

## **Evaluation of the use of a questionnaire to detect hearing loss in Kenyan pre-school children**

### **Abstract:**

In developing countries, there is a lack of trained personnel and testing equipment to facilitate the early detection of hearing impairment in children. A questionnaire offers a low cost option and the value of this for detecting hearing impairment in pre-school children was determined in several districts in Kenya. The questionnaire was completed by either teachers, parents/carers or community nurses. The children were subsequently tested using pure tone audiometry and visual examination of the ear by ENT Clinical Officers, who were not given prior access to the results of the questionnaire. A total of 757 (88%) questionnaires were completed. Of the 735 children, who could be tested using pure tone audiometry, four were found to have a unilateral hearing impairment and one was detected by the questionnaire. A total of 13 children had a bilateral hearing impairment  $>40$  dB HL. All were detected using the questionnaire. There were eight males and five females with ages ranging from 4.2 to 6.9 years, mean age 5.7 years and median age 5.8 years. Eight had a sensorineural hearing impairment and two a mixed hearing impairment. Three of the children with a sensorineural hearing loss had a family history of hearing impairment. No question detected all children with a hearing impairment and some questions were more discerning than others. There was 100% sensitivity for the questionnaire when a hearing loss of  $>40$  dB was considered, but specificity was lower at 75%. Negative predictive value was 100%, but the positive predictive value was low, 6.75%. It was concluded that a questionnaire of this nature could be usefully applied at Primary Health Care level for detecting hearing impairment at the pre-school stage. There would be need for services available for diagnosis, treatment and habilitation before a screening programme was introduced