



Effectiveness of Music Interventions in Anxious Patients during Dental Procedures: A Review

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Abstract:

It's extremely delicate to deliver in dental treatment to largely anxious cases. thus there's an critical need to find measures to reduce the anxiety situations without causing any side effects. hence this study was conducted to estimate the effect of music on the anxiety position of the cases who were witnessing dental treatment.

Introduction:

Dental anxiety can be defined as a state of nervousness, unease, or apprehension about commodity with an uncertain outgrowth, with regard to a dental procedure. holding on for a medical procedure can put out significant increase in anxiety situations.¹ Factors that substantially spark the anxiety are pain, bleeding, injections, rotary noise, smell of the drugs, commotion in the waiting room or case's other dental experience. Cases with dental anxiety will show some turndown symptoms during treatment. These turndown symptoms of anxiety, can be classified into physiological symptoms, behavioral symptoms, cognitive symptoms, and emotional symptoms. Among these symptoms, the physiological symptoms, similar as dyspnea, hyperventilation, tachycardia, hypertension, increased respiration rate, nausea, and puking, are the most implicit symptoms that might attribute to the failure of the treatment.¹ This is generally encountered dental problem by utmost interpreters, where cases avoid visiting the dentist, leading to deterioration of oral health. It can also compromise the standard of treatment as dentist is also stressed by the case's anxiety situations. Studies have shown that one- sixth of the cases suffer with dental anxiety. Indeed, in the environment of minor medical interventions or medical routine check- ups similar as a dental hygiene treatment, situations of anxiety can be markedly elevated. There are many treatment options to effectively reduce anxiety, they include pharmacological ways like the use of benzodiazepines and antidepressants, which may have side goods and downsides, similar as doziness, hemodynamic insecurity, agitation and hyperactivity. Hence to avoid the side goods of the colorful medicines, cases conclude for conservative approaches like music remedy which is an effective, non- invasive and cost-effective intervention, which decreases anxiety and thus, optimizes the outgrowth of a medical intervention.² Music affects the brain and this process is very complex. It contains rhythm, pitches, instruments and melodious voice and all of these is processed by different areas of the brain. All the physical reactions start processing as soon as the music therapy starts and thus it helps the patients with anxiety conditions.²

Music therapy soothes the brain and makes it calm, this helps in treating the patient and helps patients to relax. It also helps by distracting patients from clinical instruments sound and procedures. Music therapy reduces the stress of the brain and so thus the body. Musical therapy is of 2 types namely: (i) active music therapy - Active music therapy consists of **musical improvisation between patient and therapist by singing or by playing different musical instruments**, according to the vital functions, the neurological conditions and the motor abilities of the patients.³

(ii) Passive music therapy - the music therapist provides music to promote relaxation and a calm meditative state as the patient listens. (Sessions **that use music-assisted relaxation or receptive listening**)³

The purpose of music therapy is to reduce the stress and the anxiety. Patients who are undergoing the dental treatments for the first time are seen to be in more fear and anxiety. Also, they are curious about the treatment procedure, which increases their nervousness even more. To reduce all of this music therapy works. When a person starts to listen the music, the sound affects them, and they start judging the sound. Whatever the sound is sad, thoughtful or happy, brings influence to the intuitions and other feelings and even affects the thoughts and emotions of the person. And this helps in distracting the patient during procedure by reducing the anxiety of the patient.² Music therapy relaxes the brain and stops the overthinking function of the brain. This helps in treating the patients well and calmly without any disturbance. The main aim of review was to evaluate the association between the music interventions and reduced anxiety level during dental procedures among anxious patients.⁴

Material and methodology:

The present literature search was done inclusive and exclusive on online and offline gathered information. The keywords used for the search were "dental anxiety", "music interventions", "and effectiveness of music interventions on dental anxiety", "ease of procedure after listening to music". In online, Google bases, EBSCO, and all PUBMED journals in which full articles were available were selected, and in articles where only abstracts were there, were excluded. The only literature from Google bases in English languages were selected. For offline different articles, textbooks, studies, study materials were chosen. All the articles were thoroughly read by all the authors and discussed. The main summary was noted down.

Dental Anxiety as a Dental Public health Problem:

Dental anxiety and fear are recognized in numerous countries as one of the major public health problems, as it deprives cooperation and increases dental treatment failures. ¹ This is proven by numerous studies around the world which set up frequency between 3 and 43. ² Previous studies have also found that young age and female population are mainly associated with dental anxiety and fear.

Dental anxiety and fear were associated with an advanced frequency of toothache, tooth decay and extraction. This type of pain may increase and cause reduced prognosis and also worsens the oral and systemic health. Overtime this effect will affect in more and more serious oral health problems, making treatment more complicated. This is a reinforcement that causes patients to have further anxiety and fear.

Anxiety is both a physiological and cerebral structure. The two interact with each other, and their goods can be measured by Central nervous system exertion, heart rate and respiration among others. ⁹ Other measures that are affected through anxiety and fear are increased blood pressure, heart rate and drop in oxygen saturation. ³

GABA (gamma- amino butyric acid receptor) is an important target for hypnotic sedative components in humans that can cause relaxation and drop anxiety situations. The music remedy has achieved great success in reducing anxiety along with dropped systolic blood pressure and increased oxygen saturation values. ³

Type of music used in the therapy plays a key role, as many studies have proven significant results having patients selecting their choice of music. There are many studies which has proven that the use of video and audio or music alone have reduced the stress better. Therefore, it is important to consider music preferences of the patients when giving music therapy. ⁴

The main goal of reducing anxieties and fears is to increase patient's cooperation during dental services, which is critical for the success of treatment. Methods for managing anxiety and fear in dentistry are both pharmacological and non-pharmacological. Pharmacological methods of suppressing anxiety and fear in dental services are inhalation, opiate (nitrous oxide), and intravenous and oral analgesics. This opiate has some unwanted side-effects and pitfalls, such as languor, rash, dizziness, nausea, headache or confusion. ⁴ It also increases the cost of the treatment; thus, patients appreciate a non-drug approach to operation I.e. music therapy.

Music therapy contributes to the following factors:

It shows modulation of the following: -

- Attention: music helps in grabbing attention and distracts from stimuli which decreases the anxiety and fear. ⁵
- Emotion: music helps in maintenance, termination and modulation of emotion. ⁵
- Cognition: music is related to memory process. ⁵
- Behavior: music helps in reshaping behavior and conditions it, like movement patterns, etc. ⁵
- Communication: music is a very useful means of communication in depressed and anxious patients ⁵

Some noises, like traffic sound/dogs barking, can interrupt rest/concentration, while other sounds can help you relax clear your mind, promote better sleep. Examples of such sounds are:

- White noise: [equal power at all frequencies i.e. flat power spectrum] it is used for sound masking, managing tinnitus, increasing concentration and relaxation. ⁶
- Pink noise: [linear power on a logarithmic scale]it is used for falling asleep faster, blocking disruptive noises and improving memory. ⁶
- Brown noise: [power decreases as the frequency increases] also known as red noise, which is used for relaxation, as a sleep aid, noise blocking and improves focus. ⁶

Musical therapy and other music-based interventions (such as music medicine,etc.) is particularly effective in improving mood and affect regulation, communication, social skills, and quality of life; music medicine approaches are successfully applied in medical settings to alleviate pain, anxiety, and stress. ⁴

Music based interventions in health care are:

- Music medicine- listening to the prerecorded music for health promoting goals: provided by healthcare professional⁷
- Music therapy: provided by special therapists⁷
- Other music-based interventions / different noises: by healthcare professional⁷

Today music therapy is used in many patients undergoing medical and therapeutic procedures, such as in patients undergoing biopsy for cancer screening,⁸ and in reducing anxiety while waiting for dental services.⁸ Having patients choose music according to their preferences has a beneficial effect on reducing anxiety and fear.⁷ A study on anxiety and fear of dental services found that smell of the dental lab and noise of dental instruments had a strong effect.⁸ In children music ignites all areas of child development and skills thus music has beneficial effect in building close relationships and improving fear and anxiety levels by distracting the child, which ultimately ease the dental procedure. In adults' music has long been associated with brightening or regulating emotions and stress, so the music played in the waiting room, in specific treatment rooms, and even through headphones during procedures can soothe anxious patients, reduce stress from longer procedures and even improve the healing process by reducing overall pain.⁹ Musical Therapy is practical, effective, cost-effective and applicable system of dental treatment in patients who have anxiety and fear.² As there are limited long-term studies for the use of music during dental treatment and reduction of anxiety, more studies should be planned and conducted.¹⁰ After studying and reviewing all the study accoutrements, papers, checklists, data, etc it's true that in clinical practice musical therapy has an intertwined approach to reducing dental anxiety and fear in patients.

Conclusion:

As this review, it is proven that the music seems to be a psychological and spiritual way to calm patients down. Music therapy has an anxiolytic effect on stressful dental treatments and music interventions have ultimately reduced the levels of anxiety in patients.¹ It is an effective, non-pharmacological method,² used in clinical procedures to help cope up with the stressful situations occurring in all the age groups.

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