



REVIEW ARTICLE

Dental Science

MUSIC THERAPY IN DENTISTRY: ITS APPLICATION IN MANAGEMENT OF ANXIOUS DENTAL PATIENTS

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ABSTRACT

Dental anxiety is one of the most significant issues in children as well as adults. Anxious patients hesitate to visit the dental clinic & neglect dental care. Identification & eradication of dental stress is essential in providing quality treatment to such patients. Music plays a therapeutic role by providing distraction & promoting a relaxing environment with elimination of anxiety, stress & fear. This article tells how music & dentistry go hand in hand in combating dental anxiety through application of music therapy that imparts anxiolytic effects and is a non-invasive, inexpensive & painless method.

Introduction

“ One good thing about music, when it hits you, you feel no pain.”- Bob Marley.

Music is a piece of art that heals all kinds of pain in this world. It purifies our soul & washes away the sufferings of everyday life. Music helps connecting people & meets the physical, psychological & social well being of people. It can lead people to greater health & happiness. Over the years, music therapy has long been used in the medical field & proved to be very effective in reducing anxiety & stress. Music can cure things medication never will. The use of sedatives, hypnotics, tranquilizers & other drugs is said to have innumerable adverse effects to the body. Whereas, music therapy on the other hand is a natural method that provides anxiolytic effects with no such adverse reactions. Application of music therapy has been done in all branches of the medical science, including dentistry & is proved to be beneficial since it has the ability to distract & divert the patients mind from the painful stimuli, promotes feelings of comfort, increases relaxation, eliminates unpleasant sounds & creates a positive atmosphere.⁽¹⁾

Good music has been shown to have a powerful impact on the human brain through the production of alpha & theta waves. Alpha waves induce enhanced creativity while theta waves are associated with deep relaxation, concentration & easing anxiety. Music also serve as a regular stimulus for most people. Nowadays, music system must be installed in every dental clinic not only as a therapeutic modality for managing anxious dental patients, but also to soothe the mind of the dentist.

Dental Anxiety

Dental anxiety is the most significant cause of hesitation to visit the dental clinic & ignoring dental care. Studies have shown that one in six adults experience some form of dental anxiety & the prevalence of dental anxiety in children ranges from 5.7% to 19.5%.⁽²⁾ Anxiety can be defined as “a psychological state comprising of feelings of tension, extreme restlessness, nervousness, apprehension & worry, with stimulation of the autonomic nervous system.”⁽³⁾ Dental anxiety is an unusual & atypical fear of visiting the dentist for preventive oral care & severe phobia over dental treatment and procedures. It is a remarkable problem & is considered as a hindrance in providing quality dental care by the dentists.

Anxious patients lacks cooperation, require prolonged chair time & routinely cancel appointments that makes difficulty for the dental practitioner in achieving the success of the dental treatment. Studies have shown that sex and age are principal factors related with dental anxiety.⁽⁴⁾ Higher incidence of dental anxiety is found in females compared to males. Studies report that females between 30 to 45years of age have a higher prevalence of dentally anxious.⁽⁵⁾ Hmud et al concluded that the prevalence of dental

anxiety decreases with age, however some studies showed no difference in dental anxiety with age.

There are several factors that causes dental anxiety in the clinic. Few of these factors are-

- Past dental history with an unpleasant experience.
- Dental pain: it is the most important cause of dental anxiety. Anxious patients are more quick to respond to pain.
- Fear of pain & possibility of getting hurt.
- Oral bleedings.
- Fear of intra-oral injections: visual perception & sensation of local anaesthetic needle.
- Noise of the rotary instruments: unpleasant anxiety-provoking loud sounds of the dental drills.
- Discomfort in opening mouth.
- Discomfort of sitting in the dental chair.
- Fear of allergic reaction.
- Lack of knowledge regarding the procedures to be performed by the dentist.
- Fear of the unknown (the dentist).
- Fear from peoples (family/friends) who reported with dreadful dental treatment.

There may be harmful consequences of dental anxiety. Studies have shown that dental anxiety is associated with problems in behaviour management in children.⁽⁶⁾ Dental anxious patients also report with increased levels of caries. It has also been found that patient with dental anxiety have a poorer oral health & aesthetics, with an increased incidence of decayed & missing teeth.⁽⁷⁾ Dental anxiety is a serious social health concern. Research proves that avoiding & ignoring dental appointments leads to significant deterioration of oral health requiring more invasive dental procedures that will further increase the anxiety of the patient.

Music Therapy

Music is an art of arrangement of sounds in time to bring out a constant blend of melody and harmony & include typical elements such as pitch, rhythm, dynamics & sound properties of tone & resonance incorporated in a structured manner. There are different musical styles, types & genres including classical, folk, contemporary, religious, etc. Implementation of music for eliminating or minimizing anxiety is known as **audio-analgesia** or **audio-anxiolysis**.⁽⁸⁾ Music with property of bringing out relaxation is known as anxiolytic music & is characterized by repetitive rhythms, slow tempo, foreseeable dynamics & persistent harmony.

As stated by Munro & Mount, music therapy is defined as the controlled application of music including its elements that effect the physiological, psychological & emotional status of an individual in the course of treatment of a disease or illness.⁽⁹⁾ Music therapy is

of two types- active & passive. Active music therapy is the use of music by professional music therapist or trained musicians to achieve good health & welfare. They work in clinics, hospitals, schools or rehabilitation centers & uses a wide range of musical techniques like composing music, singing & playing various musical instruments. Passive music therapy also known as receptive music therapy on the other hand, is the passive listening to pre-recorded music offered by physicians, doctors & dentists with no participation of music therapist.

Research bears out that active music therapy in medical patients is significantly more fruitful than passive music listening.⁽¹⁰⁾ This is due to the fact that music therapists individualise their music creations based on the specific needs of the patients. They actively take part in composing & music making & offer a systematic therapeutic protocol that includes diagnosis, assessment, evaluation & treatment through music. Music therapy can benefit people of any age despite their musical skill or musical background. Cook in her studies mentioned that dental professionals were one of the major proponents of music, applying it for pain control & relaxation in their patients.⁽¹¹⁾

Music therapy offers great advantages over other therapies, since it:

- Is a non-invasive & painless method.
- Is inexpensive.
- Has no adverse effects to the body (unlike drug therapy).
- Provides anxiolytic & analgesic effects.
- Is a patient friendly approach.

Effects of Music

Music has several therapeutic potentials and its application is very effective for the management of anxious dental patients in the dental office, because of the following reasons:

- Intervention of music reduces stress, anxiety & depression of the patient.
- Music help relieve pain and decreases muscle tension.
- Increases immunity.
- Stimulates emotions, renews memories, motivates & soothes the mind of the patient.
- Induces relaxation & comfort in the dental chair.
- Improves mood of the patient.
- Eliminates fear & boosts self confidence.
- Decreases blood pressure.
- Decreases heart rate.
- Decreases respiratory rate.
- Promotes distraction of the patient's attention from painful stimuli.
- Eliminates unpleasant sounds (noises of the dental drills).
- Creates a positive atmosphere.
- Feelings of familiarity in a strange environment.
- Help improve communication (with the dentist).

It is crucial to note that for effective musical intervention in the clinic, the type of music, patient's choice of music & the volume of music must be taken into consideration. Listening to familiar & favourite music or songs can help reduce anxiety of the patient more quickly & effectively. It is believed that music block the pain pathways & receptors to the brain as a result of which the perception of pain get reduced which promotes analgesic effect.⁽¹²⁾ Playing music prior to the start of a procedure so as to prevent anxiety is known as **white noise effect**.⁽¹³⁾ It masks the unpleasant sounds & promotes relaxation where music acts as a stimulus & influence pain elimination.

Parkin in his studies conducted the effect of music on minimizing levels of anxiety among children by playing 5 minute amusement music before the dental treatment.⁽¹⁴⁾ The students who listened to the music reported with decreased levels of excreted cortisol, whereas students who didn't listened to the music reported remarkably increased levels of cortisol. Music therapy not only reduce serum cortisol level but also stimulate increased level of immunoglobulin production. Several research has concluded that music reduces the neuroendocrine activity & sympathetic nervous system causing decreased heart & respiratory rate as well as decreased blood pressure. A survey conducted by Tran et al in

2010 among dentists & patients on preferred anxiolytic interventions during dental treatment confirmed that 89% of both dentists & patients prefer listening to music during dental treatment.⁽¹⁵⁾

The significance of the sense of hearing is most important than any other senses since it is the first functional sense in the life of human beings & is developed prior to the sense of sight in embryonic stage. Hence, sound in the form of music is a great impulse which influences the human nervous system & stimulate the brain waves that alter the physiological & psychological state of the human mind.⁽¹⁶⁾ Music reaches easily to every part of the brain & activates the cellular connections. Rhythm, one of the key elements in music can change neural activity in the brain on the lateral temporal lobe. Studies have shown that music with distinct rhythm encourage the brain waves to acquire similar rhythm. With the rhythm getting faster, the breathing & pulse get increased as well, which boosts concentration & self confidence.

Good & effective music is recommended to be played in the dental clinic to prevent anxiety. Patients age, sex, culture, mood, attitudes & personal preferences determines the choice of music. However, excessive stimulation of loud sounds should be avoided since it might even aggravate pain, on the other hand excessive soft music might increase anxiety as well. Soothing music that makes the patient comfortable & relaxed in the dental chair with no signs of anxiety, fear or stress should be given priority. If possible, instrumental music should be preferred over other sounds since it promotes deeper state of relaxation in the subconsciousness of the anxious patient.

Conclusion

In an anxious patient in the dental office, when the pain penetrates, the music resonates. Music plays an amazing role in the management of anxious dental patients through its anxiolytic properties. A positive environment in the dental clinic with no stress & anxiety would help to bring out a beautiful dentist-patient relationship & a successful treatment. Therefore application of music therapy in the dental clinic must be followed in everyday dental practice. Music is cheap & does not require huge investments but still it is the best medicine in this world & that's the reason they say that "Music is Life."

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