

Fear and anxiety in Dental Practice: A Review

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Abstract

Fear is expressed as an unpleasant emotion caused by threat of danger, pain and harm. Anxiety is an emotional state of a person such as doubt, mental-conflict, and disappointment. Phobia is persistent, unrealistic and intense fear of a specific stimulus, leading to absolute avoidance of the perceived danger. Corah's Dental Anxiety Scale (CDAS), Modified Dental Anxiety Scale (MDAS), and Dental Fear Survey (DFS) are the tools to assess fear and anxiety. Dental fear and anxiety can be managed by change in dental set up and office environment, improving communication skill of practitioner and trust building among patients. Other

approaches like behaviour-management techniques e.g., technique of relaxation, attention distraction, hypnotherapy, positive reinforcement, systematic desensitization and pharmacological management e.g., general anaesthesia and conscious sedation are also used to prevent and treat dental fear and anxiety in dental practice.

Key Words: Communication skills, Dental Fear, Dental Anxiety, Hypnotherapy

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Fear Anxiety and Phobia

Fear is expressed as an unpleasant emotion caused by threat of danger, pain and harm. Fear is a primary emotion for survival against danger, which is acquired after birth during different steps of life.¹ It is one of the basic defence mechanisms and its purpose is to prepare the body to face the possible observable harm to promote survival. In the history, those who feared the right things survived to pass on their genes. Anxiety is referred to emotional state of a person such as doubt, mental-conflict, and disappointment. All of us experience it in our daily life, such as during exams, in the workplace, while making important life decisions, under pressure and in several other circumstances. It is very closely related to fear but has certain differences. Generally, fear is a reaction to specific, observable danger which is mentioned earlier while anxiety is a diffuse, unfocused, objectless, future-oriented fear.² Fear always has a

known and well understood source unlike anxiety. Fear and anxiety can occur at a time and the symptoms may overlap occasionally. Any dysfunction in fear processing or excessive fear can outweigh the danger or the possible harm.³ This phenomenon is termed as phobia. Phobia is special type of fear which can be defined as persistent, unrealistic and intense fear of a specific stimulus, leading to absolute avoidance of the perceived danger.⁴

Concept of Dental Fear and Anxiety (DFA)

Dental fear can be defined as an emotional reaction or emotional outburst to one or more specific threatening stimuli when a person faces a dental disease or treatment⁵ It includes fear of dental procedures, fear dental environment or clinical settings, fear of dental instruments and even fear of the dentist as a person can also be included⁶. On the other hand, dental anxiety is indicative of a state that is full of suspicion and apprehension especially imagining that, something very bad is going to be happened in relation to treatment and it is most of the time accompanied by a sense of losing self-control.⁵

Dental phobia sometimes is expressed as a separate concept diagnosis of which is little bit tricky as it cannot be diagnosed solely from the presence of dental fear or anxiety. The patient's history of dental experiences must be taken into consideration.⁷ If a patient experiences a very high level of dental fear or anxiety together with a history of avoiding a visit to the dentist totally, it can be diagnosed as dental phobia because from the above discussion we learned that a phobic person tends to

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completely avoid of the perceived danger. Making this distinction is necessary as it is easier to manage a patient with dental fear and anxiety than a patient with dental phobia.⁷

Measurement of Dental Fear and Anxiety

There are several instruments available for assessing anxious and phobic patients.^{8,9} The Corah's Dental Anxiety Scale (CDAS), Modified Dental Anxiety Scale (MDAS), and Dental Fear Survey (DFS) are the most commonly used, and are reliable and valid in different aspects.^{10,11}

The widely used CDAS consists of four questions about different dental situations with five possible answers for a patient. Each answer has a score ranging from 1-5, so the range of possible scores becomes 4-20. The total score tells the dentist how anxious a patient may be. A score between 9 and 12 indicates moderate anxiety that can likely be managed. 13 to 14 indicates high anxiety. The level 15-20 indicates that the patient has severe anxiety, may be even a phobia.¹² The Modified Dental Anxiety Scale (MDAS) consists of 5 questions each with a 5-category rating scale, ranging from 'not anxious' to 'extremely anxious'. The MDAS has an extra question about the respondent's anxiety to a local anaesthetic injection. The answers are scored from 1 to 5. The possible score for the scale ranges from a minimum of 5 to a maximum of 25. 19 is the cut-off point for high dental fear.¹³ DFS consists of 20 items, 5-point scales, comprising three dimensions: avoidance, physiological fear reactions, and fears of specific dental stimuli or situations and the possible score ranges from a minimum of 20 to a maximum of 100. 60 or more than 60 is the cut-off point for high dental fear.^{14,15}

The consequences of dental fear and anxiety

People who are suffering from DFA have a tendency to avoid a visit to the dentist neglecting their oral health, which worsens the situation to a great extent and leads to advancement of diseases. Ultimately all result in a forceful visit to the doctor. DFA can evoke physical, emotional, cognitive and behavioural responses. This is a frequently faced problem in dental clinics.

DFA is closely related to painful stimulus and increased pain perception, thus these patients experience more pain than an average person which also lasts longer than normal; they also have a tendency to exaggerate their memory of painful dental treatments.⁴ It is

observed that individuals with high fear pay fewer dental visits and have more decayed and missing teeth.¹⁶ Study found associations between dental fear and less frequent dental visits and then increased visits for a more severe problem and ultimately resulting in increased social and functional impairment.¹⁷

Treatment of patient with DFA is very stressful for both the dentist and the patient.¹⁸ Treatments become more time-consuming and costly.¹⁹ In a study conducted in Denmark it was found that nearly 60% perceived dentistry as more stressful than other profession and one the main reasons behind that was "dealing patient with dental fear and anxiety".¹⁸ So, dental fear always affects clinician and patient.

Aetiology of dental fear and anxiety

Previous Traumatic Experiences: It has been reported that individuals with high levels of dental fear and anxiety most often had experienced a traumatic dental procedure in the past. It is also referred as 'conditioning via aversive treatment experience'.²⁰ When a traumatic episode occurs in childhood it has a lasting effect. The fear of dental procedure can linger with them even after reaching adulthood. In a study by locker et al. It was found that half of those who are suffering from DFA developed their fear or anxiety in their childhood.²¹ Ten Berge et al. examined how children acquire dental fear, specifically regarding invasive treatment experiences. Their study showed that there was a significant relationship between dental fear and anxiety, and the number of extractions a child had experienced.²² This suggested that one of the causes of dental fear & anxiety was invasive dental treatment. Another finding by them was that children with a longer history of non-invasive treatment experiences reported low levels of dental fear.²² It suggests that the longer young children continue to have a positive experience while visiting the dentist the less likely they are to develop dentally fear. Past traumatic experiences such as sexual assault and domestic violence can also trigger DFA. Sexual assault victims reported high dental anxiety compared to others.^{23,24,25} Findings from these studies suggests that it is not only previous, negative dental experiences that can cause DFA but also other traumatic experiences can play a big role.

Indirect Vicarious Experiences: Vicarious learning can be defined as indirect learning from role models, such

as family members or friends with personal negative experiences. Parental teasing and hearing stories from their friends about negative dental experiences play a big role in the development of dental fear and anxiety. Sometimes fear may be displayed by the close ones and acquired by the child without being aware of it.²⁶ They can also learn from external sources such as the media. Negative connotations advertised by media can have an impact seriously.

A significant relationship found between child and parental dental fear in a systematic review and meta-analysis of 43 experimental studies about parental and child dental fear.²⁷ Study found that fathers play a big role in transferring dental fear experience on child and mother.²⁸ The study of Locker et al. showed that 56% of the respondents suffering from DFA had a parent or sibling who also suffered from DFA.²¹ Media also plays role in the development of DFA. Humphris and King found that individuals with high DFA have heard about or seen frightening stories about dental treatment in media and they were almost two and a half times more likely to experience this than the rest of the respondents.²³

Management of Dental Fear and Anxiety

Change in dental set up and office environment with management:

The environment of a dental office can play a crucial role in initiating dental fear and anxiety. Some patients associate certain sights, sounds, smells and sensations of the dental environment with feelings of anxiety and anticipation of pain.²⁹ Reducing these triggers can be effective in managing anxious patients.^{30,31}

The office atmosphere should be made calm and unthreatening by the playing of soft music and avoiding bright lights and colours. A study found that patients preferred for offices adorned with posters and pictures, the waiting area supplied with ample number of books and magazines rather than bare walls.³² They also showed preference for a slightly cooler temperature.³² The sounds produced from the instruments in the treatment room should be muted by closing the door so that the patients waiting outside may not be frightened. Smells also have an effect on perceived fear and anxiety. Some smell can trigger negative emotions and can condition a patient negatively toward dental procedure.

Inhalation of pleasant scents has an anxiolytic effect and improves mood but those studies have shown that it more efficient in managing moderate rather than severe anxiety.^{33,34} It was found that the respondents exposed to a lavender scent exhibited lower state of anxiety.³⁵ This study is consistent with the results of earlier studies using lavender or orange scent.^{36,37} Anxious patients should not be made to wait too long as longer waiting times give them time to recall all the threatening stimuli.^{36,37} Moreover, all the staffs in a dental office plays important role in creating a comfortable atmosphere in the dental office. They must be positive, empathetic, and caring to make the patients comfortable.

Improving communication skill of practitioner and trust building among patients:

A good doctor-patient relationship is very important for the management of a patient. Behaviour, attitude, and communication skill of the doctor has a crucial role in calming a patient with dental; fear and anxiety.^{38,39} The communication must always be in two-way style. Dentists can first introduce themselves and converse with the patient in their office personally, and listen to the patient carefully in an empathetic, calm, composed, and non-judgmental manner.⁴⁰ All the necessary information should be acquired from the patient regarding their dental problems. Dentists must take time to inquire and listen about their fears and concerns. (Iatrosedative technique).^{38,39} A dentist should try the best to convince the patients that their words are taken seriously.⁴¹ Dentists should give all the necessary information regarding the treatment procedure that includes description of the disease, treatment options, and preventive procedures and transparency about the treatment procedures must be maintained. Providing patients with full information about procedures can help to correct many misconceptions about the disease and treatment. It also increases the confidence of the patients.⁴² Providing the patients with all necessary information is also helpful in increasing a sense of predictability and preparing the patients mentally for the whole procedure.⁴²

Providing control

Providing control is necessary as thoughts of losing control over the treatment procedure is one of causes behind DFA. Informing the patient what to expect from the procedure, and what measures are taken to ensure

their safety, will help make the experience smoother. Control can be provided by giving information and through behavioural control. Two most commonly practiced techniques of providing control are tell-show-do and modelling techniques.

Tell-show-do is the widely used technique to make aware the patient about the new procedure, while reducing the fear of the unknown. It not only reduces uncertainty but also increases predictability in the clinical setting.⁴³ This technique involves an explanation of what is about to happen what instruments will be used and the reasons for this (tell) in phrases appropriate to the developmental level of the patient, followed by a demonstration of the procedure (show). Then lastly the 'do' phase is initiated by carrying out the procedure without deviating from the explanation and demonstration.

Modelling is a technique used to reduce anxiety. The idea behind modelling is that one person's behaviour can be altered by allowing them to observe another person performing a given behaviour.⁴⁴ In dental settings this can be achieved through observation of a dental procedure, either by viewing a video-clip in which a model who will demonstrate appropriate cooperative behaviour during treatment procedure or through observation of an actual dental procedure.

Behaviour-management techniques

Behaviour modification is a treatment approach which uses the principles of operant conditioning. It aims to replace undesirable behaviours with more desirable ones through learning and practicing. The strategies involve relaxation, guided imagery, hypnosis, acupuncture, distraction, positive reinforcement, signalling, and exposure-based treatments.

Technique of relaxation

A relaxation response is the complete opposite of a stress response and this can be achieved by both deep breathing and progressive muscular relaxation. Relaxation lowers stress and anxiety levels. It also helps a person to cope with the symptoms of anxiety. This technique is very helpful as when someone is physically relaxed, it is impossible for him/her to be psychologically upset at the same time.

Multiple relaxation techniques have been proposed; for example, Jacobsen's progressive muscular relaxation,

deep breathing, functional relaxation, the rapid-relaxation technique, autogenic relaxation, and relaxation response etc.⁴ All dentists should be familiarize with relaxation techniques and can undergo special training and implement them in practice. When a patient is identified as anxious, these techniques can be applied even before starting the procedure.

Attention distraction

Distraction is a useful technique where the patient's attention from a perceived unpleasant procedure is diverted. There are evidences supporting that focusing attention on specific alternative auditory and visual stimuli in the dental office might be beneficial for patients with mild to moderate dental anxiety.⁴² Many technological options are available for both visual and auditory distraction e.g., background music, television sets, computer games, 3-D video glasses for watching cartoons, movies and animations.

Guided imagery

Guided imagery is also known as guided affective imagery. It is a mind-body intervention by which a trained practitioner helps a patient to generate mental images. It is a pleasant, tranquil experience that consciously guides their attention to achieve relaxation, eventually reducing anxiety. It removes the focus of the patients from the dental procedure and consciously guides their attention to achieve relaxation. There are three stages to guided imagery: relaxation, visualization, and positive suggestion.⁴⁵

Hypnotherapy

Hypnosis is a condition of human mind involving reduced peripheral awareness, focused attention, and an enhanced capacity to respond to suggestion. It is an interactive process whereby a hypnotist attempts to influence a person's perceptions, feelings, thinking and behaviour by asking them to concentrate on ideas and images in order to evoke an intended effect.⁴⁶ It is quite similar to that experienced when a person is lost in thought or in a daydream, or being absorbed in a book. It is not widely practiced but there are some evidences of its effectiveness in dental practice.

Acupuncture

Acupuncture is an alternative medicine where the disease is treated by inserting needles at various targeted points on the body, known as acupuncture points.

Auricular acupuncture for treating chronic and acute anxiety has shown promising results.^{47,48} A randomized controlled trial which compared auricular acupuncture with intranasal midazolam for managing dental anxiety found that both treatment methods showed similar results.⁴⁹

Exposure therapy or systematic desensitization

Systematic desensitization is effective in treating DFA.⁵⁰ In this technique, patient is exposed to progressively more anxiety-provoking stimuli. This involves three sets of activities. At first the patients are encouraged to discuss about their fear and anxiety to construct a hierarchy of feared situations, from the least to the most anxiety-provoking then the patient are taught relaxation techniques and the final step is to gradually expose the patient to these situations. In dental scenario it involves gradually exposing a phobic patient to the aspects of dentistry he/she finds frightening.

Positive reinforcement

Positive reinforcement is an effective way that includes rewarding the desired behaviours and thus increasing the frequency of those behaviours. If a child dental patient receives something of value for his/her supportive behaviour during treatment, then we can say that the behaviour has been positively reinforced. It should be kept in mind that there is no universal positive reinforcer. Reinforcers can be anything from a gift to a smile but the social ones are most valued, such as praise and expression and showing of affection.⁵¹

Restructuring of cognitive manner

Misconceptions and negative thoughts play a big role behind DFA. Anxious patients usually have misconceptions about dental treatments and here cognitive restructuring comes to play. This technique aims to alter and restructure the content of a person's negative cognitions. It is complete opposite to distraction and guided imagery technique which aim to shift a patient's attention away from the fear-evoking situations. The modification of such negative cognitions helps in reducing fear and anxiety. The technique involves identifying the misinterpretations and negative thoughts associated with DFA, challenging the patient's misconceptions, and then replacing them with more realistic thoughts. Several studies have found the

effectiveness of cognitive restructuring in management of DFA in clinical practice.^{52,53}

Pharmacological management

General anaesthesia and conscious sedation are used in pharmacological management of DFA. Pharmacological approach is a well-established technique but it should be used only in situations where the patient is not able to respond and cooperate well with psychotherapeutic methods or is not willing to undergo any type of dental procedure. It also becomes necessary during dealing patients with special needs such as autism, mental retardation, traumatic brain injury.⁵⁴ Some clinical situations can also necessitate pharmacological management.⁵⁵ However, the acceptability of pharmacological approach is less than psychological approaches among patients with extreme dental fear as well as general people.^{56,57}

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