Top tips for the management of the dentally anxious patient in general practice

By Ranj Abdulla,[1] Aisling Murray,[2] Clement Seeballuck[3] and Abigail Heffernan[4]

Introduction

Dental anxiety is often described as fear or stress triggered by the dental setting. It is estimated to affect more than one-third of the population.[1] Dental anxiety can affect patients in different ways. Signs and symptoms of dental anxiety include (but are not limited to) patients visibly trembling, sweating, reporting sleep loss preceding a dental appointment, shortness of breath, heart palpitations and gastric symptoms such as nausea, vomiting and diarrhoea. Dental anxiety may manifest as late cancellations or even missed dental appointments. Lack of presentation for routine dental care may result in an emergency situation potentially compounding feelings of fear and distress. Avoidance of dental care often results in more significant oral health problems and is linked with a higher number of missing teeth.[2,3] Socio-economic factors such as low income and living in rural areas have also been linked to higher dental anxiety.[4,5,6,7,8] For anxious patients, the stresses of both attendance at a dental service as well as the potential sequelae of non-attendance may impact negatively on their mental health. Patients with high levels of dental anxiety have been found to have a higher score on their oral health impact profile, with some patients reporting feelings of self-consciousness and lack of life satisfaction.[9]

It is therefore important for the dental team to have an awareness and understanding of how dental anxiety may present and how to help manage it.

1. Communication is key

Communication, both verbal and non-verbal, is of paramount importance when creating a relaxed environment conducive to patient care. Dental anxiety is associated with a lack of trust[10] and can be reduced by good communication.[11,12] It is crucial to have an open approach to communication with patients, where they feel safe and comfortable and listened to. Patients need to feel that they can freely discuss their worries. A sensible approach is to consider the dental team, patients and or parents/guardians to have a treatment alliance, with the patient pivotal in the decision-making process[13] and this also aligns with modern approaches to healthcare.[14,15] A recent study demonstrated reduction in anxiety where dentists communicated virtually via social media with patients undergoing impacted teeth removal with local anaesthetic.[16]

Having calm body language is important for the dental team, but also crucial is the ability to pick up on patient nonverbal indicators of anxiety.[17] Matching the patient's body language can also be effective.[18]

Neurolinguistic programming (NLP) is a powerful communication tool that may help with anxiety and phobias.[19] All patients are unique. It is important to consider whether the patient responds best to audio, visual or kinaesthetic methods of communication.[20] However, NLP is technique-sensitive and clinicians must be appropriately trained before engaging with this.

Effective communication within the dental team is also key. Interactions with the nurses and any auxiliary staff should be calm with appropriate language and avoidance of any triggering words such as 'needle' or 'drill'.

2. Prepare for and plan treatment

Diligent pre-planning for the appointment is important to mitigate the unexpected. Patients should be aware in advance of what is planned for the session and, unless an unforeseen circumstance warrants, this should not be unexpectedly altered. Keeping to the agreed treatment will reinforce trust. Preparing for the procedure will also ensure that it can be undertaken with minimal interruptions seeking materials or setting up equipment.

Consider the dental environment as well when managing dentally anxious patients. Having a room layout that is primed for distraction techniques and guided imagery (discussed later) is imperative. Similarly, ensure that your room is free of negative imagery, concealing anxiety triggers such as syringes until appropriate. A recent study also found a correlation between having a lavender scent in the surgery and reduction in anxiety.[21]

3. Practise and be aware of behavioural management and distraction techniques

Background music can have a positive impact on the emotional reaction of patients and has been shown to reduce levels of anxiety in medical and dental settings.[22] Similarly, providing visual distraction such as watching ceiling-mounted televisions whilst having a dental procedure completed is likely to have a similar effect as background music.[23]

Some anxious patients perceive accepting dental treatment as a loss of control which may heighten their level of stress and anxiety.[24] Providing such patients with a 'stop signal' – such as raising their hand, may help lessen this particular source of anxiety and is essential in building trust between the anxious patient and the dental team. Specific signals should be agreed prior to starting the procedure; it is important to note that failure to stop when the patient uses the signal, will breach the trust relationship. 'Tell-show-do' is a behaviour shaping strategy that is often taught to undergraduate dental students as a method of managing anxious adult and paediatric patients. It has been shown to reduce uncertainty and increased predictability in the clinical setting.[25] Some younger patients may learn more about ▸▸

[1]DCT 1, Dundee Dental Hospital and Research School, Dundee, UK; [2]General Dental Practitioner, Navan, Republic of Ireland; [3]Lecturer in Paediatric Dentistry, Dundee Dental Hospital and Research School, Dundee, UK; [4]Consultant in Special Care Dentistry, Dundee Dental Hospital and Research School, Dundee, UK.

the environment that they are in from observing other people's behaviour. Modelling is another technique used to reduce anxiety that can be achieved through observation of a dental procedure, either by watching a recorded procedure or by observing a successful procedure in person, for example, a child watches their parent undergo a simple dental examination.

Anxiety reduction may also be achieved by teaching patients proper breathing techniques. Diaphragmatic breathing can reduce tension in the chest and provides more oxygen for the body per breath. The technique can be applied as follows:[26]

a. Sit up straight; head should be upright not hanging forward or tilted back
b. Rest one hand on your chest and the other hand on your stomach
c. Blow out all the air in your lungs until you feel empty
d. Begin to breathe in; inhaling evenly: count your breathing until you feel exactly full
e. Exhale evenly: count the breath out of your body, without any sudden release
f. Exhale longer than you inhale.

4. Consider pharmacological management where necessary

For some patients, behavioural and distraction techniques are not sufficient and so pharmacological methods of managing dental anxiety are required – either as well as the techniques described above, or instead of them.

- **Pre-medication.** An oral dose of a benzodiazepine, such as Diazepam, can be used as a premedication to aid the management of mild (dental) anxiety. Scottish Dental Clinical Effectiveness Programme (SDCEP) suggests a single 5 mg dose of Diazepam two hours prior to the procedure as being an effective method of relaxing the patient.[27] It is important to recognise that the use of a premedication ('premed') is not a sedation technique and can be used by non-sedation trained dental practitioners. The term 'oral sedation' (see below) should not be used to indicate the prescription of a premedication. Suitable instructions must be given to the patient regarding the need for an escort and the need to avoiding skilled tasks such as driving, after administration
- **Conscious sedation**. Conscious sedation is defined as a technique in which the use of a drug or drugs results in depression of the central nervous system (CNS), allowing treatment to be carried out, but during which verbal contact is maintained with the patient.[28] Conscious sedation is categorised based on the route of administration, oral, inhalation and intravenous (IV) being the most commonly available techniques in the UK[29]
- **Inhalation sedation.** Inhalation sedation, which may be referred to as 'laughing gas' by patients, is a commonly used sedation technique to manage dental anxiety in both children and adults. It is a mixture of nitrous oxide and oxygen; the exact composition can be tailored to the patient's needs using a standard RA (relative analgesia) machine. The nitrous oxide is administered via the use of a nasal mask. Patients therefore must be able to breathe through their nose. A key benefit of this technique is that it has rapid onset and fast recovery, with no hangover effects.[30] This can be advantageous to patients who have difficulty securing an escort and/or childcare, for example, since an escort to accompany the patient to treatment appointments is not obligatory. A further advantage of this technique is that nitrous oxide has analgesic, anxiolytic and anaesthetic properties.[31] Although this technique does not have any hangover effects and is relatively easy to carry out, a thorough sedation assessment must be completed first since not all patients are suited to the technique. Some dental procedures may also be more challenging to carry out, due to the nasal mask causing an obstruction. For some anxious patients, including many who have experienced psychological trauma (see section below), the nasal mask itself may be anxiety provoking. Inhalation sedation must be delivered by an appropriately trained sedation dental team and written consent must be obtained at the outset
- **Intravenous sedation**. Intravenous sedation involves the delivery of a drug, commonly midazolam, into the venous system. Like inhalation sedation, patients being considered for intravenous (IV) sedation must have a thorough sedation assessment in advance. IV sedation (using midazolam) has many advantages. Midazolam works on the GABA complex, preventing an action potential. Midazolam is titrated to patient response, until a desired level of sedation is achieved.[32] The sedation dentist administering it should be aware of the patient's medical history and current medications and mindful of both the BNF information about midazolam and its interactions. A key advantage to the use of midazolam is its rapid onset of action. It has been estimated to have a working time of up to 45 minutes, making it suitable for many dental procedures. Midazolam is hydrolysed in the liver and excreted by the kidneys. It should be administered with caution in patients who have renal and/or liver issues. It should also be administered with caution in younger adults (eg teenagers) and older adults, since those at the extremes of age usually require a lower dose. As well as causing sedation, Midazolam may also cause paradoxical effects such as agitation or combative behaviours and is therefore not suitable for all patients
- Although frequently described as a side effect, IV sedation using midazolam may cause partial or complete amnesia of the dental treatment(s); this is frequently cited by anxious patients as an advantage since many patients prefer to recollect little (if any) of the appointment. IV sedation requires patients to be cannulated – this may pose difficulties to those with needle phobia. The technique must be administered by suitably trained staff and patients require an escort and must be given pre and post sedation instructions, with which they should comply. It is necessary to have monitoring equipment in order to safely carry out this sedation technique and the reversal agent (Flumazenil) must be held in stock and be readily available if rescue of the sedated patient is needed. Midazolam and Flumazenil are controlled drugs and should be stored appropriately.[33] Other drugs may be used (more commonly) in hospital settings, but midazolam is probably the most common drug used in dental sedation and is routinely carried out in both primary and secondary care
- **Oral sedation.** Oral sedation refers to the oral ingestion of a drug, typically midazolam, by an anxious patient, under medical or dental supervision. The drug is usually mixed with a relatively strong-tasting liquid such as blackcurrant cordial/squash or cola to attempt to disguise the drug's unpalatable taste. This technique may be used for patients who are too anxious to accept a cannula.[34] However, since it is not possible to administer the reversal agent orally, should the sedation require to be reversed, a cannula should be placed as soon as possible for safety. This technique is sometimes used to help adults with a learning disability to

accept dental treatment, but any needle phobic patient may be considered and assessed for it. Whilst this technique is sometimes referred to as a 'pre-med' by anaesthetic colleagues and medical staff, in dentistry it should only be referred to as oral sedation. Dental staff performing or attempting to perform oral sedation must first be competent and experienced in the practise of IV sedation and cannulation, since this is required to take place as soon as the patient allows. A longer appointment is required since oral administration of midazolam has a longer onset of action; this may preclude the technique being used frequently in dental practices. Usually, a standard dose is given, therefore it is not possible to titrate to effect, as is the case with IV sedation

- **General anaesthesia.** General anaesthesia (GA) refers to a medically induced loss of consciousness that renders the patient unrousable, even to painful stimuli.[35] General anaesthetic has been widely described as a very useful modality for facilitating dental treatment for patients with a profound learning disability and others with special or additional needs.[36] A GA may also be indicated if previous attempts to deliver treatment under sedation have proven unsuccessful. GA must be provided in an appropriate setting and has not been available in the United Kingdom in dental practices for many years. Access to GA lists, which are both time and staff intensive, as well as surgical and intubation tube positioning may all make providing treatment under GA more challenging. In some areas, more advanced treatments are not offered via this treatment modality. The use of GA is considered relatively safe, although it is not without risk, about which patients should be informed of at a separate assessment appointment. Older patients, including those with conditions such as dementia, may appear to take longer to recover from the general anaesthetic.

5. Consider the underlying aetiology

Psychological trauma

Psychological trauma is defined to be an event or set of events that a person feels is physically or emotionally harmful and/or life threatening. Examples of what may cause such trauma include being involved in or witnessing an accident, domestic abuse, interpersonal violence and sexual abuse. Psychological trauma is thought to have become more prevalent during the various COVID lockdown periods. Issues such as sexual abuse and domestic violence have become more frequently reported in recent years, with some people affected feeling more able to disclose a trauma history.

Trauma can have close parallels to patients accessing dental care, since patients who have experienced significant traumatic events may have difficulties reclining supine in the dental chair (particularly in front of strangers), accepting dental treatment or even a dental examination since that requires the invasion of personal space and a degree of intimacy as well as access to the oral cavity, which may have been a portal of past abuse. Some buildings may have architecture which is triggering for some patients and treatments themselves may cause patients to have flashbacks or triggers.[37,38]

Symptoms of trauma may include patients exhibiting significant emotional responses to seemingly innocuous stimuli. Some people may exhibit dissociation and seem to 'zone out' when in the dental setting.

Management of trauma begins with recognition of the issue and with a trauma informed team who can recognise the signs and help patients to access the dental care required. Grounding techniques to help reassure and remind patients where they are, what is happening and that they are safe can be very useful. It is important to note that some phrases used in an attempt to reassure patients may inadvertently re-traumatise or be a trigger. 'Don't cry', 'don't worry, it won't hurt' or 'it will be over soon' are frequently used phrases by perpetrators of abuse; their use must be avoided by the dental team.

6. Clinical psychology

Know your limitations

Psychologists, although not dentally trained, can help patients manage their emotional responses to the dental setting.[39] Psychologists who have an interest in dental anxiety are available in some areas, most commonly associated with dental hospitals.

The rationale for this type of approach is to help support patients to accept dental treatment by identifying the causes of the patient's anxiety, barriers to accepting or accessing dental care and working with the patients to try and overcome them. Various methods may be used including breathing and relaxation exercises, cognitive behavioural therapy and helping patients compile a 'check list' or 'survival list' to refer to whilst attending the dental setting. Psychological approaches are sometimes used as a standalone method to help an anxious dental patient, but may also be used in combination with dental sedation techniques (see sections on inhalation, oral and intravenous sedation).

7. There is always support when managing anxious patients. Be aware of your local resources

NHS England recently published a *Clinical guide for dental anxiety management* for general dental practitioners.[40] This is an excellent resource that provides advice on dental anxiety.

As discussed, patients with dental anxiety may disclose an underlying cause that will require addressing and is beyond our skills to manage. Be aware of local resources available and how to access them. Follow the referral pathways and always support the patient.

Conclusion

In conclusion, dental anxiety is common and may have become more prevalent during the COVID-19 pandemic. All members of the dental team, whether working in primary or secondary care, should be aware of how dental anxiety may affect their patients. Furthermore, the dental team should be aware that there are a number of techniques, using both pharmacological and non-pharmacological approaches, which can be used to help patients accept the dental care they need. ■

References

1. Milgrom P, Newton J T, Boyle C, Heaton LJ, Donaldson N. The effects of dental anxiety and irregular attendance on referral for dental treatment under sedation within the National Health Service in London. *Community Dent Oral Epidemiol* 2010; **38:** 453–459.
2. Enkling N, Marwinski G, Jöhren P. Dental anxiety in a representative sample of residents of a large German city. *Clin Oral Investig* 2006; **10:** 84–91.
3. Abrahamsson K H, Berggren U, Hakeberg M, Carlsson S G. Phobic avoidance and regular dental care in fearful dental patients: a comparative study. *Acta Odontol Scand* 2001; **59:** 273–279.
4. Doerr P A, Lang W P, Nyquist L V, Ronis D L. Factors associated with dental anxiety. *J Am Dent Assoc* 1998; **129:** 1111–1119.
5. Woolfolk M W, Lang W P, Borgnakke W S, Taylor G W, Ronis D L, Nyquist L V. Determining dental checkup frequency. *J Am Dent Assoc* 1999; **130:** 715–723.
6. Ragnarsson E. Dental fear and anxiety in an adult Icelandic population. *Acta Odontol Scand* 1998; **56:** 100–104.
7. Moore R, Birn H, Kirkegaard E, Brødsgaard I, Scheutz F. Prevalence and characteristics of dental anxiety in Danish adults. *Community Dent Oral Epidemiol* 1993; **21:** 292–296.
8. Acharya S. Factors affecting dental anxiety and beliefs in an Indian population. *J Oral Rehabil* 2008; **35:** 259–267.

9. Mehrstedt M, John M T, Tönnies S, Micheelis W. Oral health-related quality of life in patients with dental anxiety. *Community Dent Oral Epidemiol* 2007; **35:** 357–363.
10. Yuan S, Freeman R, Hill K, Newton T, Humphris G. Communication, trust and dental anxiety: a person-centred approach for dental attendance behaviours. *Dent J (Basel)* 2020; doi: 10.3390/dj8040118.
11. Hally J, Yuan S, Freeman R, Humphris G. *Effective communication and reducing dental anxiety: the role of addressing dental patients' emotional needs.* Heidelberg: 14th International Conference on Communication in Healthcare, 2016.
12. Kheir O O, Ziada H M, Abubakr N H, Abdel-Rahman M E, Fadl S M, Ibrahim Y E. Patient-dentist relationship and dental anxiety among young Sudanese adult patients. *Int Dent J* 2019; **69:** 35–43.
13. Freeman R, Humphris G M. Dental anxiety, communication and the dental team: responses to fearful patient. *J Calif Dent Assoc* 2019; **47:** 495–500.
14. Elwyn G, Durand M A, Song J *et al.* A three-talk model for shared decision making: multistage consultation process. *BMJ* 2017; doi: 10.1136/bmj.j4891.
15. Scottish Government. Realising Realistic Medicine: Chief Medical Officer for Scotland annual report 2015–2016. 27 February 2017. Available at: https://www.gov.scot/publications/chief-medical-officer-scotland-annual-report-2015-16-realising-realistic-9781786526731/ (accessed July 2023).
16. Sivrikaya E C, Yilmaz O, Sivrikaya P. Dentist-patient communication on dental anxiety using the social media: A randomized controlled trial. *Scand J Psychol* 2021; **62:** 780–786.
17. Moretti R J. Nonverbal communication skills of dentists, patient anxiety, and patient satisfaction with treatment. Loyola University Chicago: Dissertation 2069, 1981. Available at: https://ecommons.luc.edu/luc_diss/2069 (accessed July 2023).
18. Evans S. Effective communication with Neuro-linguistic Programming. *Dentistry* 12 March 2008. Available at: https://dentistry.co.uk/2008/03/12/effective-communication-neuro-linguistic-programming/ (accessed July 2023).
19. Karunaratne M. Neuro-linguistic programming and application in treatment of phobias. *Complement Ther Clin Pract* 2010; **16:** 203–207.
20. Kadjo B. Communication and neuro-linguistic programming in dentistry. *Dentistry* 22 July 2022. Available at: https://dentistry.co.uk/2022/07/22/communication-and-neuro-linguistic-programming-in-dentistry/ (accessed July 2023).
21. Kritsidima M, Newton T, Asimakopoulou K. The effects of lavender scent on dental patient anxiety levels: a cluster randomised-controlled trial. *Community Dent Oral Epidemiol* 2010; **38:** 83–87.
22. de Witte M, Spruit A, van Hooren S, Moonen X, Stams G J. Effects of music interventions on stress-related outcomes: a systematic review and two meta-analyses. *Health Psychol Rev* 2020; **14:** 294–324.
23. Gurav K M, Kulkarni N, Shetty V *et al.* Effectiveness of audio and audio-visual distraction aids for management of pain and anxiety in children and adults undergoing dental treatment – a systematic review and meta-analysis. *J Clin Pediatr Dent* 2022; **46:** 86–106.
24. Appukuttan D P. Strategies to manage patients with dental anxiety and dental phobia: literature review. *Clin Cosmet Investig Dent* 2016; **8:** 35–50.
25. Radhakrishna S, Srinivasan I, Setty J V, D R M K, Melwani A, Hegde K M. Comparison of three behavior modification techniques for management of anxious children aged 4–8 years. *J Dent Anesth Pain Med* 2019; **19:** 29–36.
26. Hopper S I, Murray S L, Ferrara L R, Singleton J K. Effectiveness of diaphragmatic breathing for reducing physiological and psychological stress in adults: a quantitative systematic review. *JBI Database System Rev Implement Rep* 2019; **17:** 1855–1876.
27. Scottish Dental Clinical Effectiveness Programme. *Drug prescribing for dentistry (3rd edition).* January 2016. Available at: https://www.sdcep.org.uk/published-guidance/drug-prescribing/ (accessed July 2023).
28. Kapur A, Kapur V. Conscious sedation in dentistry. *Ann Maxillofac Surg* 2018; **8:** 320–323.
29. Corcuera-Flores J R, Silvestre-Rangil J, Cutando-Soriano A, López-Jiménez J. Current methods of sedation in dental patients – a systematic review of the literature. *Med Oral Patol Oral Cir Bucal* 2016; doi: 10.4317/medoral.20981.
30. Yee R, Wong D, Chay P L, Wong V Y Y, Chng C K, Hosey M T. Nitrous oxide inhalation sedation in dentistry: An overview of its applications and safety profile. *Singapore Dent J* 2019; **39:** 11–19.
31. Emmanouil D E, Quock RM. Advances in understanding the actions of nitrous oxide. *Anesth Prog* 2007; **54:** 9–18.
32. Yoon J-Y, Kim E-J. Current trends in intravenous sedative drugs for dental procedures. *J Dent Anesth Pain Med* 2016; **16:** 89–94.
33. Nayani-Low S, Patel J. Safe intravenous sedation for oral surgery in a primary care setting. *Prim Dent J* 2022; **11:** 46–52.
34. Scottish Dental Clinical Effectiveness Programme. *Conscious sedation in dentistry (3rd edition).* 2017. Available at: https://www.sdcep.org.uk/published-guidance/conscious-sedation/ (accessed July 2023).
35. Dougherty N. The dental patient with special needs: a review of indications for treatment under general anesthesia. *Spec Care Dentist* 2009; **29:** 17–20.
36. Messieha Z. Risks of general anesthesia for the special needs dental patient. *Spec Care Dentist* 2009; **29:** 21–25.
37. Fredriksen T V, Søftestad S, Kranstad V, Willumsen T. Preparing for attack and recovering from battle: Understanding child sexual abuse survivors' experiences of dental treatment. *Community Dent Oral Epidemiol* 2020; **48:** 317–327.
38. Leeners B, Stiller R, Block E, Görres G, Imthurn B, Rath W. Consequences of childhood sexual abuse experiences on dental care. *J Psychosom Res* 2007; **62:** 581–528.
39. Mohammad Q A. Clinical psychology for dentist. *Psychol Behav Sci Int J* 2017; doi: 10.19080/PBSij.2017.07.555723.
40. NHS England. Clinical guide for dental anxiety management. 17 January 2023. Available at: https://www.england.nhs.uk/long-read/clinical-guide-for-dental-anxiety-management/ (accessed July 2023).