

Dental Anxiety among Patients : An overview

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Abstract :-

Background :

Escaping from dental treatment resulting due to dental anxiety among patient is a regular issue encountered in a dental clinic. Several factors are responsible for the dental anxiety being traumatic experience during childhood, fear of needle and pain during dental treatment, fear of sound produced by various dental instruments, fear of blood, fear of being defenceless during unpleasant situation and individuals' personality characteristics. Dental anxiety among patients can be identified through initial interaction among the dental practitioner and the patient. Such anxiety can however be managed by behavioural therapy and pharmacological intervention on the basis of patient's personality and level of dental anxiety

Method : Review articles, case reports, original research articles related to dental anxiety among patients were searched from Google scholar and PubMed databases.

Result: Anxiety of dental treatment results in avoiding regular dental treatment making it worse and require even more complex treatment planning. The factors responsible for dental anxiety may differ for each individual in relation to age, sex, personality. Empathy and trustful relation between patient and dental practitioner is the key to neutralize dental anxiety among patients. Hence

individual approach for each patient and timely recognition of the anxiety should be practiced by the dentist for prevention and treatment of dental anxiety.

Keywords : Dental anxiety, behavioural therapy, pharmacological intervention.

INTRODUCTION

The technology and modern day dentistry plays a crucial role in prevention of oral diseases, yet dental fear is still regarded as one of the major culprit behind the negligence of one's oral health. Fear from dental treatment is prevalent both in children and adults and is also a social burden these days (1). It has been observed that DA primarily leads to the avoidance of dental treatment which can further worsen oral health and leads to poor dental prognosis and leads to an overall reduction in one's self esteem (2).

Dental anxiety is associated with factors such as socio economic status, age, gender, education etc and varies from one to another (3).The magnitude of dental fear for some individuals could be so catastrophic that it could create a havoc in oral health related quality of life (4). In the dental treatment delivery settings, anxiety could be a result of a treatment plan with high cost, being apprehensive of pain with needles and the fear of unknown dental procedures (5). Dental anxiety and odontophobia, is prevalent in approximately 36% of the population with an additional 12% suffering from extreme dental fear worldwide (6).

In India, 61.5% children aged between 6-12 years are severely anxious for dental treatment, 23% children are mild anxious, and 17% children showed no anxiety (7). Amongst patients aged between 18-70 years : 45.2% of the participants were identified to be less anxious, 51.8% were moderately or extremely anxious, and 3% were suffering from odontophobia (8). It has been suggested that a traumatic dental care experience during childhood could eventually lead to a higher level of anxiety amongst children (6).

In-depth knowledge and understanding about the etiological factors behind dental anxiety may assist dental professionals and researchers in formulating desired interventions.

This in turn could prove beneficial in the reduction of dental anxiety and fear among children and adults towards dental treatment. This study overviews various causes and management of dental anxiety and fear, which is the need of the hour.

Methodology :

Literature review of articles on etiology and management of dental anxiety among patients from Google scholar and PubMed databases was done by various review articles, case reports, and original research articles. Based on these, this study gives an overview of the current concepts on etiology of dental anxiety among patients in a dental setup and management and prevention which can help to overcome such issues.

Etiological factors

Pain or fear of pain is the prime cause of dental anxiety. Some common causes of dental fear includes, fear of pain during dental procedures, fear of needle and anesthesia, fear of sounds produced by dental drills, fear of dental instruments and overall dental setup, fear of criticism regarding teeth condition, fear of blood, fear of choking and gagging, feeling of vulnerability and loss of control i.e. absence of probability to escape unpleasant situation combined with the fear of unknown. The peculiar environment and odor of a dental setup could also contribute to the discomfort experienced by some patients (1). Other causative factors, such as past traumatic experience, individual personality characteristics such as neuroticism and self-consciousness, lack of understanding, the coping style of the person, perception of body image (9).

Physiological reactions to anxiety during dental treatment include a rise in blood pressure, tachypnea, fever, syncope whereas tachycardia is a very useful factor to ascertain the level of anxiety.

Many psychological conditions results in dental anxiety such as obsessive-compulsive disorder, fear of microbes, agoraphobia, depression, victim of abuse or are undergoing post-traumatic stress disorder(PTSD) (9).

Causative Factors of Dental Anxiety among Children :-

- ***Direct Previous Traumatic Experiences:*** It has been observed that patients who have experienced traumatic past dental event have a higher level of dental anxiety especially during childhood which is stated as ‘conditioning via aversive treatment experience’. Invasive dental treatment is considered as one of the reason of child dental fear and anxiety, as higher the number of extraction higher is the probability of child being anxious about dental treatment
- ***Parental Anxiety:*** A significant relation exists between parental and child dental fear. Teasing about negative dental treatment can be a prime cause for dental anxiety. The interchange between the dental fear portrayed by parents play an important role in predicting the dental fear and anxiety of a child. Children often tend to imbibe the anxiety around them i.e. parent or sibling who previously experienced anxiety about dental treatment. This therefore is thought to be the most relevant cause for dental anxiety within a child.
- ***Cognitive Ability:*** Children showing higher intelligence quotients displayed less anxiety than others during their first visit to a dental clinic (6).
- ***Number of Siblings:*** Higher number of siblings, particularly amongst preschoolers, has been linked to an increased level of dental anxiety .The reason behind it is the vast amount of information exchanged between siblings leading to a higher dental anxiety levels (10).

- ***Clinical Environment:*** Various factors such as the drilling sound, sight of injection followed by long waiting periods and noise of other children undergoing dental treatments have been found to trigger dental anxiety. Other factors such as sharp dental instruments, the smell resulting from dental routine procedures, in addition to a dentist's attire and overall personality also prove to be a potent factor in DFA (10).
- ***Education and Socioeconomic Status:*** The educational qualification of parents along with their socio-economic status has been considered as an additional factor which contributes to DFA in children. Low socioeconomic background resulting in decreased awareness and knowledge tend to increase the level of dental anxiety among families and their children. Certain other studies reported a very weak association or no association between the dental anxiety of children and the various educational levels (10).

Causative Factors of Dental Anxiety among Adults :-

- ***Direct Previous Traumatic Experience :*** A close association has been found between remembered and expected pain than it was between remembered and experienced pain. A higher anxiety level has been observed in anxious patients with past traumatic dental experiences than in non-anxious.
- ***Peer Influence :*** Influence of peers play an influential role in the causation of dental anxiety. The stories and past treatment experiences heard from their friends and family play a vital role behind the emergence of dental anxiety.

- **Anxiety due to pain** : The apprehension of pain linked to an unknown dental procedures lead to increased dental anxiety among patients. The fear generated due to a mere sight of the needle during local anaesthetic injection was the most commonly reported factor.
- **Sexual assault** : It is seen that sexual assault victims are more likely to exhibit dental anxiety compared to people who had not experienced sexual assault. It was especially true in case of women abuse survivors who find it difficult to lie flat on a dental chair along with increased gag reflex during a dental treatment. These findings substantiate that not just previous, negative dental experiences can cause dental anxiety but also other past unpleasant experiences.
- **Personal trait** : Neuroticism and extraversion are the two personal traits predominantly associated with dental fear and anxiety. A positive correlation exists between dental anxiety and neuroticism, on the other hand a negative correlation is seen associated with extraversion. This suggest that a higher dental anxiety has been linked to individuals who are introvert and prone to neuroticism.(6)
- **Fear of dental treatment during pregnancy** : The fear and risk of causing any undue harm to the fetus on undergoing a routine dental procedure is seen as a leading factor in avoidance of dental care during pregnancy. The lack of awareness combined with previous negative experiences could eventually cause undue complications such as premature birth, pre-term low birth weight and pre-eclampsia. Thus, it is important to educate the masses about the prevention of oral diseases and its early intervention which lays the foundation for overall health of mother as well as the child (2).

- **Genetic Basis** : It has been found that the mutation of gene MC1R decreases the efficiency of local anesthetic in dentistry which in turn has shown to raise one's anxiety during routine dental procedures (1).

MANAGEMENT :-

Various factors can play a crucial role in management of dental anxiety such as patient's age, his attitude, past dental experience, and cooperation by an individual. Several measures are employed to manage patients with dental anxiety which is described below.

Management in Children

Various methods are suggested for management of dental anxiety among children:

- Provide short waiting period
- Incorporation of a play area to distract and provide a healthy environment to the child
- Allocate sufficient time for appointment.
- Adapt a communication skill which is friendly yet effective.
- Audio-visual aids can be used to distract the patients.
- Providing a feel of control over the procedure by active participation of the patient during treatment, such as raising hand during any issues while ongoing treatment.
- Sufficient local anesthesia should be provided prior to any pain-inducing procedure.
- Provision of relaxation therapy for children with special needs that will assist patient to acquire control over their psychological state.
- In highly anxious children who are unable to perform any of the psychotherapeutics, pharmacotherapy may be indicated such as:

- Conscious sedation technique, to render a highly anxious patient into a relaxed state through drugs. The routes employed can either be oral, intramuscular, sublingual, rectal.
- When the above techniques prove to be of no help, the practitioner can opt for general anesthesia with required equipments and trained personnels (12).

Management in adults

Above methods described for child anxiety management can be employed for the management of dental anxiety in adults. In addition, the following techniques can be used:

- Individual systematic desensitization, in which patients are slowly introduced to a fearful stimulus and gradually learn the coping mechanism to reduce anxiety by utilizing another technique such as relaxation therapy methods or CARL
- Anxiety induced by the sight of needle could be managed by a computer-controlled local anesthesia or electronic dental anesthesia. This technique, although expensive and technique sensitive, is quite helpful since it replaces the use of needle and is based on the “gate-control theory of pain,”
- Counseling of patients with a psychologist or behavioral therapist could also be arranged along with referral for group therapy sessions (12).

PREVENTION :

Prevention of any disease/condition is a vital tool of effective patient management. This may comprise of modifications related to patients, dental health provider, or dental clinic set-up and its associated environment. Beyond this, community level strategies may be helpful to tackle this problem on a mass scale.

Modification at Dental**Operator Level :-**

Operators/dental team plays a crucial role in determining future behavioral changes in dental patients. The experiences of a first dental visit among patients contribute to a huge part in shaping patients attitude towards future dental treatments. Dental anxiety can be effectively managed by showcasing positive behavior of the entire dental team towards individual patient. On the other hand, an unpleasant encounter with an impolite and non-empathetic operator/dental team behavior may give rise to fear and anxiety in an already apprehensive patient. Thus, it is preferable to employ a dental team exhibiting empathy and good communication skills right from the beginning of patient interaction. Proper training and education of the dental team is required to achieve an overall reduction in patient anxiety (12).

Modification of Dental Clinic Environment

A typical dental setup is often considered to be frightful stimulus evoking undue anxiety among patients. Hence dental professionals always strive to create a friendly environment which could alleviate dental anxiety and can further build a positive attitude towards dental treatment. These measures include minimizing bright lights, avoiding white uniforms, using relaxation music, decoration of reception and waiting room, sound proofing the operating rooms to minimize voice, and intentionally engaging a friendly receptionist with a positive and helpful attitude towards patients (12) .

Modifications at Patient Level

Various methods can be adapted to modify the patient attitude for the dental treatment .Some of those can be Aromatherapy, Sensory-adapted dental environment (SDE), Hypnotherapy and Psychological therapy.

Use of essential oils mainly with orange and lavender fragrance can be used as a source of Aromatherapy in dental setup, known to produce positive physiological and pharmacological effects which can be effective in reducing state anxiety. Relaxing the patient with sensory dental environment can be an effective management of dental anxiety (12). The interaction between hypnotist and the patient focuses on influencing the patient's behavior, perception, feeling, thinking during dental treatment by the idea of motivating them to concentrate on images and thoughts that may induce the intentional effect. This method can be useful in patient with gag reflex, dental anxiety and fear and can be used along with cognitive behavioral therapy (11). Principles of learning, in terms of both social learning and classical and operant conditioning are the key of behavior modification. It aims at conversion of an undesirable behavior into the required desirable behavior through learning. The strategies for this involves relaxation along with guided imagery and adjuvant use of physiological monitoring using biofeedback, acupuncture, hypnosis, distraction, positive reinforcement, and exposure-based treatments, like systematic desensitization, modeling, "tell-show-do" (11).

CONCLUSION

A vicious cycle is created due to the sheer negligence of oral health due to the occurrence of dental anxiety which leads to further avoidance of dental care and the need of an even more complex treatment planning at later stages. This could be attributed by the fact that the avoidance to seek dental care, as a result of anxiety, could eventually transform a mild dental caries into a more complex form, leading to the need of root canal treatment or extraction. Causative factor for dental anxiety may differ for each individual in respect to age or sex, therefore specific management approaches should be used by the dental professional for each individual.

Dental professional should be empathetic towards the patients and should be skilled enough to recognize the fear and treat patient by individual approach. Other factors such as timely

recognition of patients fear and anxiety and establishing mutual trust are necessary for a successful treatment. Thus a thorough understanding of extremely complex psychology of dental fear is essential in the prevention and treatment of dental anxiety, fear and phobias.

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