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REVIEW ARTICLE

TREATING ANXIETY: A DILEMMA IN DENTISTRY

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ABSTRACT

A considerable amount of overall population suffers from inordinate dental anxiety/fear that makes them to avoid the dental treatment. Avoiding dental offices can lead to many complications with bad consequences. It is the most frequently encountered issues in the dental offices. To perform an effective dental procedure on a patient suffering from anxiety/fear, it is very important to diagnose dental anxiety/fear and manage it in proper manner. It is important for a practitioner to properly assess patient's behaviour, cause of his/her anxiety and treat it with adequate therapy methods. The aim of this review is to present causes of dental anxiety/fear as well as management of it.

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INTRODUCTION

Anxiety is the motivation associated with behaviour that occur to potential, signalled, or ambiguous threat. Fear &Anxiety are often measured through the intensity or persistence of the behaviour with which they are associated, and may further be assessed by their ability to be conditioned to stimuli associated with these threats. These characterizations make it clear that anxiety and fear may intergrade or overlap, just as the stimuli that elicit them represent extremes of continua of clarity and immediacy of threat, such that a particular threat might appear at various points along these continua (Blanchard, 2008). Fear and anxiety toward the dentist and dental treatment are both significant characteristics that contribute to avoidance of dental care (Pohjola, 2007; Gatchell, 1983). Anxiety associated with the thought of visiting the dentist for preventive care and over dental procedures is referred to as dental anxiety. It has been cited as the fifth-most common cause of anxiety by Agras et al. (1969) Some of the symptoms associated with dental anxiety include tachycardia, elevated blood pressure, and perspiration, the management of all of these makes it more complicated for the dental team to provide the required level of care (Sharif, 2010).

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Thus, studies have indicated a growing trend towards the application of anxiolytic and sedative agents in order to provide a relaxing condition for the patient throughout dental procedures (Kaakko, 1999). In 2009, a study of dental fear prevalence in 1959 Netherlands reported 24.3% of the participants had moderate to high dental fear (Oosterink, 2009). Using a larger and more representative sample, Freidson and Feldman reported that 51 % of their study population did not visit a dentist regularly. Of this group, 9% reported that their reluctance to do so was based on fear. Thus, for about 5% of the population (9% of 51 %), or about 10 million Americans, fear is the primary reason for failure to make necessary dental visits (Freidson, 1958). A cross-cultural study of Chinese and Danish patients reported moderate to high dental fear in 30% of Chinese and 15% of Danish participants (Schwarz, 1995). Dental fear studies on German populations have reported a mean Dental Anxiety Score (DAS) of 8.6 and a dental phobia incidence of 11% (Kunzelmann, 1990; Enkling, 2006). The highest prevalence of dental fear appears to be in Japan, where a study of 3041 students and adults reported that 42.1% had high dental fear (Weinstein, 1992). Therefore, on the basis of the data reported in these studies one may infer that population in great amount avoid dental treatment, and countless others receive poor dental care, because of fear. The aim of this review is to highlight the possible pathways to reduce the fear and anxiety in dentistry by the use of medications and other means.

Communication: Advantages of adopting patientcentred approaches include improved patient satisfaction with treatment, adherence to preventive recommendations, lowered litigation, reduced work-related stress and improved health outcomes (Finset, 2011). Communication is vital for patientcentred approaches. Communication is the means by which the Dental Health Professionals (DHP) forges the treatment alliance with the patient and permits the DHP to understand the felt needs and the difficulties dentally anxious patients experience. We propose, therefore, that communication is the fulcrum of the treatment alliance, and it is through communication that DHPs understand patient fears, assist patients to cope and develop a treatment plan appropriate to the patient's psychological and dental treatment needs. Thus, we postulate that many problems dental patients experience when interacting with DHPs "arise from issues of (poor) communication (Watzlawick, 1967)."

Studies in paediatric settings have shown that communication between the DPH and the child as well as between the parent and child critically influence the child's anxiety level during dental procedures. Within paediatric dentistry are examples where communication between DHPs and the child patient is recognized as essential. In an early systematic review of the influence of dental staff behaviour on theyoung child to reduce child dental anxiety and disruptive behaviour, it was found that engagement by the dentist with the child was important.[15]In a recent survey of Finnish people (n = 5,086) attending the dentist, it was found that those who were somewhat fearful of attending the dentist "felt more often that there was a deficit in communication with the dentist (Zhou, 2011)."

Typologies of dental anxiety and fear: guidelines for management approaches: Several typologies have been put forward to explain the different types of dental anxiety which might be seen in the clinic. Different levels, types and characteristics of dental anxiety and fear will dictate different management approaches by the dental practitioner. At perhaps the most basic level, dental anxiety varies across a continuum, from very mild anxiety to severe and debilitating dental phobia which might preclude a person from dental visiting even when they are in severe pain or discomfort.[17] Milgrom and colleagues have identified four different groups of fearful patients who are argued to differ in terms of both their clinical presentation and in the most appropriate treatment approaches (Milgrom et al., 2009). This category system has been labelled 'The Seattle System' and has been validated by Locker et al. (1999)

Individuals who are fearful of specific stimuli can easily identify the aspects of dentistry they find most aversive (Milgrom et al., 2009). While the most common of these stimuli are typically injections, the sound/sight/smell of the drill or handpiece, and pain associated with dental treatment, fearful individuals may identify any number of dental procedures or parts of the dental setting as the one trigger for their dental fear. Treatment for this type of fear involves gradually exposing the individual to the feared stimuli, encouraging the patient to use relaxation strategies throughout to manage their anxiety levels. This method is called 'systematic desensitization'. Individuals who are fearful of medical catastrophe fear that something will happen during treatment that will cause a medical emergency, such as a heart attack.[18] Often, these patients will report beingallergic to or having had a 'reaction' to local anaesthetics, particularly those that contain epinephrine or similar vasoconstrictor. In the case of a 'reaction' to local anaesthetic, the patient may have felt symptoms of autonomic arousal, consistent with increased epinephrine levels (e.g. heart palpitations, shortness of breath, etc.). In addressing this type of fear, taking a full medical history, providing education and gradual exposure are key. After explaining the relationship between anxiety and autonomic symptoms, the dentist may then offer to inject a very small amount of anaesthetic with epinephrine to see how the patient feels. If the patient feels increased autonomic arousal, the dentist should encourage the use of relaxation skills to slow heart rate and breathing. As the patient learns to control his or her autonomic arousal, the fear of a dangerous reaction gradually extinguishes (Finset, 2011). Patients with generalized dental anxiety experience significant anxiety in anticipation of dental treatment and are not typically able to identify one aspect of dental treatment that is difficult for them (Milgrom, 2009). In fact, when asked what about dentistry is difficult, many patients in this category will respond, 'it's all terrible'. Many individuals in this category will also report other fears, such as heights, water, and/or flying. Patients with generalized dental anxiety will often report difficulty sleeping the night before an appointment and feeling physically and/or emotionally exhausted after treatment. The key to this category is worry: patients will worry about the procedure itself; their own behaviour during treatment and whether they will be able to manage their own anxiety; what future dental treatment they may or may not need; and whether the dentist and dental staff are perceiving them in a negative light because of their fear and oral health. Patients who fit the generalized dental anxiety cate-gory respond very well to reassurance before, during and after the procedure to help alleviate their worry. Training these patients in relaxation strategies and maintaining a gradual exposure to increasingly invasive procedures allows the patient to gain a sense of mastery over his or her anxiety, although they may always describe themselves as a 'nervous patient'.
Finally, patients who are distrustful of dental personnel may come across as argumentative or suspicious of the dental practitioners' motives (Milgrom, 2009).

They are mainly concerned about not being in control of their treatment and often complain that prior dentists 'just treated me like a set of teeth' or 'tried to pull one over on me'. They also worry about dentists and dental staff perceiving them in a negative light, and may use sarcasm or thinly veiled insults. While these patients do not present as fearful in a classic sense, they do fear a loss of control or self-esteem at the hands of the dental providers, leading them to present in a confrontational way to regain control of the situation. Patients in this final category respond best to information and requests for permission. The dental practitioner should ask the patient if they may tilt the patient back in the chair, use particular instruments, and do an examination. All steps in the process should be explained to the patient so that he or she knows what is happening throughout the appointment. Patients in this category may wish to watch the procedures using a hand mirror, although not all patients will wish to do so. When presenting a treatment plan, all options should be presented verbally and in writing, with the emphasis on the patient's role in ultimately deciding what treatment to pursue.

Role of dental office environment in management of anxiety: The environment of dental office plays a significant role in initiating dental fear and anxiety. The atmosphere of dental office should be made calm and unthreatening, which

Table 1. Indicator of Sedation Need Scoring Tool (IOSN)

IOSN domain	Scores	Source
Anxiety	1-3	Taken from MDAS score: MDAS between 5-11 is minimal anxiety, scores 1 MDAS between 12-18 is moderate anxiety, scores 2 MDAS between 19-25 is high anxiety, scores 3
Medical history	1-4	A range of medical and behavioural indicators are provided including gag reflex, fainting attacks, hypertension, angina, asthma, epilepsy, arthritis and Parkinson's disease.
Treatment complexity	1-4	An indicative list of treatments is provided – if the referrer is in doubt about the complexity of any given treatment, they are asked to score high.
Total Rank Score	Source Descriptor	Sedation Need
3-4	Minimal need	No
5-6	Moderate need	No
7-9	High need	Yes
10-12	Very high need	Yes

Table 2. The list of medications below are intended to serve only as a guide to facilitate the dental professional's understanding of medications that can be used for Anxiety. Medication protocols can vary for individuals with Anxiety

Anxiety	SNRIs (Serotonin-Norepinephrine Reuptake Ihibitor) . Venlafaxine . Duloxetine	Dysphagia, Xerostomia, Anxiety, Dizziness, Headache, Bruxism, Sweating, Suicidal tendencies increased.
	Antidepressants SSRIs (Selective Serotonin Reuptake Inhibitor) . Paroxetine . Setraline . Fluoxetine . Escitalopram	Nausea, Dysphagia, Xerostomia, Sweating, Bruxism, Nervousness, Headache
	TCAs (Tricyclic Antidepressants) . Amitriptyline . Imipramine . Desipramine	Xerostomia, Dysguesia, Stomatitis, Edema, Discolored Tongue, Sladentitis, Use of local anesthetics with epinephrine may cause sever prolonged hypertension.
	Benzodiazepines .Diazepam	Drowsiness, Double vision, Xerostomia or Hypersalivation, Seizures, Headache, Fatigue, Ataxia, Depression, Respiratory depression, Dystonia
	. Clonazepam	Xerostomia or hypersalivation, coated tongue, soregingiva, drowsiness, dizziness, weakness, fatigue, difficulty thinking and remembering, slurred speech, nausea, respiratory depression, seizures, dyskinesias. Paradoxical CNS responses (e.g., aggressive behavior, anxiety, hostility), anorexia, increased/decreased appetite and weight. Dysarthria (motor speech disorder), muscle pain, muscle weakness. Rarely: rash, hives, difficulty swallowing or breathing, angioedema, suicide attempts. Alcohol, and drugs that cause sedation, may increase the sedative effect of clonazepam.
	Triazolam	Drowsiness, headache, dizziness, ataxia (lack of muscle coordination), nausea, vomiting-rare (<1%). Angioedema, anaphylaxis, memory impairment. Alcohol, and drugs that cause sedation, may increase the sedative effect of triazolam. Ketoconazole may increase blood concentration of triazolam.
	Lorazepam	Drowsiness, dystonia, double vision, xerostomia or hypersalivation, seizures, CNS and respiratory depression, paradoxical CNS stimulation, tiredness, syncope, fatigue, ataxia, depression, headache, nausea. Alcohol, and drugs that cause sedation, may increase the sedative effect of diazepam. Use with caution for persons with sleep apnea.

can be done by playing soft music and by avoiding of bright lights. A study done by Bare and Dundes (Bare, 2004) suggest that in slightly cold dental office, the patient feels more comfortable. The walls should be well adored with happy faces and pictures. The sound created by instruments should be muted by soundproofing the cabin. Anxious patients should not be made to wait too long, because longer waiting period will give them ample time to absorb more negative experience. Preferably, the consultation room should be separated from the operatory. Receptionists, dental nurses, and dental hygienists plays a very important role in creating a friendly and more comfortable environment in dental office. They should be positive and caring to patients and talk with them in friendly manner. They should not provoke fear or nervousness in patients by wearing surgical gowns in consolation room. There should be no clinical/medicinal odour present, if present can be avoided by aromatherapy, which is an effective approach; wherein essential oils of aromatic plants are used to produce positive physiological or pharmacologicaleffects through the sense of smell. Studies have shown that inhalation of pleasant scents has an anxiolytic effect and improves mood (McCaffrey, 2009; Chen, 2008; Muzzarelli, 2006).

Psychological intervention and pharmacological intervention comparison: Psychological and pharmacological interventions are equally effective in reducing or eliminating dental anxiety and phobia. Proper result to behavioural and cognitive therapy does not comes immediately, and it requires multiple sessions to maintain an initial treatment response. Studies have shown that dropout rates were low and reduction in anxiety or phobia was maintained over longer time periods, with more patients reporting back for future treatment.[24-27]Studies have also shown that pharmacological approaches are seen less chosen option by patients when compared to

psychological techniques, and have been shown to be effective for only a short-term basis (Kvale, 2004; Forbes, 2012; Newton, 2003).

Indications for pharmacological management: Sedation with drugs is not a replacement for a caring and sympathetic attitude to the patient and behavioural management strategies are still required. Psychological approaches may range from a planned approach to treatment with simple, more readily accepted methods before more advanced, tell-show-do techniques, and include methods to provide a greater sense of control. When these are insufficient then conscious sedation or general anaesthesia may need to be considered.[31]Pain and anxiety control can be achieved by the use of drugs, and should be chosen only in situations where the patient is not able to respond and cooperate well with psychotherapeutic interventions, is not willing to undergo this type of treatment, or is considered dental-phobic (Folayan, 2002; Newton, 2012). There are several patient report anxiety scales available (Newton, 2006) and we selected the Modified Dental Anxiety Scale (MDAS) because of its relevance, validity and brevity (Humphris, 1995). Asedation tool was developed to help clinicians in deciding about need for conscious sedation. It includes three indicators: anxiety, medical and behavioral, and treatment complexity. Scores for each of these indicators range from 1 to 4. Final scores sum to 3–12. A score of 3 or 4 indicates minimal need for sedation, 5 or 6 moderate need, 7–9 high need, and 10–12 suggests very high need or even use of general anesthesia (Coulthard, 2013). Benzodiazepines are among the most widely used anxiolytic and sedative agents. They influence the activity of the major inhibitory neurotransmitter and gamma-aminobutyric acid (GABA). Furthermore, they raise the stimulatory threshold of the neurons in the central nervous system.Some of the most common benzodiazepines which are used in dentistry include Diazepam, Midazolam and Triazolam. Clonazepam is also a longacting benzodiazepine which is primarily used to control seizure attacks. It has also been prescribed for cases of panic disorder

Conclusion

Anxiety is found in almost every dental patient. It is the duty and responsibility of the dentist to provide excellent dental care to these patients. Management of these patients should be an essential part of clinical practice, as a considerable amount of the population suffers from anxiety and fear. Degree of anxiety varies from patient to patient. To manage low or moderate feared patients, dentists must show a personal interest in them, by displaying concern for their feelings, and allowing them to ask questions regarding their dental treatment. The clinician should answer all questions of patient in direct manner. More fearful patients may require more effort, time, employing different techniques, before they are prepared to undergo any kind of treatment. Some patients may find the use of sedation more effective in managing their fear and anxiety. But, the choice of anxiety management should must be left to the dental practitioner. However, the choice of choosing the management of anxiety should always be based on the understanding of particular patient, his/her particular history and particular concern. Highly anxious or phobic patients mostly requires combined management approaches. Because of the high risk involved in pharmacological interventions, the dentist and his/her dental team should follow proper guidelines and be adequately trained and sufficiently equipped with proper infrastructure before pharmacological interventions can be incorporated. Every successful treatment rests on dentist–patient cooperation, so a relaxed and comfortable patient will lead to stress free atmosphere for the dental team and better treatment outcomes.

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