

Live Music Is Beneficial to Preterm Infants in the Neonatal Intensive Care Unit Environment

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ABSTRACT: Background: Music stimulation has been shown to provide significant benefits to preterm infants. We hypothesized that live music therapy was more beneficial than recorded music and might improve physiological and behavioral parameters of stable preterm infants in the neonatal intensive care unit. **Methods:** Thirty-one stable infants randomly received live music, recorded music, and no music therapy over 3 consecutive days. A control of the environment noise level was imposed. Each therapy was delivered for 30 minutes. Inclusion criteria were postconceptional age ≥ 32 weeks, weight $\geq 1,500$ g, hearing confirmed by distortion product otoacoustic emissions (DPOAEs), and no active illness or documentation of hyperresponsiveness to the music. Heart rate, respiratory rate, oxygen saturation, and a behavioral assessment were recorded, every 5 minutes, before, during, and after therapy, allowing 30 minutes for each interval. The infant's state was given a numerical score as follows: 1, deep sleep; 2, light sleep; 3, drowsy; 4, quiet awake or alert; 5, actively awake and aroused; 6, highly aroused, upset, or crying; and 7, prolonged respiratory pause > 8 seconds. The volume range of both music therapies was from 55 to 70 dB. Parents and medical personnel completed a brief questionnaire indicating the effect of the three therapies. **Results:** Live music therapy had no significant effect on physiological and behavioral parameters during the 30-minute therapy; however, at the 30-minute interval after the therapy ended, it significantly reduced heart rate (150 ± 3.3 beats/min before therapy vs 127 ± 6.5 beats/min after therapy) and improved the behavioral score (3.1 ± 0.8 before therapy vs 1.3 ± 0.6 after therapy, $p < 0.001$). Recorded music and no music therapies had no significant effect on any of the tested parameters during all intervals. Both medical personnel and parents preferred live music therapy to recorded music and no music therapies; however, parents considered live music therapy significantly more effective than the other therapies. **Conclusions:** Compared with recorded music or no music therapy, live music therapy is associated with a reduced heart rate and a deeper sleep at 30 minutes after therapy in stable preterm infants. Both recorded and no music therapies had no significant effect on the tested physiological and behavioral parameters. (BIRTH 33:2 June 2006)

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