



Zoe Marshman

Jen Kirby and Helen Rodd

# Cognitive Behavioural Therapy and the Adolescent Patient

**Abstract:** Dental anxiety is common in adolescents and is associated with poor oral health status and worse oral health-related quality of life. As these patients move into adulthood, they may continue to be reliant on pharmacological approaches in order to cope with dental treatment and only attend when they have a problem. Managing anxious adolescents is also a source of stress for dental practitioners. This article describes how cognitive behavioural therapy (CBT) can be used to reduce dental anxiety in this group of patients.

**CPD/Clinical Relevance:** This article provides an overview of cognitive behavioural therapy and gives practical guidance on how such approaches can be used with adolescents.

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In the UK, there are 7.4 million 10 to 19-year-olds, who make up 12% of the population.<sup>1</sup> Approximately half (46%) of 15-year-olds have obvious dental caries experience and 10% of adolescents are reported to have severe dental anxiety.<sup>2</sup> Clearly, dentally anxious young people with caries represent a large and challenging patient group. Dental anxiety is associated with poor oral health status (increased prevalence of decayed teeth and extracted teeth) and worse oral health-related quality of life.<sup>3,4</sup> It is also associated with avoidance of dental care and compromised treatment decisions. For example, children

with dental anxiety are more likely to have their treatment postponed, more likely to have restorative treatment without local anaesthetic and less likely to have dental radiographs.<sup>5</sup>

Treating children with dental anxiety can also have a significant impact on dental practitioners as it can be stressful, time consuming and has financial implications.<sup>6</sup> Dental practitioners may be reluctant to carry out dental treatment on anxious patients for fear of reinforcing their dental anxiety and consequently report being less satisfied with the quality of care they provide.<sup>7</sup> These factors may result in children being referred to secondary dental care services and having to wait longer periods of time for their dental treatment.<sup>8</sup>

Dental anxiety that extends past adolescence is unlikely to resolve and may persist into adulthood, with life-long reliance on pharmacological approaches to *manage* dental treatment, rather than *reduce* dental anxiety. However, on the positive side, there is emerging evidence that psychological therapies can reduce a patient's dental anxiety in the long-term, although the majority of studies to date have focused on adults.<sup>9-11</sup>

## What is cognitive behavioural therapy?

Cognitive behavioural therapy (CBT) is a widely used and evidence-based psychological intervention ('talking therapy') that is recommended by the National Institute for Health and Care Excellence (NICE) for the treatment of depression, anxiety and phobias. It focuses on how thoughts, beliefs and attitudes affect feelings and *behaviours* and it helps patients to develop skills for dealing with their problems. Cognitive behavioural therapy is typically delivered by a CBT therapist but it can also be communicated via books or online resources with support, which is often termed 'guided self-help CBT'.<sup>12</sup> A recent Cochrane systematic review confirmed the effectiveness of guided self-help CBT in the management of a variety of anxiety disorders in children and young people from around the age of 6 years.<sup>13</sup> It is therefore widely recommended that these easily delivered, low intensity, therapies should be offered as the first line of treatment, allowing psychologists to focus on more complex higher intensity work.<sup>14</sup>

### Use of CBT for dental anxiety with adults

Cognitive behavioural therapy

**Zoe Marshman**, BDS, MPH, DDPH, PhD, FDS DPH, Professor in Dental Public Health, School of Clinical Dentistry, University of Sheffield, **Jen Kirby**, BDS, MFDS, PG Cert, MClinDent(Paed), Specialist Trainee in Paediatric Dentistry, Charles Clifford Dental Hospital, Sheffield and **Helen Rodd**, BDS, FDS(Paed), PhD, Professor in Paediatric Dentistry, School of Clinical Dentistry, University of Sheffield, 19 Claremont Crescent, Sheffield, S10 2TA, UK.

has shown promising results in reducing dental anxiety in adults in terms of effectiveness, acceptability and longevity of results.<sup>15-18</sup> Different types of CBT interventions have been developed for dentally anxious adults in the UK, including CBT delivered by dental nurses as well as psychologist-led interventions.<sup>19</sup>

## Use of CBT for dental anxiety with children and adolescents

Dentists employ a range of behaviour management techniques (including 'tell-show-do', stop signalling, modelling, graded exposure and systematic desensitization) with children and adolescents to reduce their dental anxiety.<sup>20,21</sup> Whilst these basic psychological techniques may be adequate for adolescents with mild dental anxiety, additional psychological interventions, based on the principles of CBT, may be required for those with moderate or severe dental anxiety. There are a variety of CBT interventions for this age group, which vary in their intensity and format:

- Psychologist-led CBT;
- Dental team-led CBT;
- Guided self-help CBT.

These different approaches will be described in turn.

### Psychologist-led CBT

Some patients will require CBT provided by a clinical psychologist, particularly those with very severe dental anxiety and/or co-existing mental health conditions (for example, attention deficit and hyperactivity disorder, depression, conduct disorders). In some countries, notably Sweden, psychologists provide face-to-face CBT or guided online CBT as part of a paediatric dentistry care pathway. A recent randomized controlled trial, the first of its kind for young dental patients, was undertaken in Sweden and compared 'normal' care with a course of online CBT guided by a psychologist.<sup>22</sup> Thirty participants, aged between 7 and 18 years, were provided with a total of 10 hours of CBT, together with their parents and clinical psychologists. Sessions were held in dental clinics, and core activities included parental education, psycho-education for children, graded exposure to dental procedures through films and direct contact, cognitive



**Figure 1.** Self-help CBT resources for adolescents, parents and dental team members.

restructuring and relaxation exercises. Dental treatment was then commenced alongside these sessions after a minimum of 6 hours of CBT. The key findings were significant reductions in child-reported anxiety and improved acceptance of dental treatment in the CBT group, which was still evident one year after the intervention. Furthermore, interviews with some of the children and parents revealed a universal positivity in attitudes and improved behaviours following the CBT approach.<sup>23</sup> In the UK, the only NHS option for clinical psychology support for children with severe dental anxiety is through a referral to Child and Adolescent Mental Health Services (CAMHS). However, acceptance criteria state that only 'children and young people whose symptoms of distress and degree of social and/or functional impairment are severe' can access these services. As a result of exponentially increasing demands on CAMHS, long waiting times present a further barrier to the management of dentally anxious children. Alternative, non-psychologist led interventions may therefore offer a more realistic and economic option.

### Dental team-led CBT

For patients with less severe dental anxiety, an intervention provided by a dentist or dental team member may be more appropriate. However, in the UK there are currently no dental team-led CBT interventions for adolescents. Indeed, there are few reports in the wider literature of any examples of dentist-led CBT. Interestingly, a recent study conducted in Iran described how a 20-minute CBT intervention was developed for use with children aged

3–6.5 years.<sup>24</sup> The intervention, which was designed to be delivered by a dentist, contained elements of play, rapport-building, modelling, relaxation, providing information and changing attitudes about visits to a dentist.

In a randomized study comparing the effectiveness of inhalation sedation, the CBT intervention and 'normal' care (control), it was found that both inhalation sedation and the CBT intervention significantly lowered anxiety with no difference found between them. However, the sample size was small, with only 15 participants per group, and it may be argued that the children were too young to engage fully in the level of cognitive processing necessary for CBT.

### Guided self-help CBT

A number of self-help books for adolescents with dental anxiety have been produced based on the principles of CBT. However, it is only relatively recently that a self-help resource based on the principles of CBT, called 'Your teeth you are in control' has been specifically designed for delivery by dental practitioners.<sup>25</sup> This resource, which is aimed at young people aged 9–16 years with mild to moderate dental anxiety, has been developed by a UK multidisciplinary research group with input from adolescents, parents and dental team members to ensure that the perspectives and needs of all stakeholders were taken into account. Alongside the guide for young patients, there are accompanying materials for parents and dental team members (Figure 1). The guide for young people incorporates three core areas:

1. Information on the dental team and basic procedures;
2. Suggestions for coping tools and strategies that young people can use;
3. Interactive activities including a 'message to dentist', a stop signal signed agreement, anxiety scores and self-reflection on how things went.

A manual and online training package ([www.lltff.com/dental](http://www.lltff.com/dental)) have been developed to support practitioners in the implementation of these resources; all materials are free. In a recent study, 48 new patients (aged 9–16 years) who attended a community dental service or a paediatric dental hospital in the UK were provided with this resource prior to commencing treatment. At baseline, dental anxiety and health-related quality of life were assessed using the Modified Child Dental Anxiety Scale (MCDAS) and Child Health Utility 9D, respectively. During two subsequent treatment visits the clinician and the young person, together with his/her parent, used the resources and worked to an agreed plan. At the end of the fourth visit, dental anxiety and health-related quality of life were re-assessed. Qualitative interviews were also used to explore acceptability and feasibility of the CBT intervention from the perspectives of adolescents, parents and dental team members. The use of the resource resulted in statistically significant reductions in dental anxiety and improvements in health-related quality of life. It was also received positively by patients, parents and clinicians. However, in order to provide high level evidence for the short and longer term effectiveness of this resource in reducing dental anxiety, future research is needed in the form of a randomized controlled trial.

## Case report

To demonstrate how a guided self-help CBT approach works in a clinical setting, the experience of treating a dentally anxious teenage boy, in a dental hospital paediatric dentistry clinic, is described.

### Leo's story

Leo was a fit and healthy 14-year-old boy who was referred by his general dental practitioner for the management of dental caries in three

permanent molars. The practitioner's referral letter suggested that the only way to treat Leo would be under general anaesthesia:

*'...the treatment was not possible in the surgery as the patient didn't open his mouth for injection and he was really uncooperative. I would be grateful if you would consider the option of performing the treatment under general anaesthesia.'*

Following an initial assessment, Leo was booked for simple prevention treatment (fissure sealants) under inhalation sedation, with the hope that he would respond well to this pharmacological approach. Unfortunately, after two visits, Leo was still not able to accept the mask, saying that he couldn't breathe through his nose.

*Learning point:* dentally anxious children may use a variety of excuses to avoid going to the dentist or accepting treatment. They may say that they are ill, or they no longer have any dental pain, or simply that they can't breathe or swallow.

Leo's mother, understandably, started to become very frustrated by the lack of progress, and felt that Leo was being deliberately difficult. The relationship between mum and son became increasingly tense.

*Learning point:* parents and clinicians may fail to appreciate the child's underlying anxiety, and think that they are being awkward or naughty. This frequently results in rising frustration and a breakdown in communication.

At this point Leo was recruited to the CBT study that was ongoing in the unit. He was asked to complete the MCDAS and scored 26 out of a maximum of 40. Leo was then introduced to Jen (a specialist trainee in paediatric dentistry) and was told Jen would see him at every subsequent visit. He was given 'Your teeth you are in control' the self-help CBT resource to look at prior to his next appointment and was encouraged to think about what he was worried about and what coping tools he could draw on. He was reassured that he would not need an injection or sedation at this next visit. His mum was also given the accompanying guide for parents to give her some tips for supporting a dentally anxious child.

*Learning point:* it is essential that children see the same clinician and, ideally,

dental nurse, at each visit to establish a good level of trust. It is also important to state exactly what will be involved at the next visit, and stick to that plan. Initially, clinicians may feel 'awkward' about introducing the idea of CBT, but scripts and videos are available as part of the online dental team training resources [www.lltff.com/dental](http://www.lltff.com/dental) to help overcome these barriers. With practice, clinicians will develop an approach with which they feel most comfortable.

When Leo next attended he immediately announced 'I am not having 'owt [nothing] done today.' Jen confirmed that this was fine and it was his decision as to what was and was not done. A discussion then followed based on the interactive section in the 'Your teeth you are in control' resource, to explore what Leo found particularly worrying and what unhelpful thoughts he may have. He reported that he was scared of needles and didn't want to feel any loss of control. He disclosed a recent event where his drink had been spiked and he had ended up in an Accident and Emergency Department, where 'they kept sticking needles into me and I couldn't stop them'. Leo therefore worried that if he had sedation or general anaesthesia for his dental treatment he would not be in control of what was happening. He also described not sleeping well leading up to this dental appointment and being angry with his mum. Jen was then able to address Leo's unhelpful thoughts and behaviours and agreed a plan. Leo's mum would not tell Leo about his dental appointment until the actual day, so that he would not have sleepless nights beforehand. Leo in turn agreed not to be verbally abusive to his mum in relation to the dental visit. Appointments would be scheduled close together to maintain Leo's confidence. Leo then agreed to have a temporary dressing placed in his lower left second permanent molar (without local anaesthesia) and underwent needle desensitization by looking at the local anaesthetic syringe and unshathed needle. He played with a stress ball during treatment and used his agreed stop signal of putting his hand up. He was very proud of himself after this visit and was invited to reflect on how it had gone and what his reward to himself was going to be. The

plans for the next treatment visit were discussed and agreed.

*Learning point:* there is an interactive section in 'Your teeth you are in control' which asks the young person to write a 'message to dentist' including what they are worried about, what treatment they are happy to accept and what they are not. A stop signal is agreed and signed by both the patient and the dentist giving the child a greater sense of control and, consequently, reduced levels of anxiety. This process provides a 'structure' for the dentist to get to know his/her patient better, and to identify and address the unhelpful thoughts, feelings and behaviours, as well as any situational anxiety triggers that are specific to that child.

At his next visit, Leo was noticeably more positive and had read the 'Your teeth you are in control' resource that morning. Leo came in feeling positive. Although not keen to put the sedation mask on, he was reassured that the nitrous oxide would be turned down if he felt at all out of control. He was given a stress ball to play with and coped very well with a restoration under local anaesthetic. Jen and his mother praised him for his good progress and Leo was pleased with himself. He was encouraged to reflect on having the sedation and local anaesthetic and what aspects had been easy or difficult.

*Learning point:* following treatment, each patient is encouraged to reflect on what went well so that they build up a positive memory bank of dental experiences to draw upon in the future. Rewards are also important but these should certainly not be excessive or viewed as bribes. Planning a cinema trip, ordering a take-away or having a sleep-over are simple things that many children enjoy.

At Leo's last visit he accepted two restorations using local anaesthesia and inhalation sedation. His self-reported anxiety score, using the MCDAS, had reduced markedly from 26 to 17. Leo's mum felt that the CBT approach had been really useful as it had given her insight into Leo's dental anxiety. She had previously just thought he was being stubborn in refusing treatment and she had no idea of how to help him.

Leo was discharged back to the care of his own dentist, hopefully armed with the necessary coping skills and experiences to help him accept dental treatment in the longer term. For Leo, provision of sedation or general anaesthesia may or may not have allowed completion of the necessary dental treatment, but pharmacological approaches alone would not have managed his underlying dental anxiety.

## Conclusion

In summary, there are great opportunities for increased use of CBT interventions to reduce dental anxiety in children and young people. In particular, there is a need for guided or self-help approaches which do not require the services of clinical psychologists. However, further research is needed to evaluate the effectiveness, acceptability and longevity of the benefits of CBT in adolescents with dental anxiety.

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