals' needs, and with all relevant disciplines or specialties.
2. Provide dementia awareness training for hearing and vision professionals.
3. Give people with dementia and their care partners information about the impact of hearing and vision problems and offer support and advice about how to use and maintain sensory aids.
4. Offer opportunities to connect with community support services.
5. Ensure that local environments (ie, home, clinic, activity centres) have appropriate lighting, acoustics, and noise reduction.
6. Provide caregivers with additional means of support to reduce caregiving burden and stress.

remediable sensory problem.

Clinicians and carers should be alert to the possibility of an unrecognised or under-supported hearing or vision problem. Ideally, reliable objective hearing/vision screening tests should be used to identify a hearing/vision problem. Two such tests are the Such as the HearCheck Screener (<https://bit.ly/hearcheck-screener>) and the PEEK vision testing app (<https://peekvision.org/>).

Hearing/vision assessment

If a person with dementia does see an audiologist or optometrist, they may

have difficulty following instructions and/or completing the tests. Hearing and vision professionals report that they lack training and expertise in how to recognise and/or work with people with dementia (Bowen *et al* 2016; Shah *et al* 2015; Wright *et al* 2014). One study reported that only 5% of people with dementia in residential aged care could complete a full audiometric evaluation (Burkhalter *et al* 2009). But this study involved a large hearing test battery, and the hearing tests in this study were carried out 'by the book' without adjustment for the needs of people with dementia.

Assessments can be adapted to support the needs of people with dementia (Dawes *et al*, in press) (see Table 1, Assessment, item 3 for details, left). A recent systematic review reported that around 60% of people with dementia could complete a basic hearing test, and most people with mild dementia can be reliably complete a hearing assessment (Bott *et al* 2019). Hearing and vision services are available that cater for people with dementia (eg, www.nationaleyecare.com.au).

Sensory interventions

Dementia affects the ability to learn new things, including use of sensory aids such as hearing aids and/or glasses. Dementia may also affect insight for the need for sensory aids, so people with dementia may not continue to use them and may need extra support to do so. The stage of dementia may also impact a person's ability to adapt to the use of a sensory aid. Sensory needs should be identified and supported as early as possible, so that a person may adapt and continue to use and benefit from a sensory aid in the long term (see Table 1, Treatment and Support, for details, left).

If a person cannot reliably complete a full hearing/vision assessment and/or may not be a good candidate for hearing aid or glasses, consider:

- Trialling assistive devices that do not require full audio/opto-metric information to be prescribed, such as personal amplification devices (<https://bit.ly/pocket-talker>) and low vision aids (<https://bit.ly/low-vision-aids>).
- Focusing on training carers and friends in vision/hearing support strategies (<https://bit.ly/hearing-assistance>; <https://bit.ly/visionaustralia-tips>).
- Environmental modifications (eg, adjusting lighting, reducing background noise).

Memory clinics and mis-diagnosis

Hearing and vision impairments complicate dementia diagnosis and support. Unfortunately, memory clinicians do not routinely take sensory impairments into account (Leroi & Himmelsbach *et al* 2019).

Because the clinical presentation of hearing/vision impairment is like that of dementia, clinicians may confuse sensory difficulties for cognitive ones. As diagnosis of dementia is partly based on functional impairment in daily life, and un-treated hearing and vision impairments result in functional impairments, un-treated hearing and vision impairments may increase the



Vision (and hearing) assessments can be adapted to support the needs of people with dementia. Photo: www.freepik.com

likelihood of dementia diagnosis.

Additionally, the cognitive assessments that memory clinicians use to diagnose dementia rely on test-takers having good hearing and visual function. Hearing and vision impairments impact on performance of cognitive tests. For example, one study (Jorgensen *et al* 2016) simulated the effect of various levels of hearing loss on performance on a commonly used dementia screening test, the Mini Mental State Examination (MMSE). The researchers found that even relatively mild levels of hearing loss resulted in performance within the 'impaired' range on the MMSE by cognitively normal undergraduate students.

Attempts have been made to adapt cognitive tests for people with hearing or vision impairments, but they have mostly not been validated (Pye *et al* 2017), and modifications adversely affect the sensitivity and specificity of the test to identify dementia (Al-Yawer *et al* 2019).

My colleagues and I recently adapted and validated a version of the Montreal Cognitive Assessment (MoCA) (Nasreddine *et al* 2005) for people with hearing impairment (Dawes *et al* 2019), and this new MoCA is now freely available to registered persons via <https://www.mocatest.org/>. A similar effort to produce a version of the MoCA for people with vision impairment is under way (Dawes *et al* 2019).

The potential for confounding sensory impairments with cognitive impairment means that clinicians and carers may mis-diagnose a sensory impairment as dementia, or over-estimate the severity of cognitive impairment in someone who has dementia. It is therefore essential that memory clinicians screen for hearing/vision impairment using reliable objective measures and take hearing/vision impairments into account in dementia assessment and management.

Practice guidelines

With input from people with dementia and carers, an international multi-disciplinary working group (of which I am a part) recently published the first international practice guidelines for identification and management of hearing and vision impairment among people with dementia (Littlejohn *et al* 2021). These guidelines are available at www.karger.com/Article/FullText/515892.

The guidelines follow a set of key recommendations for clinicians (Leroi *et al* 2020) (<https://bit.ly/hearing-vision-guide-pmr>), published by a related group of authors (including myself), and summarised in Table 1 (see p24). These key recommendations were developed by an international multidisciplinary working group including memory clinicians, optometrists and audiologists.

Conclusion

Identifying and supporting hearing and vision impairments offers an inexpensive and effective opportunity to improve quality of life for people living with dementia. Hearing and vision professionals have a key role to play. ■

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