

REDUCTION IN TINNITUS HANDICAP WITH HEARING AID USE

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Introduction

- Tinnitus is a common and often debilitating problem. It is estimated that greater than 30 million individuals have tinnitus; of those, 1 in 5 consider their tinnitus disabling or nearly disabling.¹
- Tinnitus is more prevalent in the Veteran population.² According to VHA compensation and pension claim data, tinnitus is the most prevalent service-connected condition.³
- The Tinnitus Handicap Inventory (THI) and similar tinnitus perception questionnaires have shown significant reduction in perceived tinnitus handicap with treatment.⁴
- Progressive Tinnitus Management (PTM) is an established clinical protocol that involves 5 progressive levels of care. PTM level 2 involves: audiologic assessment, brief assessment of tinnitus, and fitting of hearing aids if appropriate.⁵
- This project was completed to thoroughly evaluate tinnitus perception and the influence of hearing aid use for patients with no prior tinnitus treatment as they progress through the initial stages of PTM.⁵

Methods

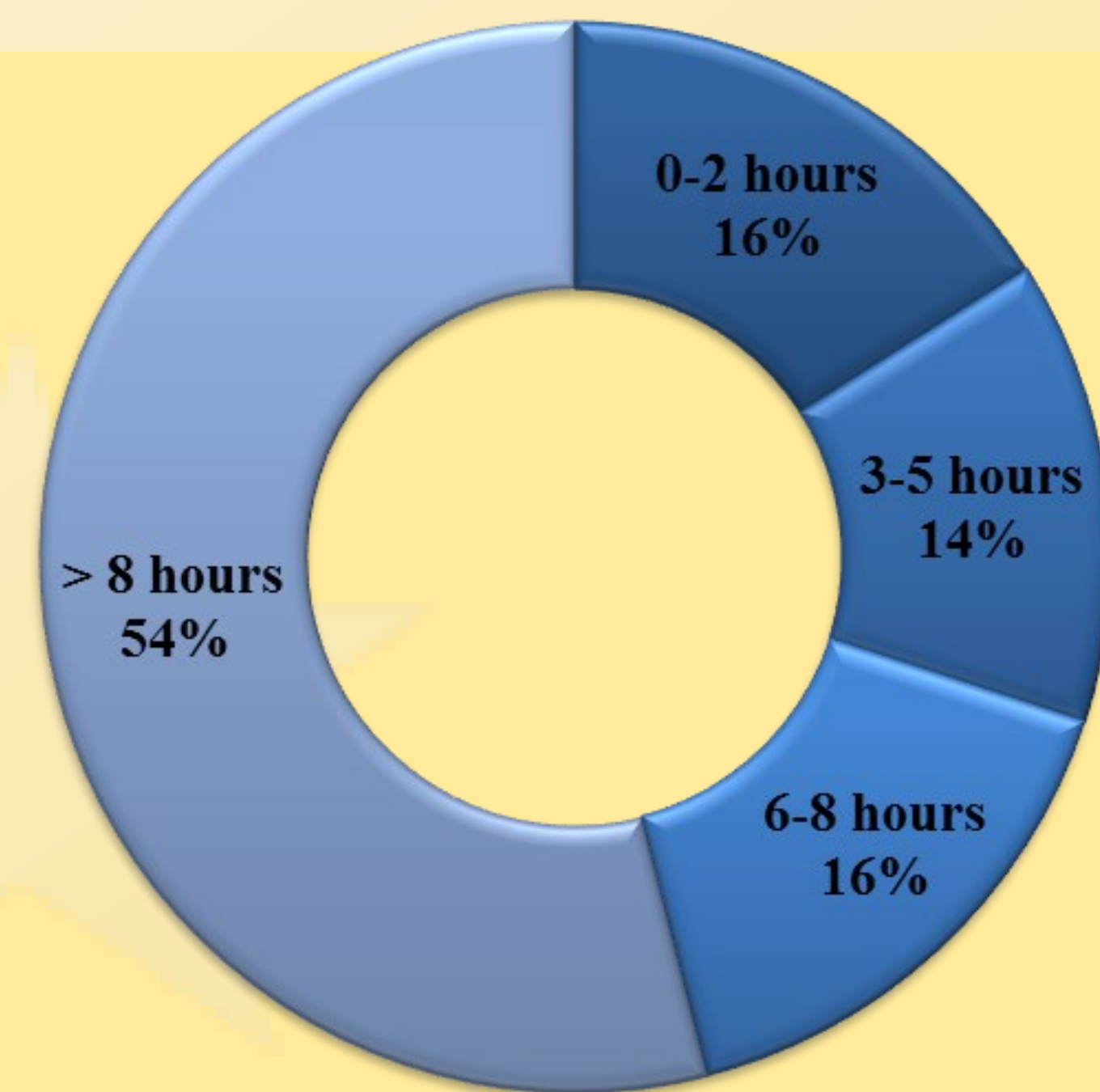
Subjects:

- Patients reporting bothersome tinnitus (THI score greater than 10), hearing loss, and no prior hearing aid experience.
 - Mean age: 65 years, Range: 33-93 years.

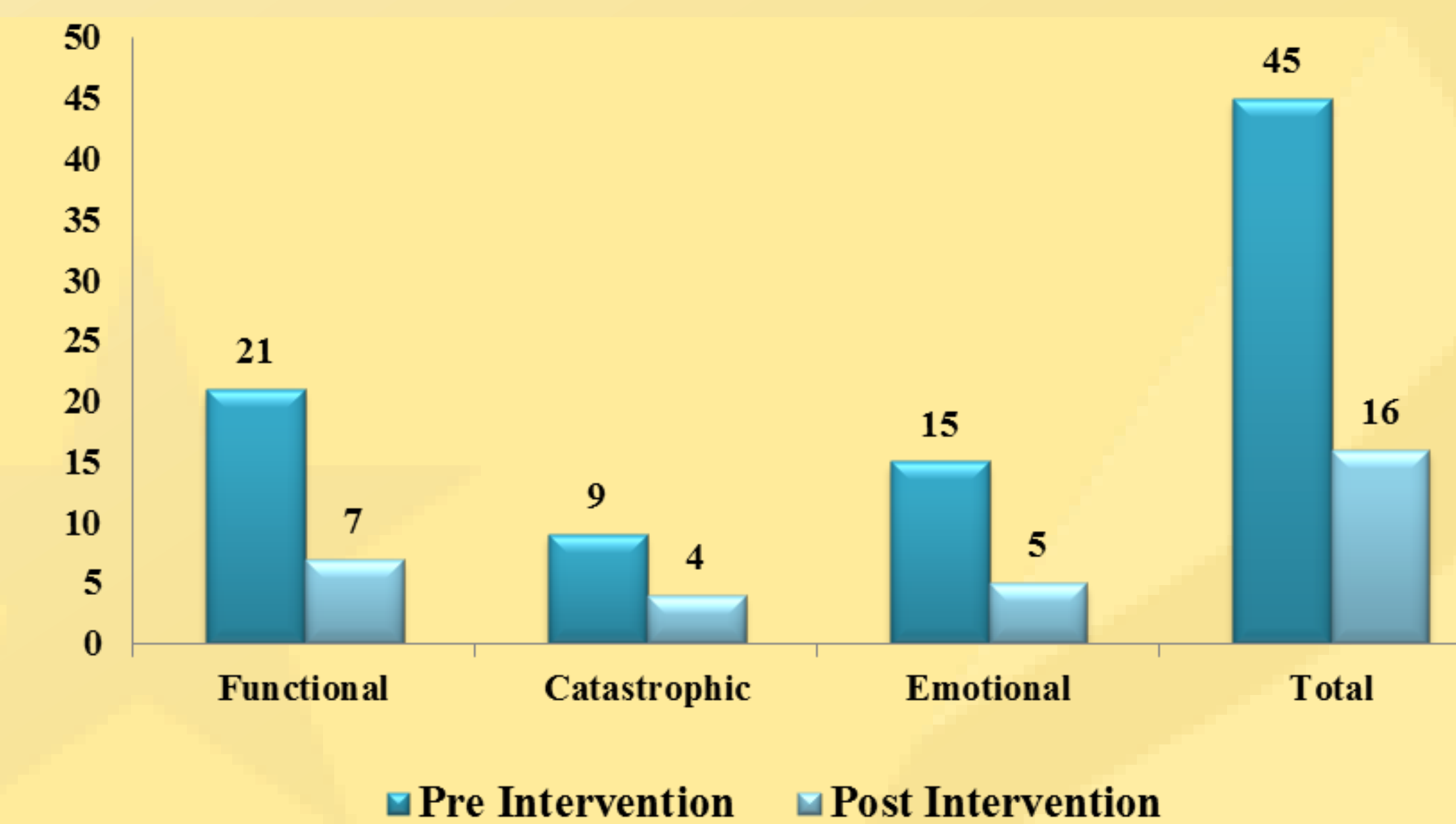
Protocol:

- Obtain audiologic evaluation.
- Administer the following rating scales pre and post intervention:
 - Tinnitus Handicap Inventory.
 - Client Oriented Scale of Improvement (COSI).
 - Tinnitus Interview Form^{5,6} (see handout).
- Program hearing aids to NAL-NL2 target using probe mic measurements without activation of tinnitus proprietary programs.
- Conduct hearing aid follow-up visit 4 weeks post fitting, obtain data-logging, and complete rating scales.

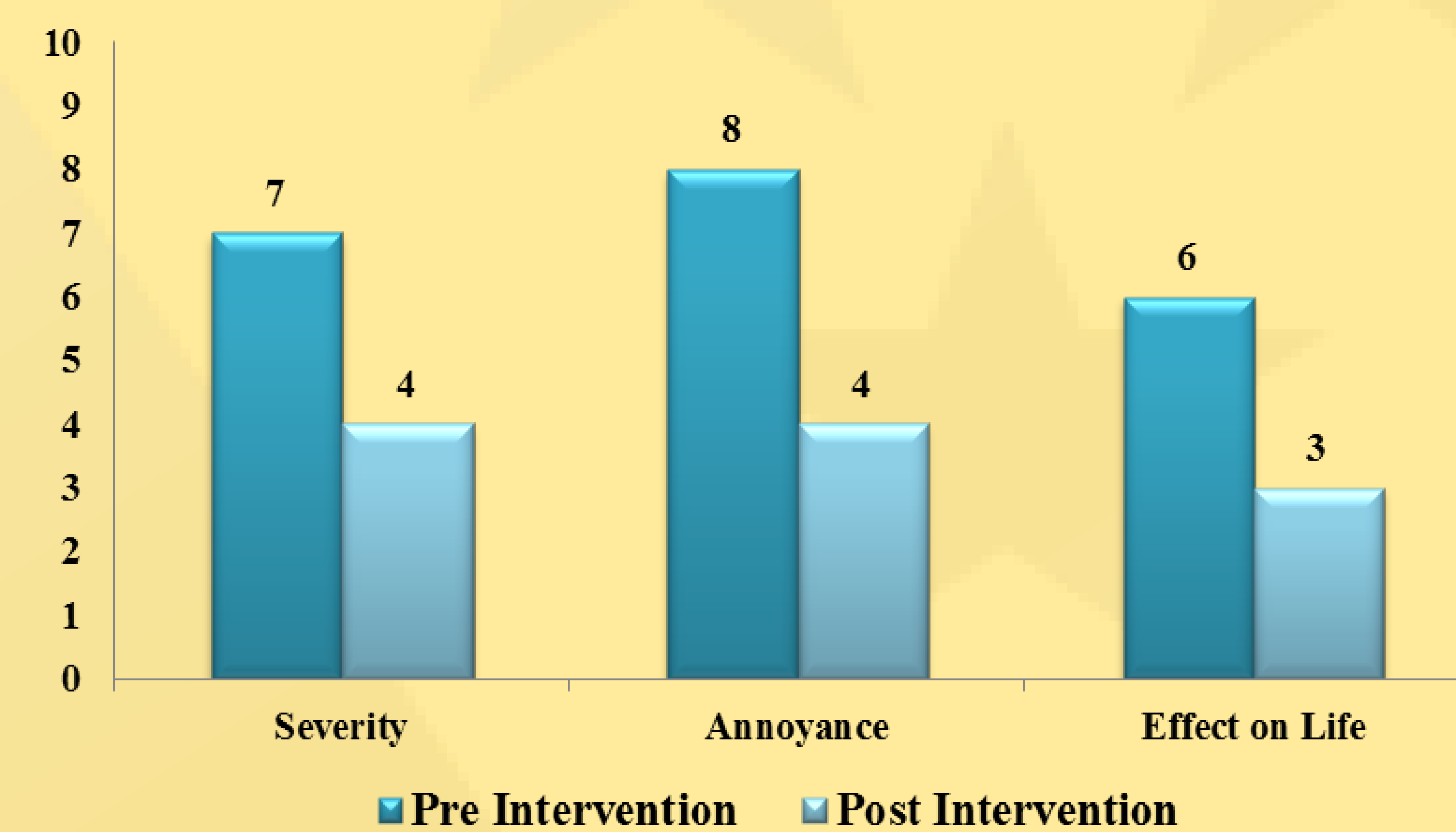
Hours of Daily Hearing Aid Use



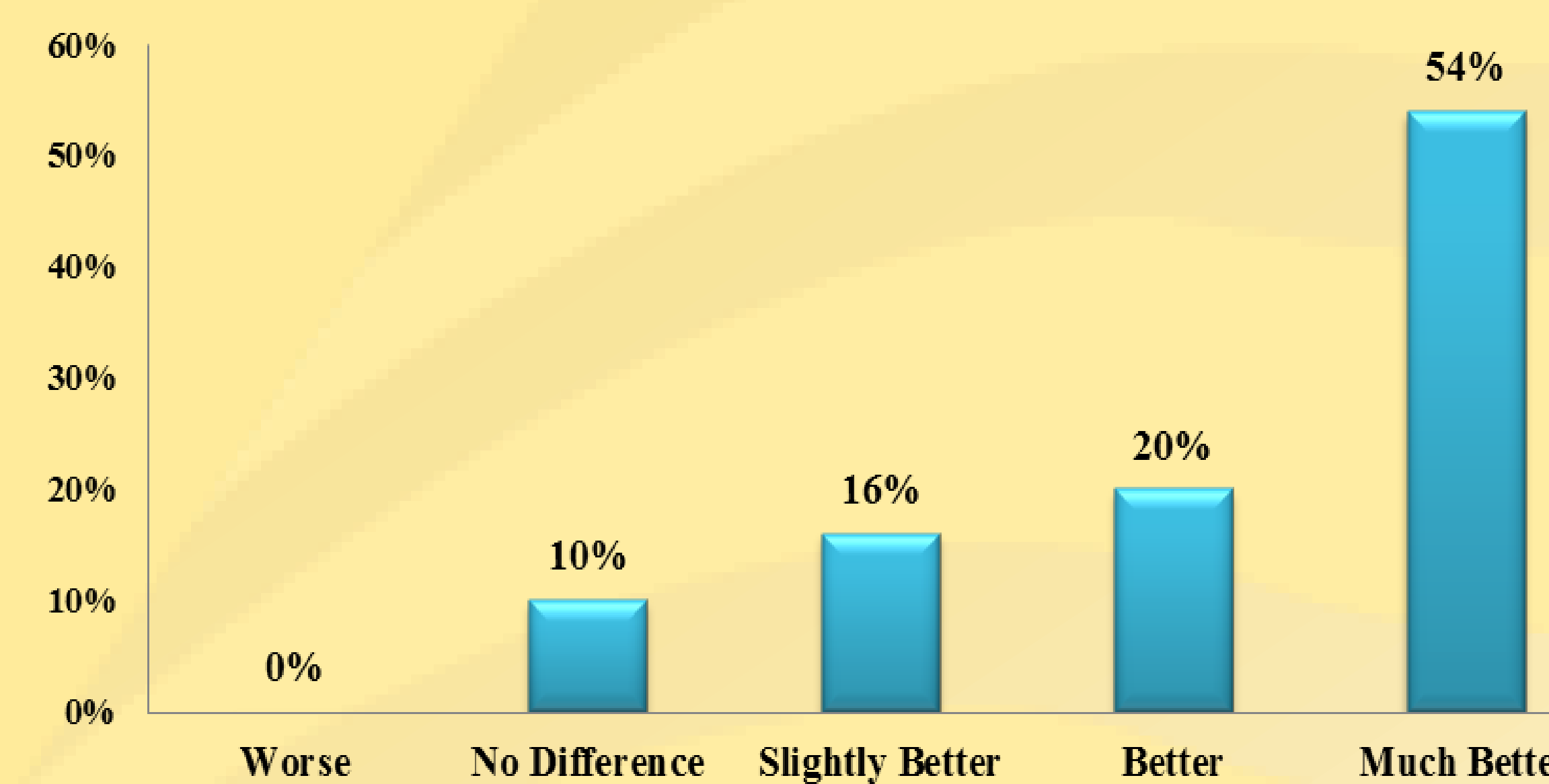
Tinnitus Handicap Inventory Scores



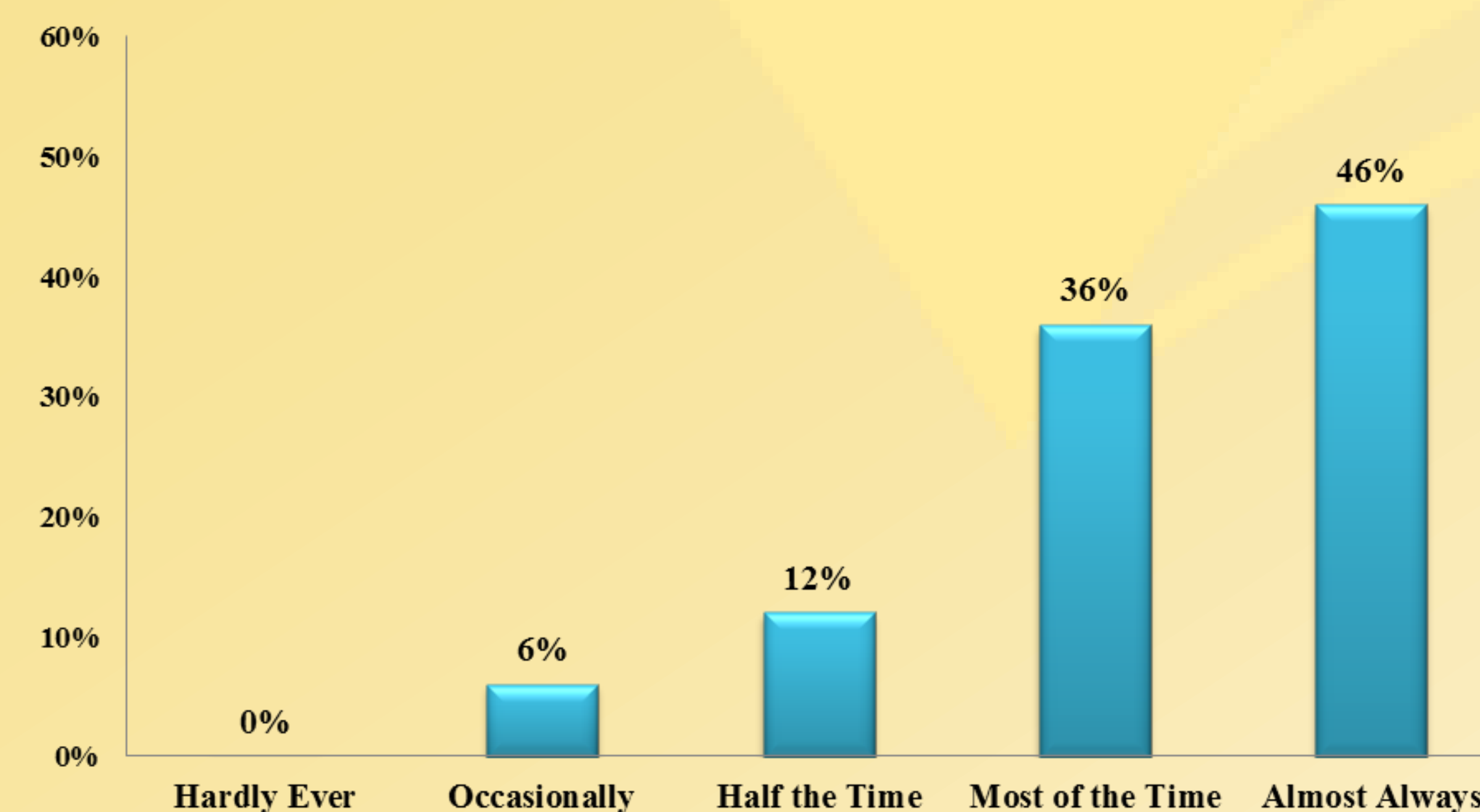
Tinnitus Ratings (10-most severe, 0-no problem)



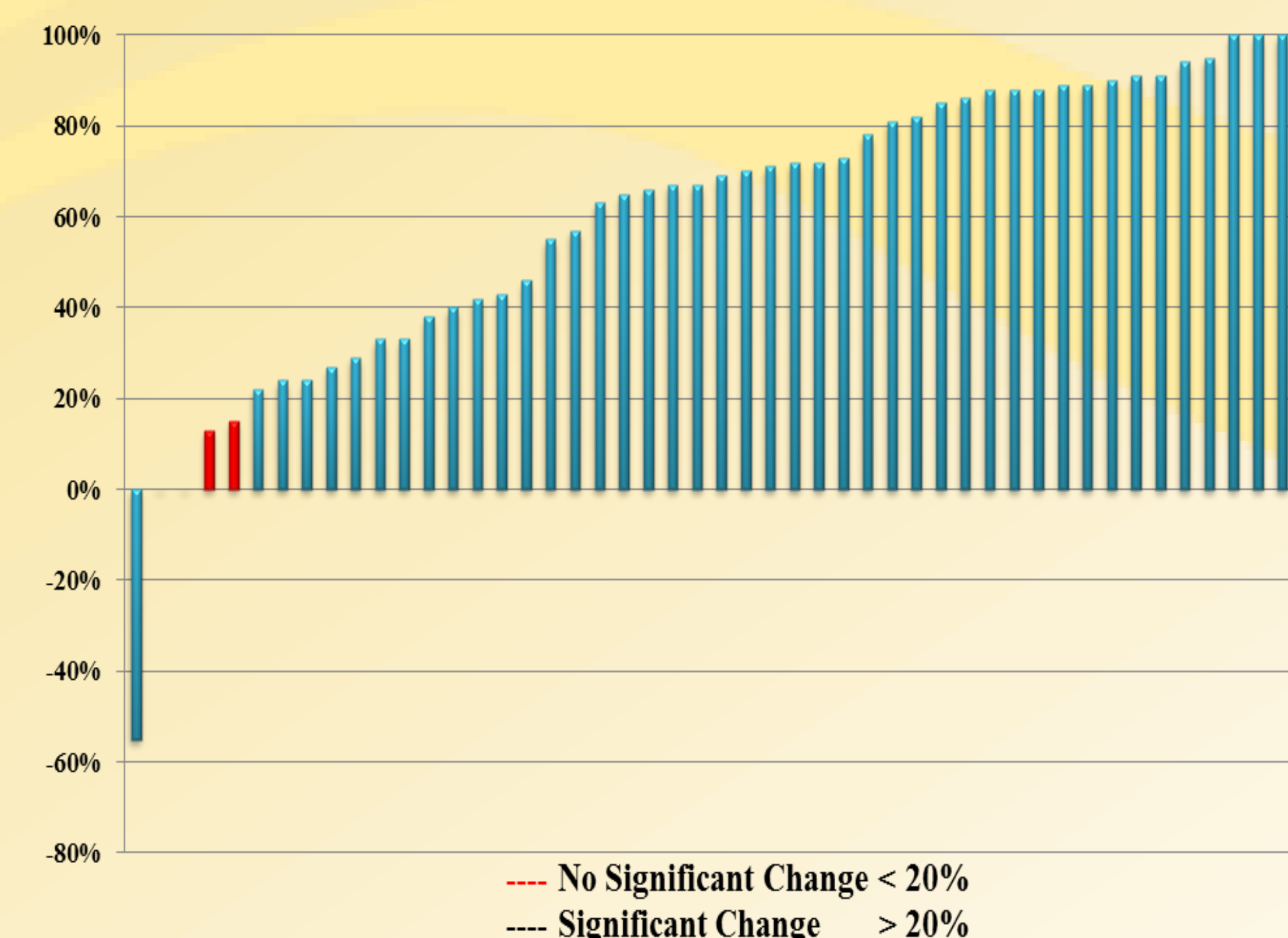
COSI Degree of Change (decrease in tinnitus perception)



COSI Final Aided Ability (person obtains relief)



Percent Change in Total THI



Results

- 50 patients completed the protocol.
- Mean reduction in THI score was 29 points with 90% of patients perceiving greater than a 20% reduction. Significant differences noted across the Functional, Catastrophic, and Emotional sub-scales.
- COSI analysis showed:
 - 90 percent of patients reported their tinnitus as less noticeable with hearing aid use.
 - Despite 5 patients not showing a significant positive change in THI score, all patients noted some relief with hearing aid use.
 - 94 percent reported tinnitus perception was reduced at least half of the time.
- 54 percent of patients wore their hearing aids more than 8 hours per day. However, no significant correlation was found between hours of use and reduction in perceived handicap ($R^2 = 0.0216$).

Clinical Implications

- Data from this study shows hearing aids are a highly effective treatment option in reducing the perception of bothersome tinnitus.
- No correlation was found between hours of hearing aid use and reduction in perceived tinnitus handicap. Hearing aid use variability may be accounted for in part by patients establishing their own effective individualized use pattern.
- Using the current protocol, approximately 10% of hearing impaired patients reporting bothersome tinnitus will require additional treatment. These patients may benefit from PTM Level 3 and beyond.

Citations

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