Chapter 4
The Expected Benefit of Hearing Aids in Quiet as a Function of Hearing Thresholds

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ABSTRACT

This chapter aimed to estimate speech perception benefits in quiet for clients with different degrees of hearing loss. The difference between aided and unaided scores on a monosyllabic word test presented binaurally was used as the measure of benefit. Retrospective data for 492 hearing aid users with four-frequency pure-tone average hearing losses (PTA) ranging from 5 dB HL to 76 dB HL in the better ear were analyzed using nonlinear regression. The mean benefit for the perception of monosyllabic words in this group of clients was 22.3% and the maximum expected benefit was 33.6% for a PTA of 52 dB HL. The expected benefit can be expressed as a reduction of the error rate by about half for isolated words and about one quarter for sentences across the full range of PTA.
INTRODUCTION

Hearing difficulties are common but inconsistently or often not treated in developed countries including Australia, USA, and European countries. Approximately 20% of the Australian population have a significant hearing loss and this percentage rises to 50% for people aged 60 years and over (Access Economics, 2006, Page 5; Deloitte Access Economics for the Hearing Care Industry Association, 2017). Although there is little doubt that modern hearing aids can alleviate hearing difficulties for most people, less than 25% of people who would benefit from hearing aids actually own them and a high proportion of hearing aids end up “in-the-drawer” instead of “in-the-ear” or “behind-the-ear” (Kochkin, 2000; McCormack & Fortnum, 2013). The barriers to improved hearing health in Australia and elsewhere include:

- The high cost of hearing aids purchased through the conventional audiological business model (Australian Competition and Consumer Commission, 2017),
- The inconvenience of the audiological model including distance to the nearest audiologist (Grenness, Hickson, Laplante-Lévesque, and Davidson, 2014),
- The high return rates of hearing aids experienced by conventional audiology clinics (Kochkin, et al., 2010),
- The low usage of hearing aids by hearing aid owners (Kochkin, 2000),
- The perceived stigma of wearing hearing aids (Wallhagen, 2009),
- The reluctance of over 75% of people with hearing difficulty to seek help (Access Economics, 2006), and
- The low expectations of a large proportion of non-hearing aid wearers whose only relevant experience may have been listening to an elderly relative complaining about their hearing aids (Cox and Alexander, 2000; Meister, Walger, Brehmer, von Wedel, and von Wedel, 2008).

Other chapters in this book have addressed the first six dot points above, and this chapter will focus on the last one.

When a potential hearing aid user visits an audiology clinic they are often advised that they should not have unrealistic expectations of the benefit of hearing aids (Dillon, 2008) but there is very little evidence available about what level of expected benefit is realistic for an individual. Furthermore, the evidence that is available is often couched in audiological or scientific jargon that is not easily understood or explained to the layman. Despite this lack of easily understood data, there is widespread consensus among professionals that hearing aids are of benefit to the population of hearing impaired people in general.
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