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Assessing the efficacy of asynchronous telehealth-based hearing screening and diagnostic services using automated audiometry in a rural South African schoolSamantha Govender^{1,2}, M Mars¹¹Sefako Makgatho Health Sciences University, South Africa²University of KwaZulu-Natal, South Africa

An extra fat can extra harmonised oAsynchronous automated telehealth-based hearing screening and diagnostic testing can be used within the rural school context to identify and confirm hearing loss. The aims of the study were to evaluate the efficacy of an asynchronous telehealth-based service delivery model using automated technology for screening and diagnostic testing as well as to describe the prevalence, type and degree of hearing loss. A comparative within-subject design was used. Frequency distributions, sensitivity, specificity scores as well as the positive and negative predictive values were calculated. Testing was conducted in a non-sound-treated classroom within a school environment on 73 participants (146 ears). The sensitivity and specificity rates were 65.2% and 100%, respectively. Diagnostic accuracy was 91.7% and the NPV and PPV were 93.8% and 100%, respectively. Results revealed that 23 ears of 20 participants (16%) presented with hearing loss. Twelve per cent of ears presented with unilateral hearing impairment and 4% with bilateral hearing loss. Mild hearing loss was identified as most prevalent (8% of ears). Eight ears obtained false-negative results and presented with mild low- to mid-frequency hearing loss. The sensitivity rate for the study was low and was attributed to plausible reasons relating to test accuracy, child-related variables and mild low-frequency sensory-neural hearing loss. The study demonstrates that asynchronous telehealth-based automated hearing testing within the school context can be used to facilitate early identification of hearing loss; however, further research and development into protocol formulation, ongoing device monitoring and facilitator training is required to improve test sensitivity and ensure accuracy of results.