



The Effect of Transcutaneous Electrical Nerve Stimulation on Pain Control and Anxiety Reduction during Dental Procedure in children 9-14 years old

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Abstract:

The aim of the study is to examine the effectiveness of the Transcutaneous Electrical Nerve Stimulation in reducing pain and anxiety during a dental procedure. The method of Transcutaneous Electroneurostimulation is based on the principle of Electroanalgesia, where stimulation of A nerve fibers occurs. Stimulation of the A fibers blocks C fibers responsible for transmission of pain at higher levels of the nervous system. Transcutaneous Electrical Nerve Stimulator (TENS device) works on reduction of acute and chronic pain, stress, tension, poor circulation and fatigue. Similarly, it can be used to manage pain during various dental procedures, as well as pain due to various conditions affecting the maxillofacial region. It can also be used as a distraction or placebo mechanism in order to reduce stress and anxiety during dental procedures. During the first visit patients will be classified based on dental status examination. Based on the need for restorative intervention Class I on the first permanent molar and age between 9 and 14 years, patients will be randomly selected into three groups: 1) group A of 40 examinees, on whom there will be no anesthesia applied; 2) group B of 40 examinees, on whom the TENS device will be applied; 3) group C of 40 examinees who will receive local anesthesia. Anxiety levels will be measured on all three groups of patients before and after the procedure. Level of anxiety will be measured with the help of tests for anxiety and pain: ASI (Anxiety Sensitivity Index), Picture Scale of Self-assessment (Self-Assessment Manikin Scale), Norman Corah Dental Questionnaire, CFSS - DS (Children`s Fear Survey Schedule - Dental Subscale), and Visual Analogue Scale (VAS). The hypothesis is that local anesthesia will act as an analgetic in order to perform the procedure without pain and that the TENS device will act equally or less effective on pain and anxiety in relation to local anesthesia. The expected result is that the TENS device will successfully achieve



mild analgesia and act anxiolytic during the first visit. The assumption is that only one treatment with TENS advice will be enough in order to reduce anxiety. Expected scientific contribution of measuring stress levels with stress-questionnaires in patients will give a broader view of connection and the impact of psychological stress on the manifestations of anxiety and pain control.

Biography:

Nina Cebalo, dr.med.dent. graduated from School of Dental Medicine, University of Zagreb in 2012. She started her PhD studies at School of Dental Medicine, University of Zagreb in 2015. Currently she is working as a resident dentist at Community Health Center Zagreb-West. Dr. Cebalo is very passionate about spreading education and knowledge among patients and general population, so she organises and gives Dental Education lectures at the Community Health Center Zagreb-West. She is also teaching at Croatian High School for Dental Assistants and University of Applied Health Sciences about Non-pharmacological pain control mechanisms. In December 2018. she received an award for Best Poster Presentation on Christmas Dental Congress in Zagreb, Croatia. As a passionate volunteer this year she worked in Kathmandu, Nepal on children whose parents have no ability to pay for a dental exam in a dental office.

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