

Retrospective study of hearing aid effectiveness on hearing impaired people with tinnitus on first clinical appointment

Authors: Liping Zhang^{1,2,3}, Hengzhen Xie¹, Lei Xu¹, Haibo Wang¹

1. Department of Otorhinolaryngology Head and Neck Surgery, Shandong Provincial ENT Hospital; 2. Department of Otorhinolaryngology Head and Neck Surgery, Shanghai 9th people's Hospital; 3. College of Health Science and Technology, Shanghai Jiao Tong University School of Medicine



Objectives

To investigate the clinical efficacy of hearing aids in the relief of tinnitus for hearing-impaired people at their first clinical appointment

To explore the correlation between tinnitus reduction effect and its audiological characteristics, such as tinnitus pitch, loudness level and hearing severity

Method

- Data was collected from 236 hearing-impaired people (135 male, 101 female) with tinnitus at their first hearing aid appointment in Shandong Provincial ENT Hospital from June 2021 to June 2023.
- All the participants had suffered from tinnitus for more than 6 months and all without hearing aid wearing history.
- Hearing aids were fitted according to participants' audiograms in a sound booth room.
- The participants were allowed to wear hearing aids in the sound booth room for 30 minutes to record their feedback.

Distribution of gender and age

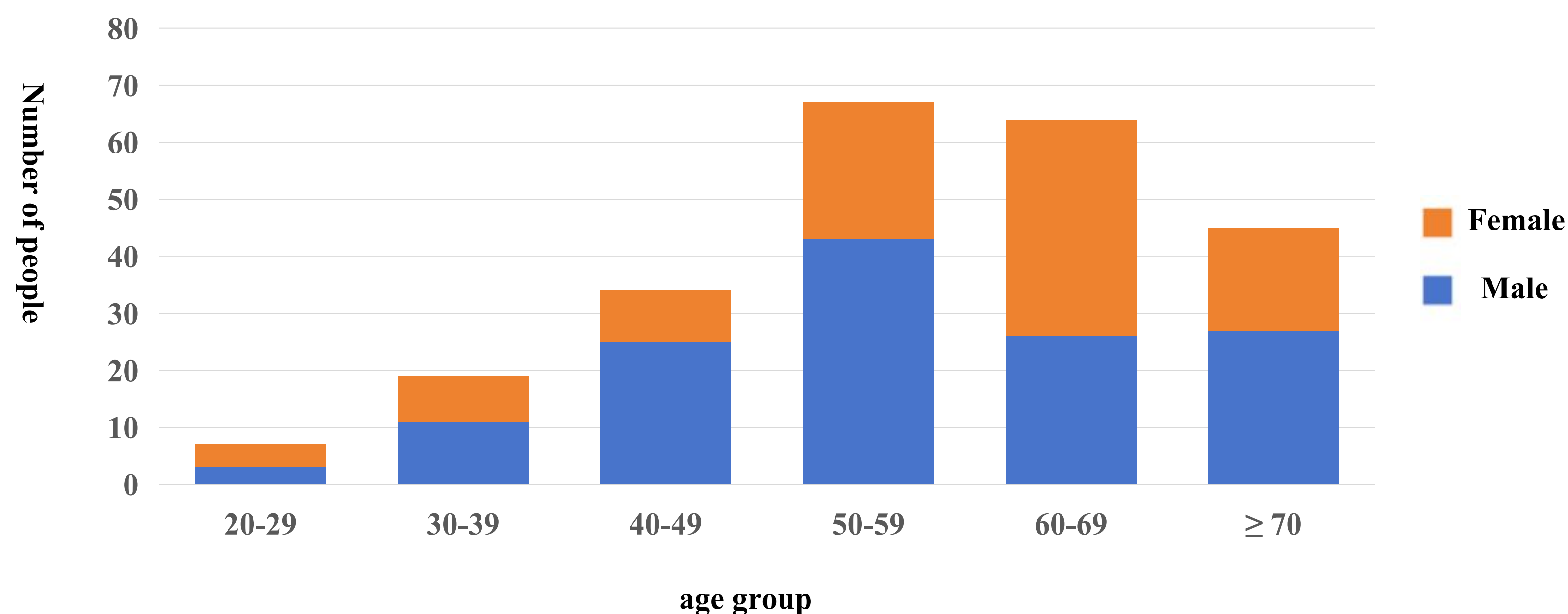


Fig.1 Participants age and gender distribution (n=236)

Results

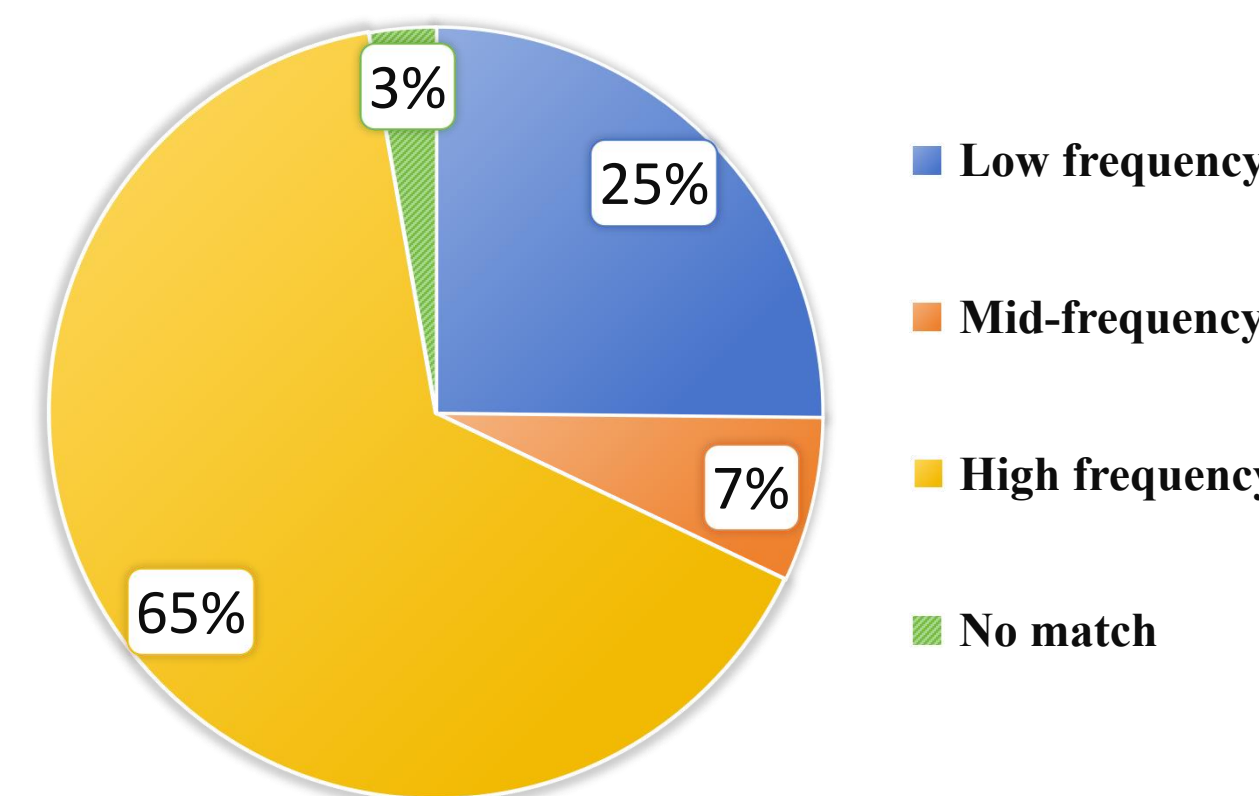


Fig.2 The proportion of tinnitus frequency distribution

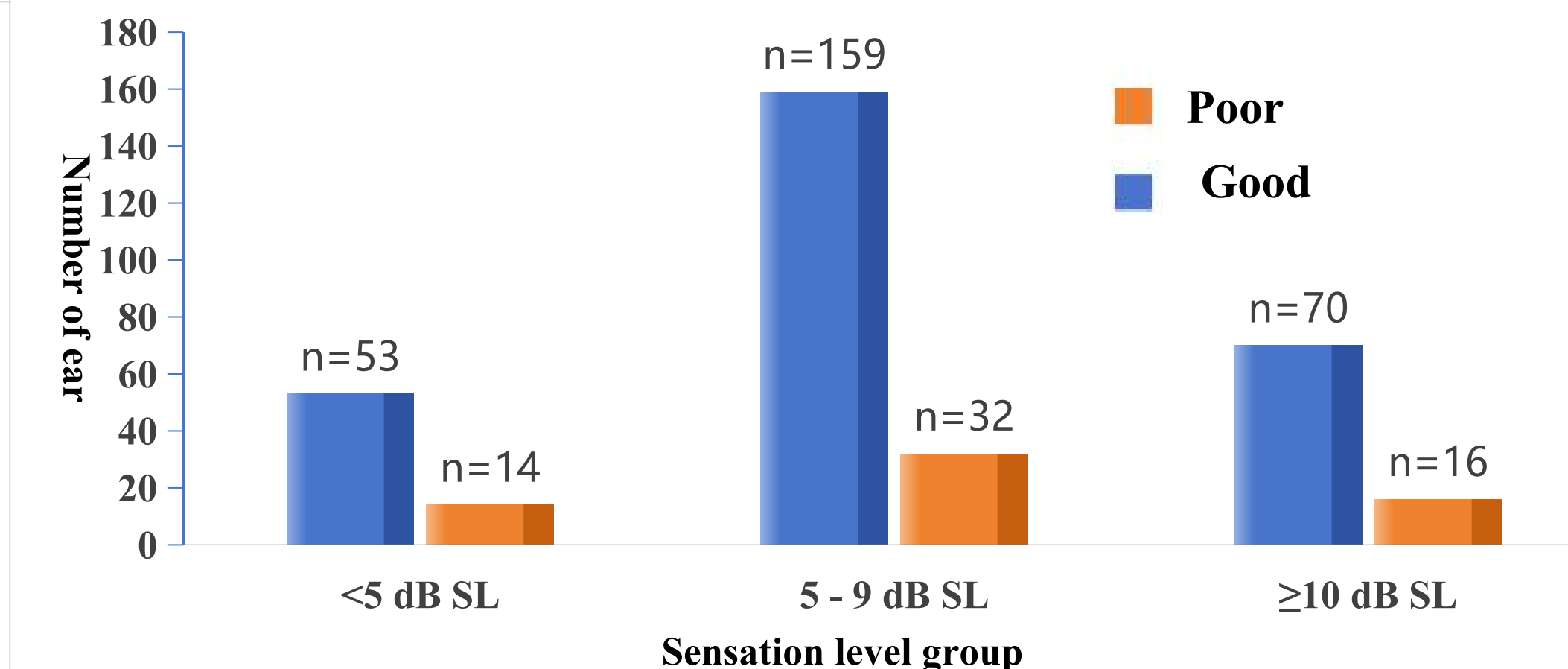


Fig.3 The sensation level across different groups

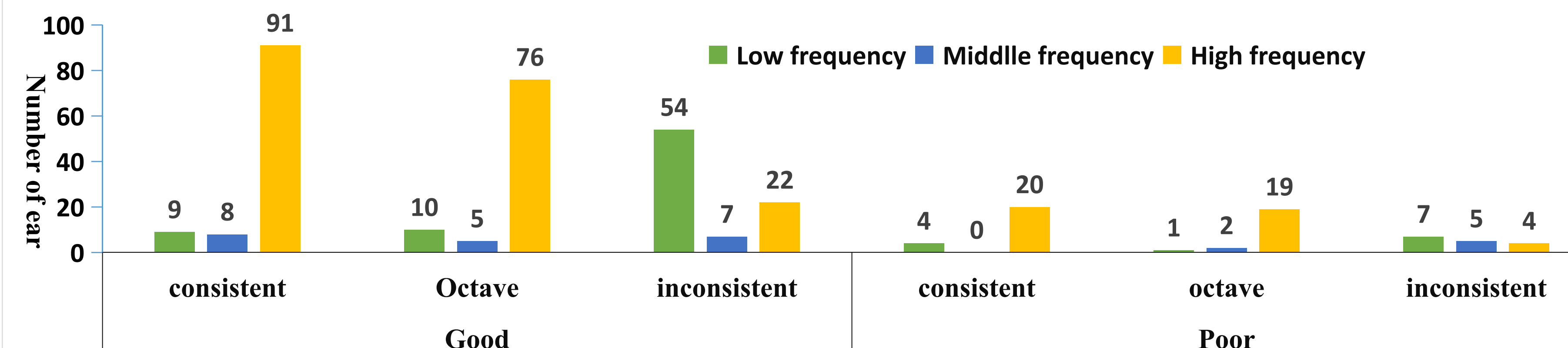


Fig.4 Association of the effectiveness of hearing aids amplification for tinnitus relieve between hearing loss frequency and tinnitus features

Conclusion

- ✓ The findings indicate that hearing aid amplification can relieve the majority of hearing-impaired people's tinnitus at the first clinic appointment, regardless of the tinnitus pitch range.
- ✓ The effectiveness of hearing aids is associated with tinnitus pitch, loudness, and hearing loss severity.

References

- Tunkel D E, Bauer C A, Sun G H, et al.(2014) Clinical practice guideline: tinnitus. *Otolaryngology-Head and Neck Surgery*, 151: S1-S40.
- Cima, R.F.F., Mazurek, B., Haider, H., Kikidis, D., Lapira, A., Norena, A., Hoare, D.J.(2019,) A multidisciplinary European guideline for tinnitus: Diagnostics, assessment, and treatment. *HNO* 67, 10-42