

## EVIDENCE BASED TABLES

TABLE 2 - Studies examining the therapeutic approaches to reducing dental anxiety

Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>Getka &amp; Glass, (1992)</b></p> <p><i>Behavioral and Cognitive-Behavioral Approaches to the Reduction of Dental Anxiety</i></p> <p>Washington, USA</p> <p><b>Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>• 41 Pts: 19 Males, 22 Females</li> <li>• Mean age: 33.1</li> <li>• Inclusion criteria: i) DAS = 13+ and DFS = 4+ ii) no prescribed medication or in psychotherapy for stress or anxiety-related problems iii) at least one class 1 or class 2 carious lesion</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Dental Anxiety Scale (DAS):</b> A four-item measure of dental trait anxiety. Scores range from 4 (not anxious at all) to 20 (extremely anxious).</li> <li>• <b>Dental Fear Survey (DFS)</b> – measures 3 dimensions of anxiety: behavioural, physiologic, and cognitive</li> <li>• <b>Fear Thermometer (FT)</b> – assesses state anxiety by rating their current level of anxiety on a scale of 0-10.</li> <li>• <b>Cognitive assessment:</b> Pts' ratings of expected pain and of pain experienced were obtained using a scale from 1 to 10.</li> <li>• <b>Dental Self-Efficacy Scale (DSES):</b> Pt's predict their ability, on a scale from 0-10, their ability to perform 10 behaviours related to dental treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Behavioral treatment (BT)</i> (n=10)</li> <li>• <i>Cognitive-Behavioral Treatment (CBT)</i> (n=11)</li> <li>• <i>Positive Dental Experience (PDE)</i> (n=10)</li> <li>• <i>Waiting-list Control (WL)</i> (n=10)</li> <li>• Dental Treatment: restoration of a class 1 or class 2 carious lesion.</li> </ul>	<ul style="list-style-type: none"> <li>• BT &amp; CBT reported significant reduction in anxiety and expected pain; in addition, increased self-efficacy compared to PDE and WL.</li> <li>• CBT reported significantly higher levels of dental self-efficacy than BT.</li> <li>• BT, CBT &amp; PDE reported less experienced pain compared to WL.</li> <li>• <i>Follow-up (1 yr):</i> BT &amp; CBT reported significantly lower anxiety, greater current and future dental visits in comparison to PDE and WL</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Score: 12/12 (Excellent)</b></li> <li>• <b>Grade A Level – I</b></li> </ul>	<p>“Both (CBT and BT) procedures offer effective ways of reducing overall levels of dental anxiety, of enabling anxious patients to manage their anxiety during dental treatment, of reducing the incidence of debilitating thoughts and increasing the incidence of facilitative and self-regulatory thoughts, of reducing the expectation and experience of pain, and of increasing dental self-efficacy.”</p>

TABLE 2 - Continued

Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>Dailey, et al. (2002)</b></p> <p><i>Reducing Patients' State Anxiety in General Dental Practice: A Randomized Controlled Trial</i></p> <p>Wales, United Kingdom</p> <p><b>Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>• 119 Pts: 34.5% Males, 65.5% Females</li> <li>• Mean age: 41.3</li> <li>• Inclusion criteria: MDAS=5 on any question or minimum of 19/25.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Modified Dental Anxiety Scale (MDAS):</b> measures the Pt's underlying anxiety about specific dental procedures. Scored from 1 (not anxious) to 5 (extremely anxious)</li> <li>• <b>State-Trait Anxiety subscale (STAI-S)</b> – measures subject's current anxiety level.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Intervention</i> (n=60) – Dentist informed</li> <li>• <i>Control</i> (n=59) - Dentist non-informed</li> <li>• Dental Treatment: dental surgery (specific surgery performed was not indicated)</li> </ul>	<ul style="list-style-type: none"> <li>• Comparison between baseline and post-treatment showed a significant effect on a Pt's state anxiety on leaving the dental treatment when his/her pre-treatment assessment of dental anxiety was presented to the dentist.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Score: 12/12 (Excellent)</b></li> <li>• No follow-up</li> </ul> <p><b>Grade A Level – I</b></p>	<p>“Reduced state anxiety in patients who reported their dental anxiety status to their dentist in comparison with those who did not could have been due to two phenomena, dentist behaviour or patient beliefs about the situation.”</p>

TABLE 2 - Continued

Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>Lahmann, et al. (2008)</b></p> <p><i>Brief Relaxation versus Music Distraction in the Treatment of Dental Anxiety: A Randomized Controlled Clinical Trial</i></p> <p>Witten, Germany</p> <p><b>Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>87 Pts: 39 Males, 48 Females</li> <li>Mean age 37.8</li> <li>Participants acknowledged dental anxiety</li> <li>Exclusion criteria: (i) 18+ years old (ii) severe somatic or psychiatric disease (iii) use of psychoactive drugs.</li> </ul>	<ul style="list-style-type: none"> <li><b>State-Trait Anxiety subscale (STAI-S)</b> – measures subject's current anxiety level.</li> <li><b>HAQ</b> – measures the intensity of dental anxiety.</li> </ul>	<ul style="list-style-type: none"> <li><i>Brief Relaxation (BR)</i> (n=29)</li> <li><i>Music Distraction (MD)</i> (n=28)</li> <li><i>Control (C)</i> (n=30) – Pts provided with no anxiety reducing treatment.</li> <li>Dental Treatment: simple carious lesion restored in a single session.</li> </ul>	<ul style="list-style-type: none"> <li>BR showed the greatest pre- to posttest anxiety reduction for State anxiety (STAI-S)</li> <li>MD showed significant reduction compared to C for STAI-S</li> </ul>	<ul style="list-style-type: none"> <li><b>Score: 12/12 (Excellent)</b></li> <li>Inclusion criteria did not have a cut off level for anxiety based on HAQ or STAI-S or the exhibition of dental avoidance behaviour.</li> <li>No follow-up</li> </ul> <p><b>Grade A Level - I</b></p>	<p>“ For the anxious patient who visits the dental practice voluntarily, BR can be a pragmatic, effective, and cost-saving method of facilitating dental treatment. “</p>

TABLE 2 – Continued

Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>De Jongh, et al. (1995)</b></p> <p><i>One-session Cognitive Treatment of Dental Phobia: Preparing Dental Phobics for Treatment by Restructuring Negative Cognitions</i></p> <p>Amsterdam, Netherlands</p> <p><b>Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>52 Pts: 25 Males, 27 Females</li> <li>Inclusion criteria: (i) age 18-65 (ii) DAS=15 + (extreme dental anxiety) (iii) capable of reading and speaking Dutch</li> </ul>	<ul style="list-style-type: none"> <li><b>Dental Cognition Questionnaire (DCQ):</b> measures frequency and believability of negative cognitions related to dental treatment.</li> <li><b>Dental Anxiety Scale (DAS):</b> A four-item measure of dental trait anxiety. Scores range from 4 (not anxious at all) to 20 (extremely anxious).</li> <li><b>Exit Questionnaire:</b> evaluates Pt's satisfaction about the intervention and their visit to the clinic.</li> </ul>	<ul style="list-style-type: none"> <li><i>Cognitive restructuring intervention (C.R.I.)</i> (n=15)</li> <li><i>Information intervention (I.I.)</i> (n=14)</li> <li><i>Waiting list control (WL)</i> (n=23)</li> <li>Dental Treatment: Dental check-up was carried out by 5 different dentists</li> </ul>	<ul style="list-style-type: none"> <li>Immediately after C.R.I 33% showed significant improvement on the DAS; this number increased to 93% after 1 year.</li> <li>DCQ believability scores in the C.R.I. condition decreased significantly, compared to II and WL; at 1 month follow-up this significance was still observed.</li> </ul>	<ul style="list-style-type: none"> <li><b>Score = 11/12 (very good)</b></li> <li>No WL control follow-up</li> <li>CRI &amp; II conducted by therapists differing in sex and background</li> </ul> <p><b>Grade A Level – I</b></p>	<p>“A single session of cognitive restructuring can be effective to help dental phobics to restructure their existing patterns of negative cognitions and to reduce anxiety symptomatology.”</p>

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Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>Moore, et al. (2002)</b> A 3 year comparison of dental anxiety treatment outcomes: hypnosis, group therapy and individual desensitization vs. no specialist treatment</p> <p><b>Moore, et al. (1996)</b> Hypnosis Compared with Group Therapy and Individual Desensitization for Dental Anxiety</p> <p>Aarhus, Denmark</p> <p><b>Restricted Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>• 206 Pts (2002); 174 Pts (1996)</li> <li>• Inclusion criteria: (i) DAS score 15+ (extreme anxiety) (ii) need for dental treatment (iii) comparable number of men and women (iv) ages 18 – 65</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Dental Anxiety Scale (DAS)</b> – A four-item measure of dental trait anxiety. Scores range from 4 (not anxious at all) to 20 (extremely anxious).</li> <li>• <b>Dental Fear Survey (DFS)</b> – measures 3 dimensions of anxiety: behavioural, physiologic, and cognitive</li> <li>• <b>Dental Beliefs Survey (DBS)</b> – evaluates patient beliefs and security in relating to dentists</li> <li>• <b>Geer Fear Scale (GFS)</b> – measures existence of other phobias and fear</li> <li>• <b>State-Trait Anxiety subscale (STAI-T)</b> – measures general trait anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Hypnotherapy (HT)</i> (n=25)</li> <li>• <i>Group therapy (GT)</i> (n = 30)</li> <li>• <i>Systematic Desensitization (SD)</i> (n= 68): (i) Video SD (ii) Clinical rehearsal SD</li> <li>• <i>Waiting-list Control (WL)</i> (n=83, 2002; n=51, 1996) – Pts provided with no anxiety reducing treatment or dental treatment</li> <li>• Dental Treatments: 2 routine dental restorative treatments &amp; a 3<sup>rd</sup> choice of a highly feared procedure.</li> </ul>	<ul style="list-style-type: none"> <li>• All interventions significantly reduced dental anxiety (DFS) and increased trust (DBS) within groups and compared to the control after the experimental therapy.</li> <li>• HT showed greater reduction in DFS scores than for rehearsal SD</li> <li>• <i>Follow-up (1yr)</i> - went on to see private dentists</li> <li>• <i>Follow-up (3yr)</i> – Intervention subjects were better dental care attenders (12/22 HT, 16/23 GT, 19/26 video SD, and 17/29 rehearsal SD) than controls (30/65). All intervention groups still had significant reduction in DFS and increased DBS. Control group also showed reduction in DFS, but to a lesser extent.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Score = 11/12 (very good)</b></li> <li>• At least 50% of original subjects in HT and GT dropped out either during therapy or did not go on to private dentists within 1 year after treatment.</li> <li>• Restricted randomization due to the consecutive assignment of Pts to the HT and GT.</li> </ul> <p><b>Grade A Level – I/Level II-1</b></p>	<p>“Anxious patients can successfully start and maintain regular dental treatment on their own, despite years of avoidance due to extreme anxiety. However, it also appears that these patients had less success in reducing dental anxiety and improving beliefs about dentists long-term than did patients treated at the specialist clinic with psychological strategies”</p> <p>“Restructuring of counterproductive thoughts through psychological counseling (cognitive therapy) is essential to help many odontophobic patients....”</p> <p>“Hypnosis may be an important treatment method for some odontophobic individuals in reducing dental anxiety, inspite of potential limitations due to <i>transference</i>.”</p>

TABLE 2 - Continued

Author & Study Design	Population	Definition & Measure of Disease	Intervention, Control & Dental Treatment	Outcome	Critical Appraisal & CTF Rating	Author's conclusion
<p><b>Thom &amp; Sartory (2000)</b></p> <p><i>Comparison between one-session psychological treatment and benzodiazepine in Dental Phobia</i></p> <p>Witten, Germany</p> <p><b>Restricted Randomized Controlled Trial</b></p>	<ul style="list-style-type: none"> <li>50 dental phobic patients: 24 Males 26 Females</li> <li>Inclusion criteria: i) Patients who had been referred to the Dept of Dental Surgery at Witten-Herdecke University ii) Those who indicated an anxiety toward dental treatment of at least 90/100 iii) All pts required dental surgery</li> </ul>	<ul style="list-style-type: none"> <li><b>Dental Anxiety Scale (DAS)</b> – A four-item measure of dental trait anxiety. Scores range from 4 (not anxious at all) to 20 (extremely anxious).</li> <li><b>Dental Fear Survey (DFS)</b> – measures 3 dimensions of anxiety: behavioural, physiologic, and cognitive</li> <li><b>Dental Cognition Questionnaire (DCQ):</b> measures frequency and believability of negative cognitions related to dental treatment.</li> <li><b>State-Trait Anxiety subscale (STAI-T)</b> – measures general trait anxiety</li> </ul>	<ul style="list-style-type: none"> <li><i>PYSCH</i> (n=20)</li> <li><i>PHARM</i> (n=20).</li> <li><i>Control</i> (n=10) – Pts provided with no anxiety reducing treatment or dental treatment</li> <li>Dental Treatment: 42 needed extraction; the rest received endodontic or other surgical treatments.</li> </ul>	<ul style="list-style-type: none"> <li>Both treatments led to anxiety reduction during surgery than did the control condition.</li> <li><i>PYSCH</i> patients showed further improvement up to the 2 month follow up, whereas <i>PHARM</i> patients showed a relapse after dental treatment</li> <li>Follow up:70% of <i>PYSCH</i> patients continued dental treatment compared with 20% of <i>PHARM</i> and 10% of control.</li> </ul>	<ul style="list-style-type: none"> <li><b>Score = 11/12 (very good)</b></li> <li>Dropout rate for Control was larger than for <i>PHARM</i> and <i>PSYCH</i> groups. This creates a potential sampling bias in the results.</li> <li>Compliance with written instructions was not monitored.</li> </ul> <p><b>Grade A Level – I/Level II-1</b></p>	<p>“Both psychological treatment and benzodiazepines had an anxiety-reducing effect during dental treatment, leading to further clinical improvement in the case of the former and to a subsequent relapse in the case of the latter....the generally high avoidance and dropout rate in dental phobic patients requires further investigation.”</p>

TABLE 3 – Interventions used in Getka and Glass (1992), Dailey et al. (2002), Lahmann et al. (2008), Moore et al. (1996), Moore et al. (2002), Thom and Sartory (2000) and De Jongh et al. (1995).

Article	Intervention Description
<p><b>Getka and Glass (1992)</b></p>	<ul style="list-style-type: none"> <li>• <b>Behavioural Treatment (BT)</b> <ul style="list-style-type: none"> <li>- Audiotaped relaxation training exercise followed by videotape viewing of models receiving routine dental treatment as well as gradual exposure videotape.</li> <li>- If anxiety was experienced, the video was stopped and subjects returned to a relaxed state using the learned relaxation technique.</li> <li>- In the last two sessions, self-paced <i>in vivo</i> practice in an actual dental reception area and dental chair was used.</li> </ul> </li> <li>• <b>Cognitive-Behavioural Treatment (CBT)</b> <ul style="list-style-type: none"> <li>- Quiet relaxation training for managing physiological aspect of dental anxiety and viewed the same gradual exposure videotape as BT.</li> <li>- 10 min relaxation training and attention-focusing techniques (ex. pleasant imagery)</li> <li>- Positive coping self-statements were generated for negative thoughts that occurred while watching the videotape procedures.</li> <li>- Similar to BT, self-paced <i>in vivo</i> practice in an actual dental reception area and dental chair was used in the last two sessions.</li> </ul> </li> </ul> <p><b>Positive Dental Experience (PDE):</b></p> <ul style="list-style-type: none"> <li>• Subjects were treated by dentists identified by their peers as effective in treating anxious patients using a warm, caring, relaxed and understanding approach.</li> </ul>
<p><b>Dailey, et al. (2002)</b></p>	<ul style="list-style-type: none"> <li>• <b>Intervention</b> <ul style="list-style-type: none"> <li>- Dentist informed of the Pt's high anxiety: Pts handed MDAS screening form to the dentist for initialing, whereas the control handed the MDAS forms to the receptionist.</li> </ul> </li> </ul>
<p><b>Lahmann, et al. (2008)</b></p>	<ul style="list-style-type: none"> <li>• <b>Brief Relaxation (BR)</b> <ul style="list-style-type: none"> <li>- Employed Functional Relaxation: Pts perform minute movement of small joints during relaxed expiration and focuses their attention to theses movements.</li> <li>- Short written instructions followed by brief explanation by the dentist before dental treatment regarding Functional Relaxation were given.</li> </ul> </li> <li>• <b>Music Distraction (MD)</b> <ul style="list-style-type: none"> <li>- Passive relaxation administered during treatment where Pts listen to relaxing music during a stressful dental procedure.</li> </ul> </li> </ul>

TABLE 3 – Continued

Article	Intervention Description
Moore, et al. (1996, 2002)	<ul style="list-style-type: none"> <li>• <b>Hypnotherapy (HT)</b> <ul style="list-style-type: none"> <li>- Pts learned to restructure negative thoughts, muscle relaxation training using a 12 min cassette tape, and dissociation of past traumatic dental experiences.</li> </ul> </li>   <li>• <b>Systematic Desensitization (SD)</b> <ul style="list-style-type: none"> <li>(i) <i>Video SD</i> <ul style="list-style-type: none"> <li>- Progressive muscle relaxation training using a 12 min cassette tape and successive exposure of eight 30s videotape with increasing anxiety provoking dental situations. Scenes were interrupted for relaxation pauses.</li> </ul> </li> <li>(ii) <i>Clinical Rehearsal SD</i> <ul style="list-style-type: none"> <li>- Simulated exposure to threatening dental situations or instruments in gradual steps combined with tension awareness training, hand-signal pauses and breath control.</li> </ul> </li> </ul> </li>   <li>• <b>Group therapy (GT)</b> <ul style="list-style-type: none"> <li>- 6 Pts/group met for seven 2-h sessions. Info given about dental anxiety, assertiveness and relaxation training, and video desensitization.</li> </ul> </li> </ul>
Thom & Sartory (2000)	<ul style="list-style-type: none"> <li>• <b>PYSCH</b> <ul style="list-style-type: none"> <li>- An audiotaped instruction for progressive muscle relaxation with written instructions was used daily 1 week before the treatment session.</li> <li>- Treatment session was 1.5 hr and involved information about anxiety, progressive muscle relaxation, exposure to anxiety situations and anxiety management training.</li> <li>- Dysfunctional thoughts related to dental treatment were replaced with anxiety relieving thoughts.</li> <li>- At the end of the session Pts received written instructions summarizing all the stress management procedures and encouraged to practice them daily until the surgery appointment.</li> </ul> </li>   <li>• <b>PHARM</b> <ul style="list-style-type: none"> <li>- Patients received midazolam hydromaleate, 30 minutes before surgery.</li> </ul> </li> </ul>

TABLE 3 – Continued

Article	Intervention Description
<p><b>De Jongh, et al. (1995)</b></p>	<ul style="list-style-type: none"> <li>• <b>Cognitive Restructuring Intervention (CRI)</b> <ul style="list-style-type: none"> <li>- Pts learned to recognize and change negative thoughts about themselves or what will happen during dental treatment and to realize that there are several different ways to look at a situation.</li> <li>- Pt's assumptions were challenged and alternative ways to look at the situation was introduced.</li> </ul> </li>   <li>• <b>Information Intervention (II)</b> <ul style="list-style-type: none"> <li>- General information was given to the patient concerning oral health, preventative behaviours and dental treatment.</li> </ul> </li> </ul>