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Investigation of the effect of listening to white noise during the first invasive interventions of newborns on pain, comfort, crying time and physiological parameters

This study was carried out at Batman Training and Research Hospital; from October 9, 2021 to March 20, 2022, listening to white noise during the first invasive interventions of vitamin K Intramuscular Injection (IM) to newborns; a randomized controlled experimental study was conducted with 75 newborns to examine the effects of pain, comfort, crying time and physiological parameters.

The newborns in the white noise group were started to listen to white noise 5 minutes before vitamin K IM administration, IM was applied by the same midwife at the 5th minute, and 10-minute camera recording was taken until 5 minutes later. In the study; the action camera was placed on a tripod and the shots were taken. Data were collected using the Baby Information Form, the Family Information Form, the Newborn Pain Scale (NIPS) and the COMFORTneo Behavior Scale (COMFORTneo).

It was determined that the mean crying times (24.14 ± 15.43) of the babies who were listened to white noise (experimental group) were considerably lower than the control group (40.03 ± 13.58) who were not listened to white noise ($p=0.000$). As a result of the analyzes made; The crying time (sec.) in the experimental group was significantly lower than those in the control group ($Z=-4.428$; $p=0.000$). While heart rates during and after the procedure in the experimental group were significantly lower than those in the control group ($p<0.05$), SpO₂ values were significantly higher than those in the control group ($p<0.05$). The Cronbach's alpha coefficient values of the COMFORTneo and NIPS scales were found to be highly reliable for observers, respectively. As a result of the intra-class correlation analysis, it was determined that the agreement between the observers was significant, and the degree of agreement was excellent ($p<0.05$). In this respect, according to the 1st, 2nd and 3rd observers, the pain estimation, distress estimation, COMFORTneo and NIPS total values in the experimental group were found to be significantly lower than those in the control group ($p<0.05$).

Consequently; it is recommended that nurses listen to white noise, which is a non-pharmacological method, for newborns during invasive intervention, because of its positive effects on the physiological parameters (heart rate, oxygen saturation), shortening the crying time, reducing the pain, increasing the comfort.

Keywords: Comfort, Invasive Procedures, Newborn, Pain, White noise.

Recent Publications

1. Çetinkaya Ş. The effect of working conditions on the family, daily and social lives of the nurses employed at Çukurova University, Balcali Hospital. International Journal of Nursing and Midwifery August 2011;3(8):99-108.
2. Özünlü T, Çetinkaya Ş. The relation between pregnant adolescents' attitude about nutrition and weight gain during pregnancy and hemoglobin level. Open Journal of Obstetrics and Gynecology; February 2013;3(No.1A):172-179.

3. Teksöz E, Çetinkaya Ş. COOP Adolescent Chart: A validity and reliability test in Turkey. International Journal of Caring Sciences. January-April 2016;9(1):34-49.

Biography

Şenay ÇETINKAYA has 5 patent applications. These patent applications relate to medical devices. With the first of these, European and American patents were approved. She won the innovative nurse of the year award with one and a silver medal with the other. She has 3 German, 1 UK, 1 French and 1 Turkish patents. Having completed her undergraduate, graduate and doctorate education in nursing at Ege University, Assoc. She has been continuing to train undergraduate and graduate students of nursing for 35 years. She worked as Ege University Thoracic and Cardiovascular Surgery Intensive Care Nursing for 8 years. In 25 years of this 35-year study period, she conducted undergraduate and graduate courses in Child Health and Disease Nursing alone. She has been working as the head of the Department of Child Health and Diseases Nursing at Çukurova University for 15 years. During this time she served as the Erasmus Faculty coordinator.

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