

# Factors influencing hearing aid use, hearing aid benefit and satisfaction in adults: a systematic review of the past decade

Bopane Mothemela<sup>1,2</sup>, Vinaya Manchaiah<sup>1,2,3,4,5</sup>, Megan Knoetze<sup>1,2</sup> Faheema Mahomed-Asmail<sup>1,2</sup> and De Wet Swanepoel<sup>1,2,6</sup>

<sup>1</sup>Department of Speech-language Pathology and Audiology, University of Pretoria, South Africa, <sup>2</sup>Virtual Hearing Lab, Collaborative initiative between University of Colorado School of Medicine, Aurora, Colorado, USA, and University of Pretoria, Pretoria, South Africa, <sup>3</sup>Department of Otolaryngology-Head and Neck Surgery, University of Colorado School of Medicine, Aurora, Colorado, USA, <sup>4</sup>UCHealth Hearing and Balance, University of Colorado Hospital, Aurora, Colorado, USA, <sup>5</sup>Department of Speech and Hearing, School of Allied Health Sciences, Manipal Academy of Higher Education, Manipal, India, <sup>6</sup>Ear Science Institute Australia, Subiaco, Australia

## Introduction

- Most adults with hearing loss present with mild to moderate degrees of hearing loss that can be managed effectively with hearing aids <sup>1</sup>.
- Hearing aids have been shown to be effective in improving hearing, communication, and quality of life and can be evaluated by looking at patient outcomes <sup>2</sup>.
- Clinically, it is common to measure hearing aid outcomes such as use, benefit and satisfaction through objective , behavioral and/or self-reported measures.·
- Efforts have been made by researchers to synthesis available evidence to identify factors influencing hearing aid use, benefit and satisfaction<sup>3,4</sup>.
- Despite efforts made to explore factors influencing hearing aid outcomes, many were explored in (i) limited number of studies, (ii) no clear conclusion was made on some factors due to mixed evidence and (iii) new recent factors have not been explored.
- The aim of this systematic review it to examine factors that influence hearing aid use, hearing aid benefit and satisfaction based on the studies published during the last decade (2011 and 2022)

## Methodology

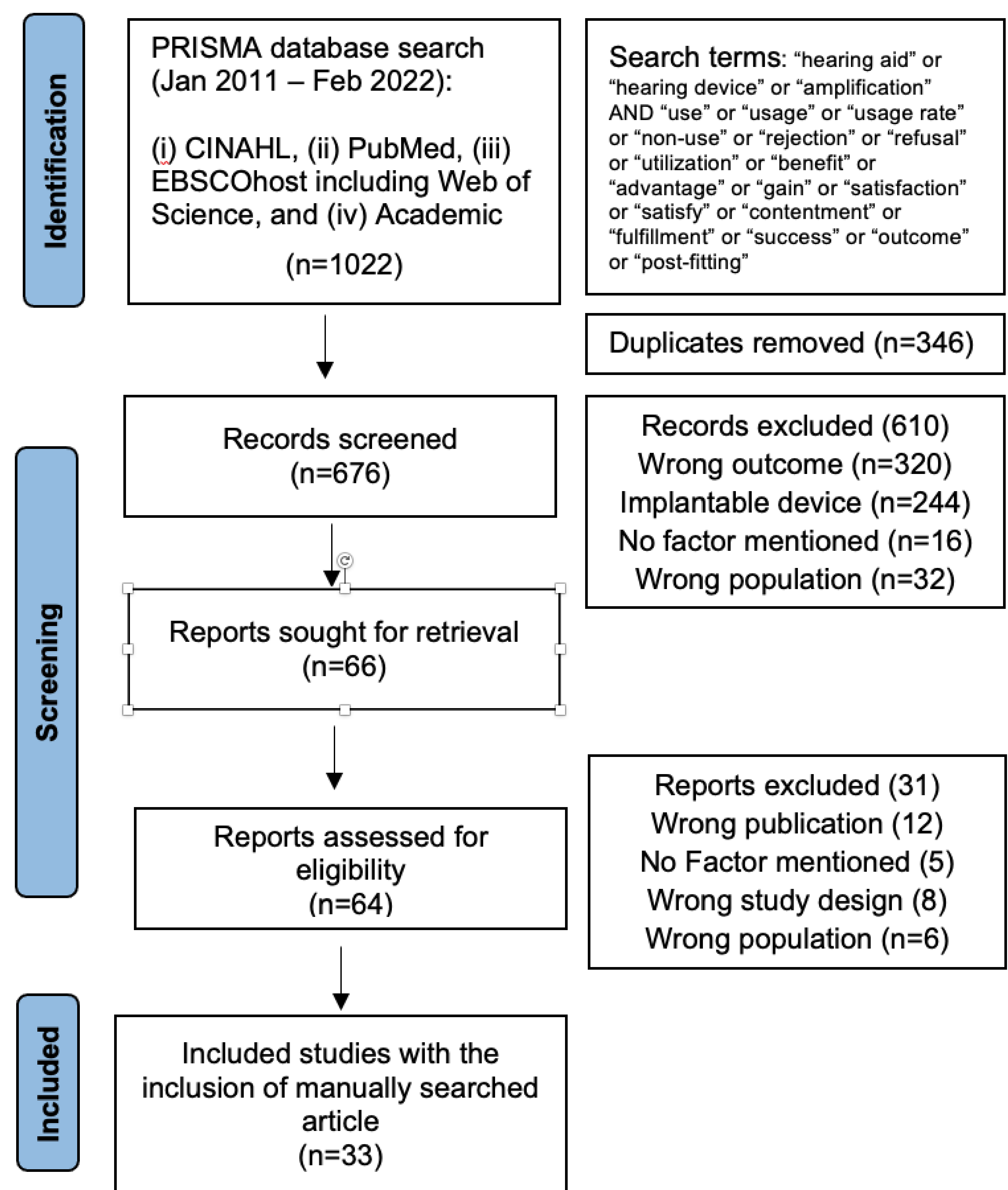


Figure 1:PRISMA flow diagram of the selection process

## Results

- 33 articles met the inclusion criteria and were included in the review
- The reviewed studies identified 44, 17 and 33 significant factors influencing hearing aid use, benefit and satisfaction respectively.
- Audiological factors that showed to be significant predictors throughout all hearing aid outcomes were under the categories of hearing sensitivity, speech perception, hearing aid related.
- Non-Audiological factors that showed to be significant predictors of hearing aid outcomes includes demographics, mental health, social networks, psycho-social, health and socio-economic factors.
- 30 studies had a rating between 5-10, indicating fair quality while 3 were rated between 11-14, indicating good quality.
- 30 cross-sectional studies were graded level 4, 1 cohort study rated graded level 3 and 2 randomized control trials rated level 2.

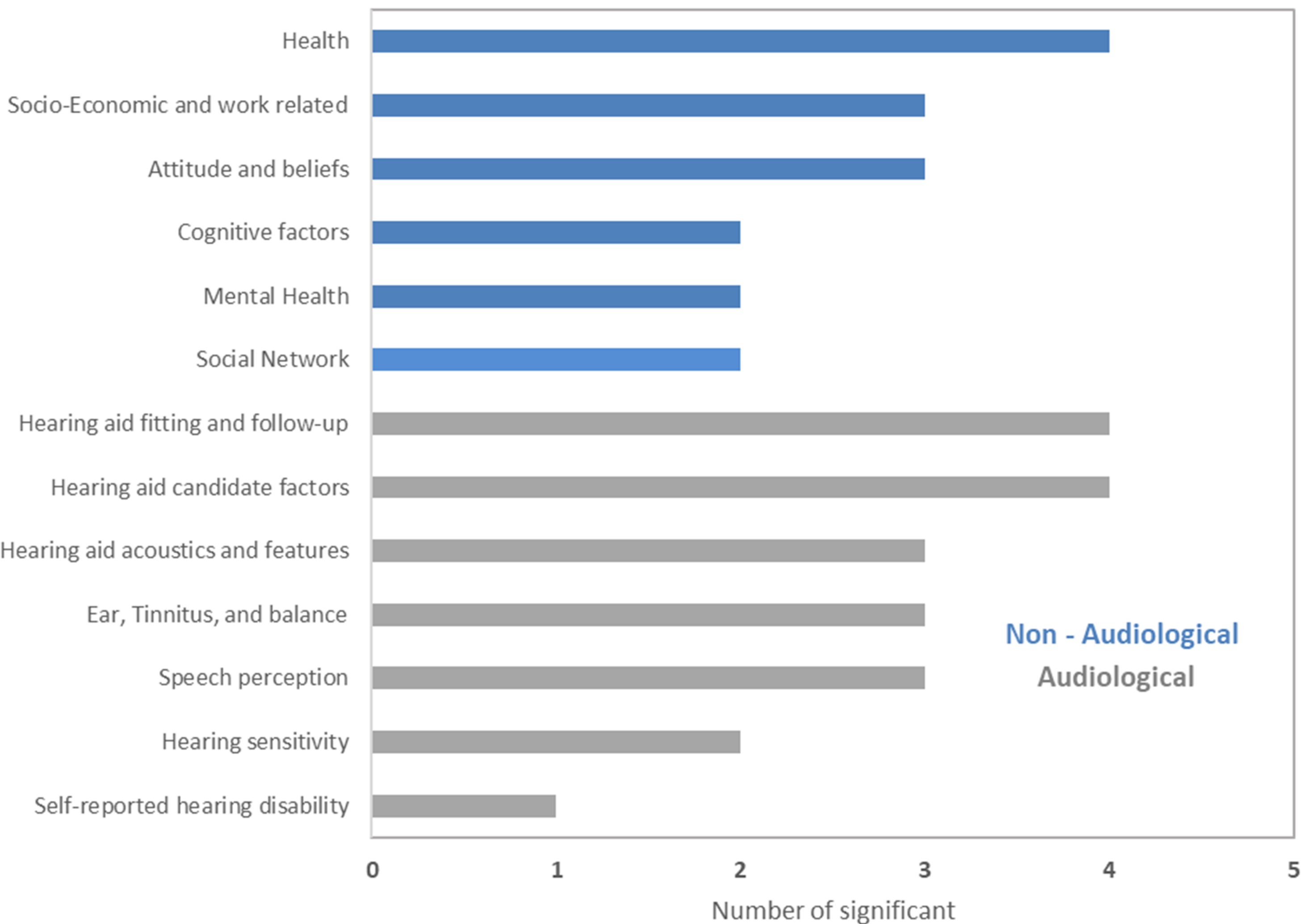


Figure 2. Significant factors influencing hearing aid use per category

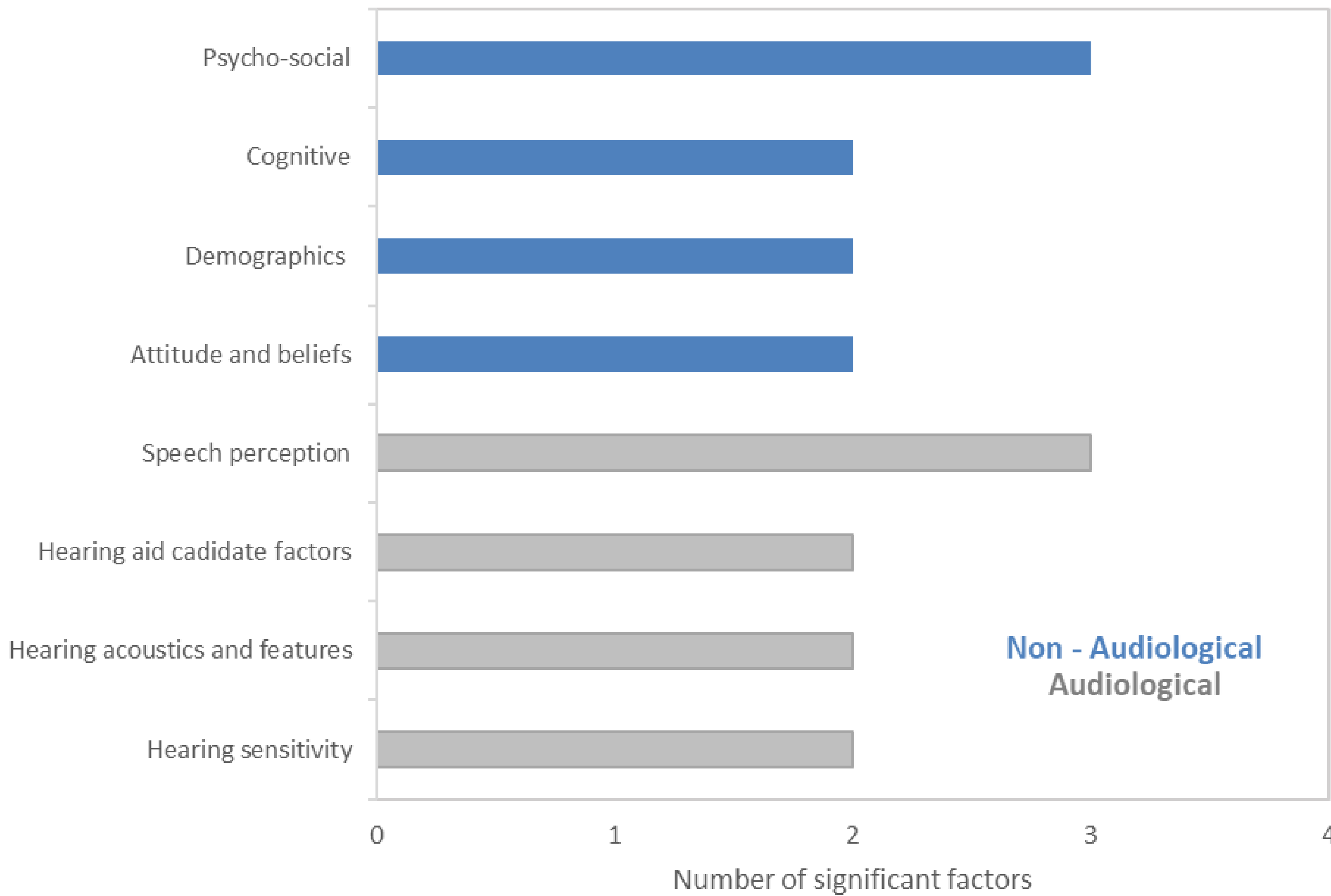


Figure 3. Significant factors influencing hearing aid benefit per category

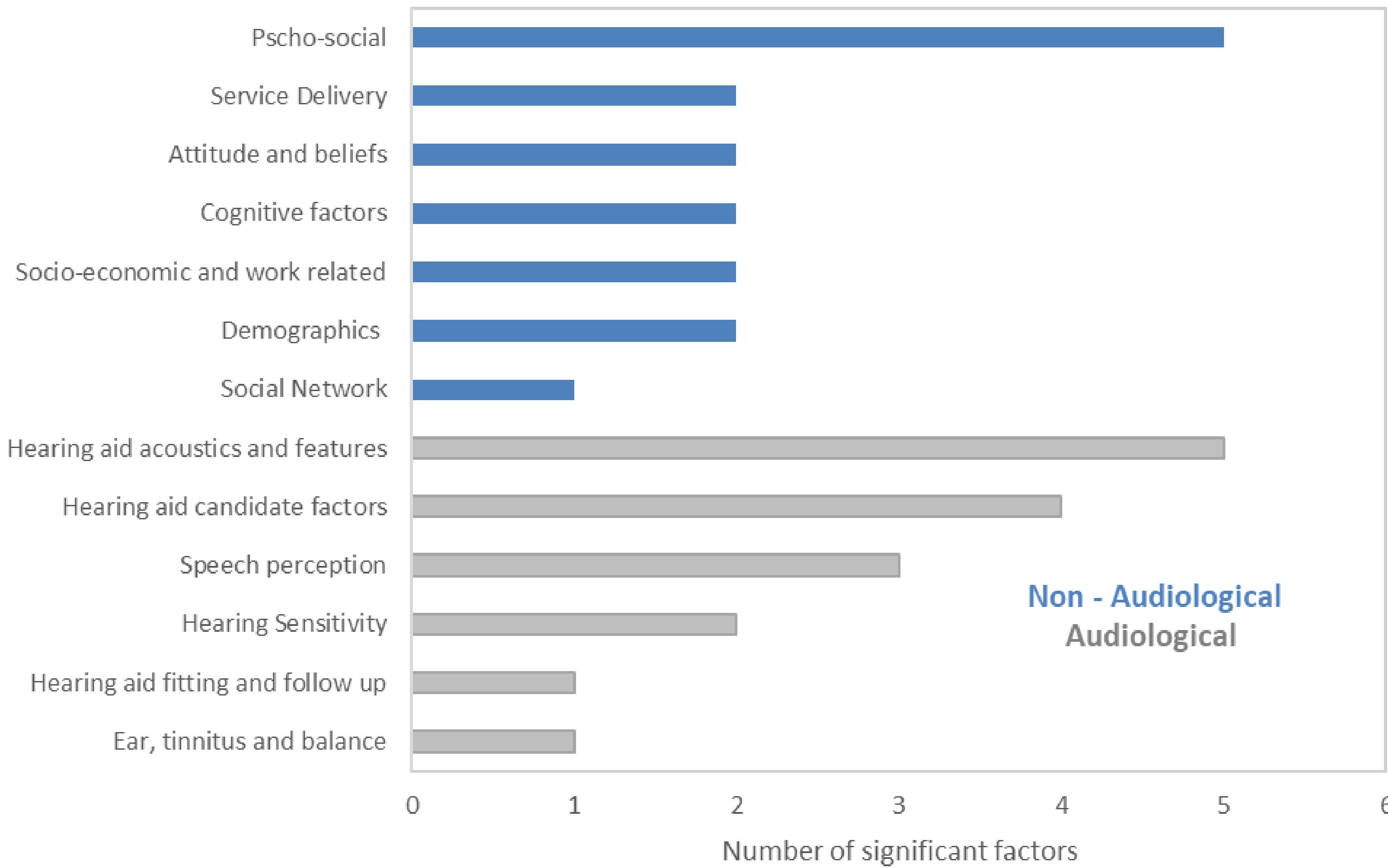


Figure 4. Significant factors influencing hearing aid satisfaction per category

## Conclusion

- Studies of higher quality and evidence are required to explore hearing aid outcomes such as use, benefit and satisfaction.
- Recently reported factors including service delivery models, mental health and social networks are also important for use, benefit and satisfaction.
- Further investigations to explore specific factors with limited or conflicting results is still required.
- Patient centred care informed by predictors of use, benefit and satisfaction can support optimal hearing aid outcomes.

## References

- World Health Organization. (2021). World report on hearing.
- Ferguson M. A., Kitterick P. T., Chong L. Y., Edmondson-Jones M., Barker F., Hoare D. J. (2017) Hearing aids for milld to moderate hearing loss in adults. Cochrane Database of Systematic Reviews 9: CD012023.doi: 10.1002/14651858.CD012023.pub2.
- Knudsen, L. V., Oberg, M., Nielsen, C., Naylor, G., & Kramer, S. E. (2010). Factors influencing help seeking, hearing aid uptake, hearing aid use and satisfaction with hearing aids: a review of the literature. Trends in Amplification, 14(3), 127–154.
- Ho-Yee Ng, J., & Loke, A. Y. (2015). Determinants of hearing-aid adoption and use among the elderly: a systematic review. International Journal of Audiology, 54(5), 291–300.