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Satisfaction of use with a commercial array-microphone hearing system

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Introduction:

The benefit of array-microphone systems for speech understanding in noisy environments have been well documented. A problem in the commercialization of such systems is the aesthetics of an effective system consisting of four or five microphones. Varibel is a company marketing a modern design spectacles with a hearing aid and a four-microphone system in each leg.

Method:

The directivity index was measured on Kemar. Next the APHAB and IOI-HA questionnaires were used to measure the benefit and satisfaction with a double four-microphone system during daily use as compared to a conventional hearing aid. 27 hearing-impaired people participated in the test with a prototype version. Scores were analysed for the total group and for subgroups based on amount of hearing loss and a classification of the hearing loss. Added were some questions on acceptance of the design.

Results:

The hearing system has two settings giving a speech-weighted directivity index of 4.4 dB at the low setting and 7.2 dB at the high setting. The test persons reported a significant better performance on Ease of Communication, Background Noise and Reverberant Condition. No difference was found in the score on Aversiveness. This was a general finding over all classifications. The IOI-ha showed a significant improvement of performance in the most-relevant condition and in difficulties encountered in daily life.

Conclusion:

The design of this type of hearing aid is very acceptable and the users noticed a positive effect of the array microphone in Ease of Communication, Background Noise and Reverberance. Improvement of performance was also indicated in the most relevant condition

