

Musictherapy In Dental Medicine

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Abstract

Stomatological anxiety is the most common cause of hesitation on the visit to the dentist office. Factors that increases the anxiety, such as pain, gingival bleeding, fear of injections, noise rotary or a possible allergic accident, impose therapeutic procedures that reduce the stress and general discomfort. This has led to different methods and therapeutic procedures (use of sedatives, tranquilizers) and psychotherapeutical (hypnosis, biofeedback, cognitive-behavioral techniques) aimed at obtaining a relaxing climate, easier to accept. One of the methods demonstrated as being very effective, widely applicable, is the music therapy, which can combat the anxiety and also to have an analgesic effect, by modalities of action at a psychological level, determined by intracerebral release of endorphins, the effect of distraction from painful and anxiogenic stimuli, feeling of familiarity and comfort in the dental office, being recommended songs with repetitive rhythms, dynamics predictable, harmonic consonance, baroque or classical style, meditative, relaxing or favorite songs of the patient.

Keywords: anxiety, pain, music therapy, comfort

In medical practice is well known the reluctance of the patients with various dental diseases to show up on time at a specialty consultation and, of course, the application of dental procedures with diagnostic and therapeutic character.

Dental anxiety

There are even statistics that rate this veritable "absenteeism" at approx 4 million patients in the US, with negative consequences on dental health.

The dentists, in agreement with psychologists called upon for help have come to quasi-unanimous conclusion that at the basis for this reluctance towards the treatment of dental disease is the so-called dental anxiety, which can go up to a real phobia towards the cabinet, dental chairs and even towards the dentist. The frequency of this special category of anxiety symptoms varies within 5-15% for adults to 6-20% for children.

In most cases, this dental anxiety is manifested through restlessness, extreme emotional tension, its emphasis at placing the patient in the dental chair and becomes paroxysmal when are applied various dental procedures. The effects of this anxiety - associated with and exacerbated by the most frequent symptom in dentistry, dental pain - are represented in the plane of the dental care, the hindering the cooperation with the dentist, extension of the duration its medical benefits (on average about 20 %) and subsequent trends postponing the presentation at the dental office.

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Trying to explain the direct causes of dental anxiety occurrence, various authors have concluded that outside previous experience psychological traumatizing - sometimes even in childhood - in connection with first visit to the dentist or informational contagion to other people (family, acquaintances) there are several major factors as sources of this form of anxiety:

- **Dental pain** is the most important of them, which we consider - whether direct source to achieve gingival mucosa, dental nerves, etc.- or as conditioned reflexes initiator stimulus for other stimuli: visual, olfactory, auditory, and so on of the ambience from dental office
- **The discomfort** in varied nature (eg. the stay tense and mouth wide open in the dental chair)
- **Ringings** exasperating of dental drills
- **Dental bleedings**
- **The fear of the possibility** (extremely rare) **to be hurt**
- **Anesthetic injections intragingivale**
- **The fear of the possibility of an allergic accident** to those with a history of intolerance to NSAIDs analgesics.

Lahmann et al.(1) analyzing data in the literature about the dental anxiety, shows its higher incidence in women and the declining trend with age. Also occurs naturally that the biggest anxious represents the largest contingent of patients with dental anxiety.

Knowing already listed on foreign sources of dental anxiety, but also being able clinic and sometimes experimental (psychological testing), dentists have sought to diminish this syndrome which manifests not only at a psychological level (from a mild anxiety to feeling helplessness and loss of control to a paralyzing fear) but also the numerous correlated somatic anxiety plan (pallor, tachycardia, sweating, etc.).

From protection with sedatives and tranquilizers (most often) and - less often - through procedures psychotherapeutical more demanding such as bio-feedback, hypnosis and cognitive-behavioral psychotherapy (authors cited by Lahmann et al.), was reached to using some methods with possibilities of broad application and relatively easy, aimed at creating a climate of relaxation that would cancel out direct negative stimuli (pain, noise) and indirect (conditional) that generate anxiety.

The relaxation was too searched by distracting attention to patient from noxious stimuli mentioned by other stimuli able to induce pleasant sensations to patient, by recourse to aid some psychotherapies for relaxation able to reduce the stress caused by dental office environments and pains (plus general discomfort) caused by various dental procedures.

Of these methods, the practice of recent years has retained the application of some somatosensory psychological therapies (such as "brief relaxation"). This kind of therapies are in fact used in a number of psychosomatic diseases such as asthma or cardiac somatoform disorders too.

The music - analgesic and anxiolytic in dental practice

But the best known and currently used therapy is receptive music therapy, which we will present at length in this chapter. Appealed on the help of music as tool to combat the pain from various branches of medicine - submitted in this book - is based on the antialgic effect of music, based on intracerebral issuing of endorphins and the distraction effect from painful stimuli, based on the "gate theory", as described in detail other rumanian works.

A number of authors emphasize this effect of distraction to positive emotional states and promote a psychological comfort to patients.

Referring to the antialgic effect of music, coupled with its anxiolytic effect, is known the study conducted by Spintge and Droh in 1985(2), who used **a music called anxiolytic** on patients treated through uterine curettage, at which the alleviate pain by listening this music exceeded the usual painkillers effect (applied to a lot symmetric, of control).

Combating dental anxiety through music appeals to the 3 modalities of action of it in the psychological plan arising of a study conducted by Mc Caffry. and Good (apud. 3) and consisting of:

- A feeling of familiarity in a foreign environment
- A feeling of comfort in an uncomfortable situation
- Distracting attention from pain and fear

Referring to **the type of music used as "audio-analgesia" or "audio-anxiolytic"** is recommended, inter alia: repetitive rhythms, predictable dynamics, harmonic consonance, absence of percussion instruments, baroque or classical style (with low tonality of the chords) but also some works with meditative, relaxing invoice, by Debussy or even Vanghelis(4).

The vast majority of authors uses songs with above characteristics **belonging to the classical repertoire or favorite music**, the latter being selected by the patient even before applying the treatment.

Over the last few years have been introduced in the practice of some dentists CDs (such as one called **"Dental Anxiety Cure"**, available on the Internet too), which favor a music specifically created in order to circulate some subliminal messages in the subconsciousness of patients, able to create a state of comfort and safety when they are in the dental chair.

Practical modalities for establishing the algo- anxiolytics musictherapy on dentistry patients

Based on analysis of data from the mentioned studies, as well as some personal considerations, we will try to establish a psychotherapeutical conduct, focuses on use of the music and applies especially to the usual treatments in dentistry, applied on the dental chairs.

The methods used in buco - maxillofacial - facial surgery are similar, for the most part,with those used within musssotherapy applied to the surgical patients, about there is a separate chapter of the book(5).

It is to be mentioned that the application of the musictherapy in patients with dental disease can be coupled with the realization of scientific research to evaluate the effectiveness of this method and find answers to a number of issues that are still controversial (eg. the selection of musical pieces, associating other therapeutical procedures , etc.).

1. The preliminary step of applying the musictherapy in the dental office

Among the instruments used for the quantification the level of anxiety and pain intensity, we could choose Spielberger's psychological tests (STA.I. -S for anxiety disorders with a degree of potential reversibility and STAI.-T that quantifies the tendency, the stability level of the anxiety , defining the basal anxiety of the subject) and visual analog scales (VAS) for pain intensity. More recently (2010), Kyoung Kim et.al(6) have applied such a Dental Anxiety Scale along with the visual analogue scales.

Regarding the specific questionnaires for dental anxiety, used in patients who were undergoing to effects of musictherapy during dental treatment, seem very useful the 3 questionnaires to which Olszewska et al.(apud.7) have appointed in a study of 200 patients (100 probing group and 100 control group).

The first questionnaire was the one elaborated by Corah (apud. 8) called Corah's Dental Anxiety Scale (CDAS) that analyzes the anxiety state (easy, medium or hard) registered in four moments: on the day before dentist appointments (*appointment tomorrow*), in the waiting room, in the dental chair immediately before starting treatment and before applying the dental drill. The second questionnaire, "Dentist Rating of patients behavior" is supplemented by the doctor and tests "patient treatability" assessed on three levels, the lower of which corresponds to the situation of refusal of the treatment, and the upper to the unwind completely of the patient.

The third questionnaire "Patient Rating" is completed by the patient whose answers to the question "How can you describe your tension during the dental treatment from today?" are encoded in three levels by 2 steps, from 1- "calm and relaxed" until 7 - "extremely tense and angry". In this preliminary stage we will use questionnaire for the musical preferences for, both for subjects used in research as well as for those who were treated routinely to use the responses in order to establish the musical preferences.

Although this criterion of favorite music is used by some researchers, we chose the classical music, in agreement with other authors and a recent romanian study (9), that outlined the higher antialgic effect of classical music toward the favorite music.

2. The audition of the musical pieces

It shall be made throughout the dental therapy session and broadcast mode of the music is usually from the headset (with the possibility of adjusting the loudness). The dentist begins work / dental procedures and occasionally asks the patient if he wishes to change the music.

The musical audition can be associated with other relaxing therapies, of which we consider as of interest **the aromatherapy** (easy to apply), and especially the so-called **Brief Relaxation Method**, applied by Lahmann et al(1). The method consists in relaxation and movement of the temporomandibular articulations, fingers, shoulders, the cervical region, the lumbar spine etc. in a slow alternation (contraction - relaxation) and patients focusing attention on sensations coming from muscle proprioceptors involved in this game of muscular tensions.

3. The evaluation of the musictherapy effects on dental patient

Currently, the patient is asked about the pain felt during the dental procedures and the anxiety that has produced the stay in the medical cabinet compared to other times when he not benefited from music listening(10). In the case of studies concerning the effects of the music on the anxiety and dental pain during dental procedures are compared the initial and the final scores - obtained on psychological questionnaires and on Visual Analogue Scales and applied to the patients in question - with the scores of the same questionnaires and visual analogue scale of patients belonging to a control group, which have been treated in the usual manner, without music.

Final considerations on the value of musictherapy in dental practice

Using the musictherapy in practice of dental medicine in order to reduce the anxiety and pain on patients treated in dental office revealed a few aspects concerning the effectiveness of this method. The relationship in vicious circle between pain and anxiety has suggested the focus of attention of the therapist on the decrease, primarily, of anxiety, because it precedes - from the morning of the dental treatment, of the time spent in the waiting room and, especially, at the time of installation in the dental chair - the appearance of pain (legitimate!), caused by the dental procedures.

On the other side, **anxiolytic and analgesic medication** may have favorable effects on conjugated on the anxiety but - quite frequent - is contraindicated because its adverse reactions: excessive sedation with endangerment of driving and reduction in yield - in the case of anxiolytic medication - and allergic reactions on the analgesic medication.

For these reasons, and because of reduced costs as but also because of its anxiolytic and analgesic effects - valued by some authors mentioned above as being superior to the analgesic medication - using music in the dentist's routine practice appears to be fully justified.

By repeating a series of considerations from the literature already mentioned, we can synthesize the therapeutic effects in dental practice as a triad formula:

- Anxiolytic / relaxing effect
- Distraction (often partial) of the patient's attention from dental procedures which creates discomfort
- Direct antialgic effect (carried out especially by endorphins).

Referring to the overall assessment of the authors mentioned about therapeutic value of the musictherapy in dental practice, are due the following information:

1. The effectiveness of this method is, in most of the studies, favorable, in variations, ranging from a simple euphoric effect exclusively or placebos to equal to or upper effects of other psychotherapeutic methods although association of the musictherapy with other relaxation therapies (eg. cognitive - behavioral therapy).
2. The most visible effects of musictherapy in dental medicine are visible on the biggest anxious and on the female patients (without the existence of distinctions in age until senescence, when dental anxiety level decreases - in fact, dental practices seems to be less painful).
3. The type of music used must be prescribed in accordance with two criteria:
 - the atmosphere of the musical pieces must be clear, meditative, relaxing, fact that is compatible with a slower tempo (11);
 - the style of the music can be classic or the favorite music, noting that, in the case of classical music, there is the advantage of using some prior registration, applied without demarches involved, in the case of favorite music, by selecting a type of *pre-recorded music*.

At the same time, we are absolutely agree with Iwanaga's opinion who claims that the effects of musictherapy depends largely by the stimulant or sedative type of music than the style of it, including the case of favorite music.

Essentially, the algo-anxiolytic musictherapy, used in the dental office, contributes, as has been demonstrated by the study performed by Olszewska (apud. 7), to reduce the anxiety, a better cooperation of the patient with the doctor, and at a greater effectiveness of treatment.

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