Efficacy of Buzzy Device Versus EMLA Cream for Reducing Pain During Needle-related Procedures in Children: A Randomized Controlled Trial

Dr. Nasser Haidar
MD, QU and HMC, Qatar

Dr. Mohammed Al Amri
MD, QU and HMC, Qatar

Nora G. Sendad
KN, MAW, HMC, Qatar

Dr. Fathi Toaimah
MD, HMC, Qatar

Abstract:

Statement of the problem: Several pain management tools exist but with limitations in their efficacy or applicability. The EMLA cream is currently used for pain relief for needle-related procedures; however, it needs a minimum of 30-45 minutes to work. The Buzzy is a device that can lead to quicker pain relief. The purpose of this study is to evaluate the effect of Buzzy device in pain and anxiety reduction compared to EMLA cream in children requiring venipuncture.

Methods: Randomized clinical trial comparing pain and anxiety reduction by Buzzy device as the intervention group with the standard care (EMLA cream) as the control group in children aged 2-14 years who required blood extraction or intravenous cannulation based on their clinical needs. The outcome measures were the degree of pain scores and anxiety ratings at different stages of the needle-related procedures. Trial Registration: clinicaltrials.gov Identifier: NCT05354739.

Findings: A total of 300 patients with a mean age of 6.5 ± 3.1 years were enrolled. Baseline characteristics were similar between Buzzy device and EMLA cream groups. The observed pain scores by research nurses and a parent were significantly lower in EMLA group compared to Buzzy device group, however, the pain scores by the self-assessment scale were not statistically significant with mean difference of -0.332, 95% CI -0.635 to -0.028 (P = 0.062). The level of anxiety was significantly lower in EMLA compared to Buzzy device (P =0. 0.0001). Both staff and parents' satisfaction, success rate of cannulation, type of blood tests, and comment on the physician on the results were similar in both groups.