



## Effect of Music Therapy in Anxiety Reduction for Local Anesthesia Injection by Dental Students

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### Abstract

The objective of this research is to reduce dental anxiety of the patients during local anesthesia injection by dental students. In this pilot study, 60 patients who came into Oral Surgery Department, College of Dental Medicine, Rangsit University during the period between June 2019 to October 2019 were evaluated. Patient data including vital signs (systolic blood pressure, diastolic blood pressure and a heart rate), the anxiety score (MDAS), the pain score (VAS) and the satisfaction score were evaluated by statistical tests. There was no statistically significant difference of vital signs between music and non-music groups ( $p>0.05$ ). No statistically significant difference of anxiety score between music and non-music groups ( $p>0.05$ ). The mean of anxiety score preoperatively in music group was 10.66 and decreased to 9.06 postoperatively while the mean of anxiety score preoperatively in non-music group was 10.34 and decreased to 9.58 postoperatively. There was a statistically significant difference of preoperative anxiety score and postoperative anxiety score in music group ( $p<0.05$ ) while there was no difference in non-music group ( $p>0.05$ ). The use of music therapy is a simple, safe, inexpensive and non-pharmacological intervention that can effectively reduce dental anxiety of the patients during local anesthesia injection.

**Keywords:** Music therapy, Dental student, Anxiety, Local anesthesia injection, MDAS, Vital signs

### 1. Introduction

Anxiety is an emotional state that one feels endangered, insecure or in an unpredictable situation that has a physiology effect on body and mind (Aartman, de Jongh, Makkes, & Hoogstraten, 2000). In the dental clinic, many factors can cause anxiety, whether the surrounding environment, the sound of drilling, the white coat of dentists, local anesthesia injection, and dental treatment procedures can cause high anxiety for the patients (Acharya, Joshi, & Pradhan, 2018). Likewise, experience of the operator also affects patient's emotion. Dental anxiety contributes threatening to avoidance and it may cause complication in dental treatment (Stabholz & Peretz, 1999). The American Dental Association (ADA) estimated that 35 to 50 million adults have so much anxiety about dental visits that they worry, postpone, or avoid seeing their dentist (Ogle & Hertz, 2012). This behavior results in a bad oral health, patients with dental fear or anxiety usually show up for dental treatment only when pain occurs or in need for emergency treatment (Quteish, 2002). This kind of treatment is time consuming and often require complicated and traumatic treatment procedures, which further reinforces their fear, leading to complete avoidance in the future (Armfield, Stewart, & Spencer, 2007). Treating patients with dental fear and anxiety combined with complicated treatment procedures can also inflict stress to the dentists (Skaret, Raadal, Kvale, & Berg, 2000). Therefore, it is essential to reduce the anxiety level for the benefit of the treatment and patients. There are various methods to be used in order to decrease the anxiety caused by stress in a dental appointment.

The available methods of conscious sedation in dentistry include inhalation sedation (nitrous oxide), conscious intravenous sedation and oral sedation, which may lead to a range of undesirable side effects and risks, including increases the cost of treatment. Therefore, other alternative methods such as hypnosis, relaxation, distraction, guided imagery technique, and music therapy are preferred due to low side effect and low cost. The music therapy was effective in decreasing surgical stress, which sedatives were needed less often in patients who were treated with music during surgery (Lepage, Drolet, Girard, Grenier, & DeGagne, 2001). Moreover, in terms of saliva cortisol, it was found that there were significant differences between the experimental group and the control group in a study of physiologic parameter in