**ABSTRACT**

The current prevalence of hearing loss in the US population has been well documented. The cross-sectional nature of most studies, however, does not allow for analyses of age of onset, rate of onset, or symptom progression. Recent data are also lacking on the proportion of cases attributable to different etiologies at different ages of onset. Therefore, we evaluated the age of hearing loss onset in male participants in the Health Professionals Follow-Up Study as well as female participants in the Nurses Health Study, and analyzed the rate of hearing loss onset, progression, and etiology of participants with hearing loss.

**METHODS AND MATERIALS**

**Health Professionals Follow-Up Study**

The Health Professionals Follow-Up Study (HPFS) enrolled 51,529 male dentists, optometrists, osteopaths, pharmacists, podiatrists, and veterinarians who were 40-74 years of age at baseline in 1986. The Nurses Health Study (NHS) was established in 1976 when 121,700 female registered nurses aged 30 to 55 years completed a mailed questionnaire providing detailed information about their medical history, lifestyle, and other risk factors.

**Supplementary Questionnaire**

In 2009, 6,000 HPFS participants were mailed the supplementary hearing loss questionnaire. Of those, 5,013 participants responded to the questionnaire. Of the NHS participants, 30,381 with an available email address received the supplementary hearing loss questionnaire in the email in 2009. Of those, 11,556 participants responded to the questionnaire.

**Statistical Analysis**

Analyses of both cohorts were limited to participants who responded “yes” to having a hearing problem. The proportions of participants reporting the different ages of hearing loss onset were calculated. For analyses of rate of onset and hearing loss progression, participants were stratified by age of onset (<40, 40-59, 60+ years old). For participants who reported having a specific diagnosis as the cause of their hearing loss, the frequency and percent of all diagnoses, with 95% confidence intervals, was presented for each diagnosis, stratified by age of onset (<40, 40-59, 60+ years old).

**RESULTS**

The majority of both males and females with hearing loss developed it in the 5th and 6th decades of life, with gradual onset and gradually worsening progression. Most of the participants were never given a specific diagnosis as to the cause of their hearing loss. Of those with a known diagnosis, the etiology of hearing loss was highly dependent on sex and age of onset. While noise induced and age related hearing loss were common, the study highlights the importance of considering various clinical diagnoses at all ages of hearing loss onset.

**CONCLUSIONS**

The majority of both males and females with hearing loss developed it in the 5th and 6th decades of life, with gradual onset and gradually worsening progression. Most of the participants were never given a specific diagnosis as to the cause of their hearing loss. Of those with a known diagnosis, the etiology of hearing loss was highly dependent on sex and age of onset in both sexes. While noise induced, age related, and idiopathic hearing loss are common, this study demonstrates the importance of clinically investigating various possible causes of hearing loss in all cases regardless of the age of hearing loss onset.