



JAMDA

journal homepage: www.jamda.com

Special Article

Hearing Loss: Why Does It Matter for Nursing Homes?

Ellen M. McCreedy PhD^a, Barbara E. Weinstein PhD^{b,c}, Joshua Chodosh MD, MSHS^{c,d,e},
Jan Blustein MD, PhD^{e,f,*}

^a Center for Gerontology and Healthcare Research, School of Public Health, Brown University, Providence, RI

^b Department of Audiology, Graduate Center, City University of New York, New York, NY

^c Division of Geriatrics, Department of Medicine, New York University Medical School, New York, NY

^d VA New York Harbor Healthcare System, New York, NY

^e Department of Population Health, New York University Medical School, New York, NY

^f Wagner Graduate School, New York University, New York, NY

A B S T R A C T

Keywords:

Hearing loss
nursing home
quality of life
Minimum Data Set

Over the past decade, hearing loss has emerged as a key issue for aging and health. We describe why hearing loss may be especially disabling in nursing home settings and provide an estimate of prevalence using the Minimum Data Set (MDS v.3.0). We outline steps to mitigate hearing loss. Many solutions are inexpensive and low-tech, but require significant awareness and institutional commitment.

© 2017 AMDA – The Society for Post-Acute and Long-Term Care Medicine.

According to the World Health Organization, hearing loss is now the fourth greatest contributor to years lost to disability [YLDs] globally.¹ Among Americans age 80 and over, the number with hearing loss that is moderate or greater will more than double over the next 25 years.² Hearing loss is associated with social isolation,^{3,4} depression,⁵ and cognitive impairment,^{6,7} conditions that contribute greatly to morbidity and mortality in aging.

Although hearing loss has long been recognized as a problem in nursing homes, the implications for quality of life have not been widely appreciated, and solutions have remained elusive. We begin this article by clarifying why hearing loss is so disabling for nursing home residents, and provide current national estimates of its prevalence among residents. We then describe opportunities and barriers to improved hearing for those living in nursing homes.

Why Is Hearing Loss Disabling? The Importance of “Difficult Listening Situations” and Cognitive Demand

Hearing loss is not primarily a problem with detecting sound. Rather, it is a problem of understanding speech. Many people with hearing loss hear sound relatively well, and many have good speech understanding in the right environments: for example, in

quiet rooms, in one-on-one conversations, or when the speaker faces them. Disability emerges when the environment is less than optimal, for example, in noisy or poorly insulated rooms or when the speaker is not directly facing the listener, depriving the listener of the facial cues and gestures that help to fill in the gaps in hearing. In these “difficult listening situations,” people with hearing loss must recruit more cognitive resources to extract meaning from the spoken message.

Research has begun to illuminate the role of cognition in speech understanding.^{8,9} Because speech is acoustically degraded in hearing loss, understanding engages greater cognitive resources (such as working memory and attention).⁸ Successful comprehension requires increased effort and motivation. When demand exceeds capacity, the listener may have no choice but to withdraw from conversation. In challenging listening environments (eg, high ambient noise), this will occur earlier and more often, and withdrawal may become a habitual response.

In sum, for a given level of hearing loss, disability depends on environmental context. But it also depends on availability of cognitive resources and motivation to invest listening effort.⁹

Nursing Homes Are Difficult Listening Situations, and Many Residents Are Cognitively Impaired

Care is often delivered in noisy settings, and nursing homes are no exception. Residents typically spend many waking hours in high-traffic, high-noise areas: televisions blare, intercoms sound, carts transport equipment, and both residents and staff call out intermittently.^{10,11} Sound levels are often too high to support effective speech

The authors declare no conflicts of interest.

* Address correspondence to Jan Blustein, MD, PhD, Wagner Graduate School, New York University, 295 Lafayette Street, New York, NY 10012.

E-mail address: jan.blustein@wagner.nyu.edu (J. Blustein).

<https://doi.org/10.1016/j.jamda.2017.12.007>

1525-8610/© 2017 AMDA – The Society for Post-Acute and Long-Term Care Medicine.

communication: in a study of 20 urban nursing homes, the mean noise level in common areas was 64 dB¹²; in another study, peak noise at mealtimes was higher than 90 db.¹⁰ These levels of noise, recorded in locations where residents would typically socialize, would be challenging even for someone with normal hearing.

More than 70% of long-stay nursing home residents have some cognitive impairment; half are moderately to severely impaired.¹³ Most common etiologies of impairment are likely to reflect the population prevalence of Alzheimer disease and related dementia (ADRD), and with increasing severity, multiple cognitive domains are more critically impacted. This translates to less cognitive reserve and capacity to accommodate to degraded speech.⁸ Lacking the cognitive reserve to separate speech from noise, residents with cognitive impairment may be particularly vulnerable to failure to understand speech in noisy environments. Other conditions common among nursing home residents (eg, depression and chronic pain¹⁴) are likely to further decrease motivation to invest listening effort.

The Nursing Home Population Is Elderly, and Thus Is at High Risk for Hearing Loss

Hearing loss rises with age. Table 1 shows prevalence estimates for adults aged 70 and older, drawn from analyses of the National Health and Nutrition Survey (NHANES) conducted by Choi and colleagues.¹⁵ Hearing loss was assessed objectively (by audiometry) and subjectively (via self-report); assessment details are shown in the table notes. Objectively, only one-third (32%) of people aged 70 and older are without some degree of clinically significant loss on audiometry. Subjects report somewhat better hearing in response to the NHANES question “Which statement best describes your hearing (without a hearing aid)? Would you say that your hearing is excellent, good, that you have a little trouble, moderate trouble, a lot of trouble, or are you deaf?” Subjectively, 50% of respondents rate their hearing as “excellent” or “good”; the other 50% have at least “a little trouble hearing.”

A National Estimate of the Prevalence of Hearing Loss Among Nursing Home Residents

The NHANES sample is drawn from community dwellers; there are no analogous nationwide objective (audiometric) assessments of hearing loss among nursing home residents. However, US nursing homes report to the federal government about the health of all residents, using the Resident Assessment Instrument (RAI).¹⁶ The data

collected from these assessments, known as the Minimum Data Set (MDS v3.0), includes a subjective measure of hearing ability. The criteria for hearing assessment are detailed in Table 2. Briefly, the MDS assessor gathers information from conversations with and observations of the resident, as well the medical record and conversations with staff and family. The assessor then assigns a summary rating on a scale of 1 to 4, where 1 is “adequate,” indicating that the resident has “no difficulty in normal conversation, social interaction, or listening to TV and he or she hear(s) all normal conversational speech and telephone conversation and announcements in group activities,” and 4 is “highly impaired,” indicating an “absence of useful hearing.”

In analyzing the MDS reports, we focused on all long-stay residents from 2016 (or anyone who had a quarterly assessment, based on being in a nursing home at least 90 consecutive days during 2016), because their well-being is in the hands of the institution. They are overwhelmingly likely to live there for the rest of their lives.¹⁷ To the extent that the facility has the capacity to recognize disability and provide accommodation, quality of life could improve for the remainder of the residents' lives.

We confined our sample to long-stay residents aged 70 and older, for comparability to the NHANES reports. Our sample had 1,108,610 residents who were ever long-stay in 2016. As shown in Table 1 more than two-thirds (68%) of long-stay residents aged 70 and older reportedly had adequate (“no difficulty”) hearing. Even among those 80 and older, 62% of long-stay residents reportedly enjoyed adequate hearing, having “no difficulty in normal conversion, social interaction, and group activities.”

The MDS reports are therefore at striking odds with the NHANES subjective estimates from community dwellers (eg, 62% of those 80 years old and older having “adequate” hearing with “no difficulty” in the MDS versus only 44% of those 80 years and older enjoying “excellent or good” hearing in the NHANES). Several factors could account for the discrepancy. One is that the NHANES question references ability “without a hearing aid” whereas the MDS protocol allows hearing aids to be worn; thus, the MDS measures will reflect better hearing. This can be explored within the MDS data, which include an indicator of whether a hearing aid was used by the resident (measure B0300). Our analysis found that only 9% of residents wore a hearing aid at some point during the assessment. This is sufficiently rare that it is unlikely to explain the discrepancy. Moreover, excluding subjects with hearing aids did not substantially change the findings displayed in Table 1 (data not shown).

Another possibility is that nursing home residents have an inherently lower risk of hearing loss than people residing in the

Table 1
Assessed Degree of Hearing Loss Among People Aged 70 and Older in the United States, by Age Group, Place of Residence, and Source of Assessment

Source of Assessment	People Living in the Community						Long-Stay Nursing Home Residents		
	NHANES Audiometry,* % (n = 1669)			NHANES Self Report, [†] % (n = 1669)			MDS Assessor, [‡] % (n = 1,108,610)		
Age Group	No Clinically Significant Loss	Mild Clinically Significant Loss	Moderate or Greater Clinically Significant Loss	Excellent or Good Hearing	A Little Trouble Hearing	Moderate or Greater Trouble Hearing	Adequate Hearing	Minimal Difficulty Hearing	Moderate Difficulty or Highly Impaired
70-74	47	35	18	54	28	19	85	11	4
75-79	33	37	30	53	24	24	80	15	5
≥80	16	35	49	44	26	30	62	24	13
All 70 and over	32	35	33	50	26	24	68	21	11

*Source: Analysis of NHANES data reported in Choi et al.¹⁵ Based on speech-frequency pure tone audiometry. Hearing loss classified according to criteria defined by the World Health Organization, with degree of loss determined with respect to average thresholds in the better hearing ear. Age groupings reflect those presented by the authors.

[†]Source: Analysis of NHANES data reported in Choi et al.¹⁵ Based on self-report in response to “Which statement best describes your hearing (without a hearing aid)? Would you say that your hearing is excellent, good, that you have a little trouble, moderate trouble, a lot of trouble, or are you deaf?”

[‡]Source: Author's analysis of MDS data for all long-stay nursing home residents in 2016. Classification of hearing difficulty based on the MDS assessor's interviews with the resident about hearing function, observation of the resident, review of the medical record, and “consultation with the resident's family, direct care staff, activities personnel, and speech and hearing specialists.” “Adequate hearing” means that the resident has no difficulty in normal conversation, social interaction, or listening to TV. The resident hears all normal conversational speech and telephone conversation and announcements in group activities.” Further details on the assessment protocol and interpretation of categories can be found in Table 2. Age groupings parallel to those presented by Choi et al.¹⁵

Download English Version:

<https://daneshyari.com/en/article/8695392>

Download Persian Version:

<https://daneshyari.com/article/8695392>

[Daneshyari.com](https://daneshyari.com)