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A Holistic Approach to Minimize the Negative Effects of Auditory Stimulation in the NICU is the Need of the Hour

We read with interest the article on effect of earmuffs on physiological parameters of preterm neonates by Kaur, et al. [1] in the recent issue of the journal. We would like to commend the authors on their effort. Herein, we would like to add our views on some of the issues raised in the article.

A systematic review on the effect of earmuffs on physiological parameters in preterm infants by Ozdemir, et al. [2] concluded that it is not clear that the use of earmuffs reduces stress or provides physiological stability in preterm infants born between approximately 28-32 weeks [2]. Other studies have also pointed out the potential for certain complications with the use of hearing protection devices such as damage to delicate preterm skin by the adhesive that keeps the hearing protection device in place, and damage to the developing ear structure if a tight seal is maintained around the ear for long periods of time [3].

We feel that it would be appropriate to explore other modalities to minimize the negative effects of auditory stimulation from the neonatal intensive care unit environment. An interesting study by Webb, et al. [3] suggested benefit by replicating uterine sounds for preterm babies, which attenuated loud peaks of sound, thereby reducing the negative impact of the additional volume [4]. A more holistic approach would be to create an individualized environment with a Newborn Individualized Developmental Care and Assessment Program (NIDCAP) [5], which may be more effective than trying to remove all negative sounds. Low-risk preterm infants who received individually based NIDCAP orientated care showed significant improvement in neurodevelopmental outcomes, including self-regulation and posture at 2 weeks of age [5]. Hence, while the use of earmuffs may have some potential for benefit, it would be more appropriate to focus also on other innovations to minimize noxious environmental noise and promoting and individualizing positive sounds.

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