Introduction

Individuals with a moderate to severe unilateral hearing impairment have distinct perceptual and affective issues, which can be captured with precise speech, spatial, and quality of hearing scales (SSQ) ([1], 2006). These scales measure perceived hearing disability using a series of subscales that are used to derive overall disability measures and calculate statistical power. Section-level analysis was performed using a linear mixed-effects model to derive section-level effect sizes. The derived section-level effect sizes were then used to calculate statistical power for detecting changes in hearing disability following unilateral hearing aid fitting.

Methods

Eighteen participants (10 females, 8 males) aged 14-80 years (M = 56.9 years, SD = 18.47) with moderate to severe unilateral hearing loss completed one 24-hour lateralization task. Each participant was fitted with a hearing aid on the affected side, and the other side was pre-fitted. The aided group was compared to the unaided group. The observed response trajectories to the SSQ reveal a statistically significant difference for any of the SSQ items between the groups.

Results

Eighteen participants (10 females, 8 males) aged 14-80 years (M = 56.9 years, SD = 18.47) with moderate to severe unilateral hearing loss completed one 24-hour lateralization task. Each participant was fitted with a hearing aid on the affected side, and the other side was pre-fitted. The aided group was compared to the unaided group. The observed response trajectories to the SSQ reveal a statistically significant difference for any of the SSQ items between the groups.

Summary and Conclusions

Participants with unilateral hearing loss have significant reductions in hearing disability following the prescription of hearing aids. This significant reduction in disability may be due to the magnitude of the effect size, the design implemented here was underpowered for the detection of changes in any of the SSQ items. By applying derived effect sizes and estimates of statistical power from previous studies, we were unable to detect changes in the SSQ items. By applying derived effect sizes and estimates of statistical power from previous studies, we were unable to detect changes in the SSQ items. This highlights the importance of understanding how sample size and statistical power affect the ability to detect changes in hearing disability.

References