Abstract

Objective: To determine the feasibility of audiological screening in low-risk neonates, using Otoacoustic Emissions (OAEs), at various test times following birth. The achievability of a screening programme within the Midwife Obstetric Unit (MOU) 3-day assessment clinic at the Phola Park Community Health Centre (PPCHC) was deliberated.

Participants: Two hundred and seventy two neonates were included in this study.

Design: A prospective and longitudinal design was employed.

Methods and Materials: Case history interviews, otoscopic examinations and Distortion Product Otoacoustic Emissions (DPOAEs) were carried out at two sessions. The initial session took place within 6 hours after birth and the second session at approximately 3 days after birth at the MOU 3-day assessment clinic.

Data Analysis: Data was collected as "*pass*" and "*refer*" screening results, the number of births was compared to the number of participants at the two sessions. The number of "*pass"* and "*refer"* results per session were analysed and results per participant at the two sessions were compared to detect false-positives. The return for follow-up rate was considered.

Results: **S**creening is possible within hours of birth but is more practical and efficient at the MOU 3-day assessment clinic. During the study, 260 neonates were born at PPCHC, 38.07% of these were screened at session 1 and a total of 268 newborns were screened at session 2. The pass rate was 16.16% at session 1 and 99.25% at session 2; rendering a false-positive rate of 82.10% at session 1. Time of birth relative to discharge, resources, environmental factors, noise levels, return for follow-up rate and referral rate have been identified as factors that may impact the practicability and efficiency of screening.

Conclusion: Outcomes of the study highlight the importance of studying methodologies to ensure effective reach for hearing screening within the South African context. Based hereon, screening neonates immediately after birth is possible. However, it is recommended that screening forms part of the MOU 3-day assessment protocol to ensure that a higher number of neonates are reached when confounding factors such as vernix have plummeted; hence decreasing false-positives.

Key words: *otoacoustic emissions, newborn audiological screening, infant hearing, protocols, universal hearing, high risk register, South Africa*