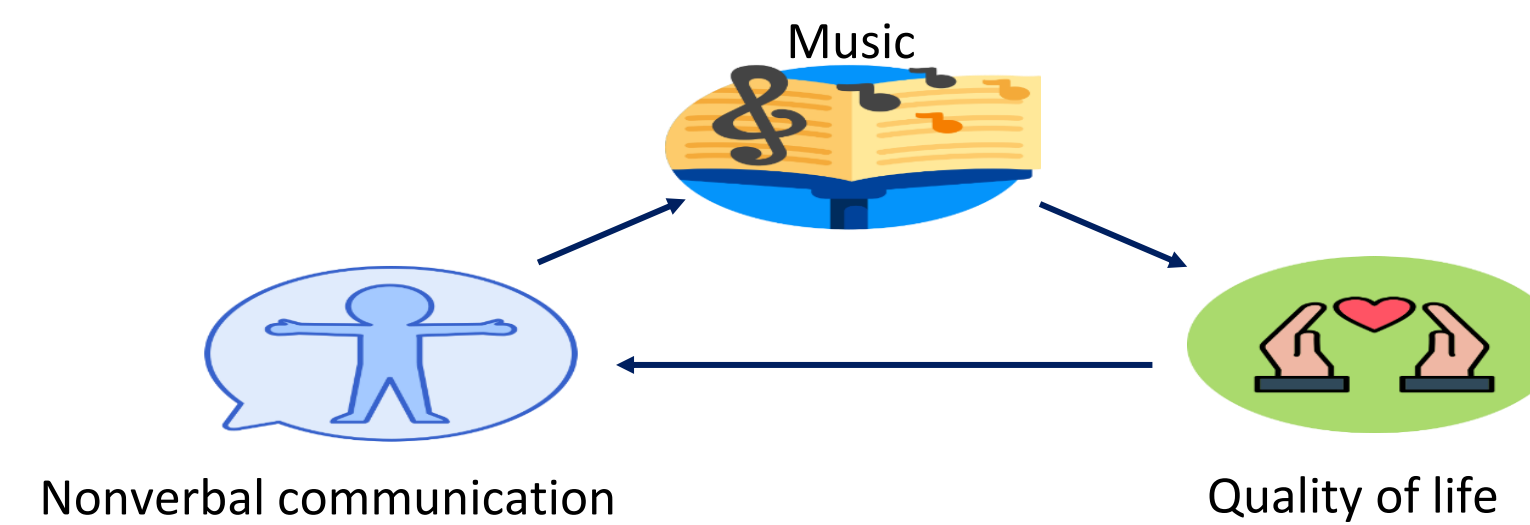


Abstract

Recently, the improvement of music perception abilities for emotional stability and high quality of life has become important for the hearing loss group. This study aimed to examine and compare the music perception abilities of the normal hearing (NH) and hearing amplification system (HAS) groups to find the needs and methods of music rehabilitation. The data were collected from 15 NH adults (33.1±11.4 years) and 15 HAS adults (38.7±13.4 years), of whom eight wore cochlear implant CI systems and seven wore CI and hearing aid systems depending on pitch, melody, rhythm, timbre, emotional reaction, and harmony perception tests. A mismatch negativity(MMN) test was also conducted, and attitudes toward and satisfaction with listening to music were measured. Although the HAS group showed lower music perception ability than the NH group overall, they showed a strong desire for music listening. Also, the HAS group revealed a higher degree of satisfaction even when listening to unfamiliar music played with unusual instruments. It is suggested that systematic and constant musical rehabilitation based on musical elements and different listening experiences will improve music perception qualities and abilities for HAS users.



Objectifs

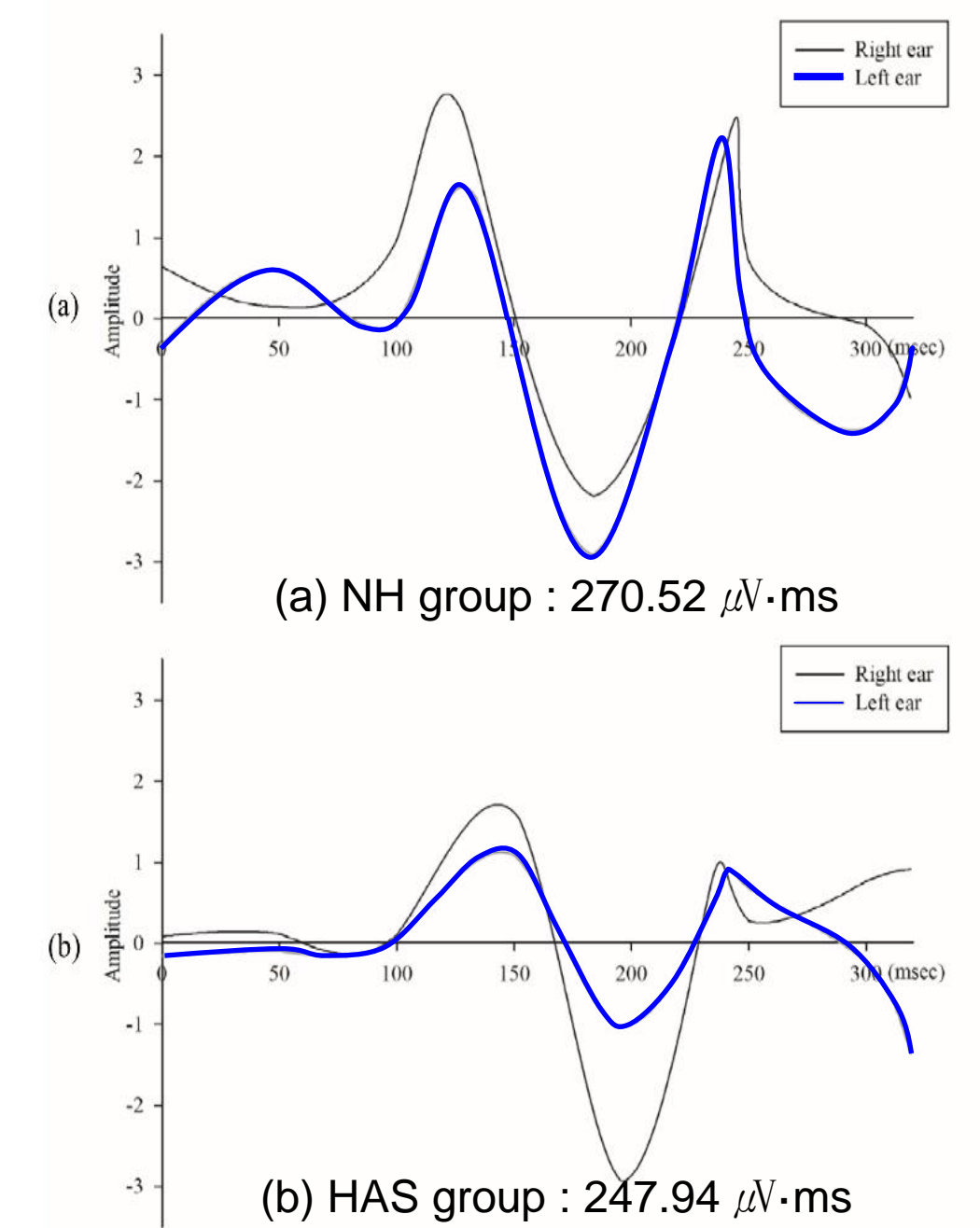
Recently, the Assessment of Music Perception (AMP) was developed for evaluating pitch, melody, rhythm, timbre, and harmony perception abilities, and emotional reaction for analyzing music perception ability developed recently in Korea. Besides, a Music Listening Attitudes and Satisfaction Questionnaire (MASQ) was also developed. These were conducted to NH and HAS group to assess the music perception ability with pitch, melody, rhythm, timbre, harmony and comprehension of the music emotion expressed of the HAS using AMP and suggesting the systematic Music Rehabilitation Program(MRP) for cochlear implant users.

Méthodes et Matériels

- Fifteen NH adults (9 males, 6 females) and 15 HAS users (8 wearing the CI systems, 7 wearing the CI and HA systems; 6 males, 9 females) participated. .
- All of the tests were performed in a sound-treated booth. The musical stimuli were presented at the intensity of 75 dB for the NH group and 85 dB for the HAS group via a speaker in soundproof room.

Résultats

The correction percentages for the NH and HAS groups were 94.0%±6.1% and 75.3%±23.2% in the pitch test; 94.0%±7.1% and 30.3%±25.9% in the melody test; 99.3%±1.8% and 94.0% ± 7.6% in the rhythm test; 78.9%±41.8% and 64.4%±48.9% in the timbre test; 96.7%±10.4% and 81.7%±16.3% in the emotional reaction test; and 85.7%±14.1% and 58.4%±13.9% in the harmony test, respectively, showing statistical significance ($p < 0.05$). For the mismatch negativity test, the area of the waveform was smaller in the HAS groups than in the NH groups, with 70 dB of stimulation showing no statistical significance. The response rates for satisfaction with listening to music were 80% and 93.3% for the NH and HAS groups, showing no statistical significance. For the mismatch negativity test, the area of the waveform was smaller in the HAS groups than in the NH groups, with 70 dB of stimulation showing no statistical significance. The response rates for satisfaction with listening to music were 80% and 93.3% for the NH and HAS groups, showing no statistical significance.



* Mismatch negativity results of NH(upper) & HAS (lower)groups

Conclusion

All of the music perception tests were higher in the NH group than the HAS group. In the pitch and emotional reaction tests, the NH group showed 94.0% and 96.7% with the small difference of 15%–18% from the HAS group. The HAS group showed the lowest score in melody test and the highest score in rhythm test. Interestingly, the NH and HAS groups showed similar scores with 99.3% and 94.0% in the rhythm test. Both the NH and HAS groups showed relatively low performance in timbre and harmony tests. Recently, the research provided a good direction and fine effectiveness of music rehabilitation program for the HAS users. A lot of this sort of reports would improve the quality of life for the HAS users including enjoyment of music.

Références

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