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RESEARCH ARTICLE

Hearing Loss Is Associated With Increased Mortality in a Cohort of Older Construction Trades Workers

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ABSTRACT

Background: Hearing loss has been associated with increased mortality, and there is evidence that regular use of hearing aids reduces the mortality risk. However, these associations have not been sufficiently studied in worker populations at high risk for noise-induced hearing loss.

Methods: Medical examination data for 19,379 workers employed in US Department of Energy (DOE) facilities were used. Speech-frequency pure-tone average hearing loss and hearing aid use were ascertained. Mortality status through 2021 was obtained from the National Death Index. Cox regression examined the association between hearing loss and mortality and the impact of hearing aid use.

Results: Eight thousand eighty-one workers (41.3%) had speech-frequency hearing loss and 2228 (15.3%) of these workers reported use of hearing aids. A total of 5398 deaths occurred over a median follow-up of 11.1 years. Hearing loss was an independent risk factor for higher mortality with an adjusted hazard ratio (HR) of 1.10 (95% CI = 1.03−1.17). The HR increased with hearing loss severity but the relationship was non-linear. Hearing aid users were at 30% reduced risk of mortality compared to those not using hearing aids (HR = 0.70, 95% CI = 0.63−0.77).

Conclusions: Results are consistent with research linking hearing loss with increased mortality and the preventive impact of hearing aid use. These findings should inform workers' compensation programs in favor of: (1) better coverage of hearing loss for noise-exposed workers, and (2) inclusion of hearing aids in medical benefits. Reduction in noise exposures is a priority and workers with hearing loss should be encouraged to use hearing aids.

1 | Introduction

Hearing loss is a common disorder which increases with age, with age-related hearing loss starting in mid-life [1]. In the United States an estimated 73 million persons had hearing loss in 2019 [2]. Hearing loss is strongly associated with a variety of social and health impacts which contribute to substantially reduced quality of life [3, 4]. A growing body of research has associated hearing loss with an increased risk for a number of adverse safety and health outcomes including: communication difficulties, social isolation, stress, and fatigue [5, 6]; falls and work-related injuries [5]; cognitive decline and dementia