

Feasibility of Using Musical Intervention to Promote Growth in Preterm Infants in the Neonatal Intensive Care Unit (NICU)

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Abstract : Premature babies in the Neonatal Intensive Care Unit (NICU) are usually protected in individual incubators to ensure a constant temperature and humidity. Accompanied by 24-hour monitoring by medical equipment, this provides a considerable degree of protection for the growth of preterm babies. However, preterm babies are still continuously exposed to noise at excessively high decibels (>45dB). Such noise has a highly damaging effect on the growth and development of preterm babies. For example, in the short term, it can lead to sleep deprivation, stress reactions, and difficulty calming emotions, while in the long term, it can trigger endocrine disorders, metabolic disorders, and hearing impairment. Fortunately, musical interventions in the NICU have been shown to provide calmness to newborns. This article integrates existing research on three types of music that are beneficial for preterm infants and their respective advantages and disadvantages. This paper aims to present a possibility, based on existing NICU equipment and experimental data related to musical interventions, to reduce the impact of noise on preterm babies in the NICU through a system design approach that incorporates a personalized adjustable music system in the incubator and an overall music enhancement in the open bay of the NICU.

Keywords : music interventions, neonatal intensive care unit (NICU), premature babies, neonatal nursing

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