

Effect Of Wireless FM System On School Life In Children With Cochlear Implant

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Objectives: The purpose of this study was to investigate the effect of frequency modulation (FM) system of cochlear implant (CI) users on emotional and behavioral aspects as well as listening ability in noise in daily school life.

Background: Most pediatric CI recipients may experience speech recognition difficulties in acoustically challenging situations and environments, and this may affect their school life.

Methods: Eleven children were enrolled who had used CI for more than one year, and all were fitted with personal CI-FM system. All of the enrolled children underwent Hearing in Noise Test (HINT) at the time of enrollment, then started to use the FM system for 6 months in the actual school life. Follow up evaluation was performed after 6 months comprising of three separate investigative measures: (1) a teacher and children questionnaire to assess educational performance, (2) self-report type Behavior Assessment System for Children 2nd (BASC-2) test, and (3) teacher-report type BASC-2 test.

Results: Use of FM system showed significant improvement of speech reception performance in multi-talker babble noise condition. Self-report type BASC-2 revealed significant improvement of attention subcategory by use of the FM system for 6 months. Teacher report form showed improved school problems and behavior symptom index. Although no statistically significant difference was found regarding the academic achievement, scores for language subjects tended to be better than those for the other subjects.

Conclusions: Use of the wireless FM system in school-aged children with CI improves speech perception in multi-talker noise. Six-month use of the system may lead to improved attentiveness, hyperactivity, behavior and emotion in their school life, and this result should be considered during counselling in CI clinic