

Health and Social Outcomes Associated with Age-Related Hearing Loss

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Acknowledgement of Funding Sources: The Blue Mountains Eye and Hearing Studies were supported by the Australian National Health and Medical Research Council (grant Nos. 974159, 991407, 211069, 262120). The authors also acknowledge financial support from the HEARing CRC, established and supported under the Australian Government's Cooperative Research Centres Program

Abstract:

Age-related hearing loss (ARHL) is a decrease in hearing ability that occurs with age and is associated with difficulties in understanding speech particularly in noisy listening environments. These resulting communication problems associated with ARHL can lead to reduced quality of life, depressive symptoms, cognitive decline, functional disability and reduced life expectancy. The Blue Mountains Hearing Study (BMHS) has comprehensively documented the multiple negative impacts of ARHL both cross-sectionally and over a 5- and 10-year follow-up period. In this cohort, hearing impairment was determined as the average pure-tone air conduction threshold >25 dB HL (500–4,000 Hz, better ear). The shortened version of the hearing handicap inventory for the elderly was also administered. In the BMHS, any level of hearing loss was associated with 64% higher likelihood of depressive symptoms. Hearing-impaired adults were significantly more likely to experience emotional distress and social engagement restrictions (self-perceived hearing handicap) directly due to their hearing impairment. Conversely, frequent use of a hearing aid was associated with ~70% reduced likelihood of being depressed. BMHS participants with self-perceived hearing handicap constituted a potential risk group for overall deterioration in quality of life, while hearing aid use was shown to help improve the well-being of hearing-impaired adults. The BMHS also found that participants with moderate to severe ARHL compared to those with normal hearing, had 2.9-fold increased likelihood of difficulties in activities of daily living. These data suggested that diminished hearing could make the difference between independence and the need for formal support services or placement. Moreover, participants with severe self-perceived hearing handicap versus no hearing handicap had 93% increased risk of incident falls. While, hearing aid users versus non-users had 75% increased likelihood of incident falls. The BMHS provided novel data showing that ARHL was associated with increased all-cause mortality via three mediating variables: disability in walking, cognitive impairment, and self-rated health. Regarding societal impacts, we observed that participants with moderate to severe ARHL (>40 dB HL) compared to those with normal hearing had a greater likelihood of being retired. Additionally, use of a hearing aid was associated with significantly

lower mean retirement age. In summary, these epidemiological data from the BMHS has advanced knowledge of the negative psychological, physical and social impacts experienced by individuals with ARHL.