Participants and Hearing Aids

For improving comfort and audibility in specific listening situations, but can be used in conjunction with adaptive directional microphones, digital noise reduction, feedback suppression, and frequency processing without input saturation. Advanced signal processing features such as automatic gain control and compression can be used to ensure loudness for loud music inputs. An input limit of 110 dB SPL allows this loud music to be processed without input saturation.

Additional kneepoint is introduced to achieve flat response in order to restore audibility for soft music inputs. They used a custom software and a touch screen to make the comparison choices. Participants were compensated for their participation and for their mileage to and from the test center.

Methods

Participants

18 individuals with bilateral symmetrical, mild to severe sensorineural hearing loss were recruited from the Minneapolis, MN metropolitan area (see figure 1). Participants ages ranged from 47 to 82 years (mean 66.5 years, standard deviation 8.8 years); there were 24 females and 36 males in the study.

All but 2 participants were experienced users of amplification. One participant was a current monaural hearing aid user.

Results

Figure 5: Responses for music listening preference are shown, based on field trial experience. Ten participants did not respond, as they did not use the music program sufficiently during the field test. Data indicate preference for the music program during music listening.

Summary

This research study aimed to demonstrate whether a new hearing aid program designed for music listening improved listener satisfaction, when compared to typical hearing aid processing.

This research study demonstrated the ease of fitting the new music program. Participants requested minimal gain adjustments, less than 2 dB on average, to the Music program. This demonstrates the success in the initial fitting algorithm.

Data from the forced choice comparison demonstrated a significant preference for the Music program over the Normal program. Individual song sample data shows this preference is reversed for “I Don’t Want to Miss a Thing” which is the only song sample used containing lyrics. The forced-choice comparisons were completed in a sound treated room, typical of an audiological testing booth. Generally, optimal environments for music listening are more reverberant than a sound treated room; therefore these results may not generalize to typical musical listening environments.

Subjective data from the field demonstrated that participants were very satisfied with the sound quality of the Music program, with 40% of participants rating sound quality as good or very good. In addition, among participants who indicated a preference, the new Music program was preferred nearly 8:1 over the Normal program. However, as participants were informed that the new program was designed for music listening, preferences while listening in the field may have been biased.

References


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