

A Comprehensive Analysis of the Evidence on Non-pharmacological Interventions in the Management of Dental Anxiety: A Linked Series of Systematic Reviews

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Abstract

Background: Dental anxiety has been identified as a significant and common problem in both children and adults and is considered an obstacle in the provision of quality dental care by dental care providers. It is reported that one in six adults suffer from some form of dental anxiety and in children the prevalence estimates range between 5.7% and 19.5%. Patients with dental anxiety tend to neglect dental care which poses a problem for both dentists and patients. Dental anxiety has long been recognised as a source of serious problem in providing dental services to the patients. Terms such as dental fear, dental phobia, and dental anxiety are often used synonymously and do not have agreed clinical definitions. Dental anxiety leading to avoidance of dental treatment is common and appears to be associated strongly with clinically significant deterioration of oral and dental health. Pain or fear of pain is a known primary source of anxiety, as well as a major obstacle to seeking dental care. Dental injection was found to be the most powerful anxiety-provoking stimulus, followed by the dental drill and the sight and sensation of a dental local anaesthetic injection.

Strategies for managing dental anxiety include, but are not limited to: explanation of the treatment procedure, pharmacological strategies involving the use of benzodiazepines and antidepressants, biofeedback, hypnosis, behavioural interventions and relaxation. Medications provide only short term cost effective solutions; but there are few long term benefits with a greater rate of relapse, and an increased patient risk due to the potential for serious drug interactions or overdose. Behavioural management is found to be superior to anxiolytic drug therapy, and dentally anxious patients report that they prefer nonpharmacological interventions. No comprehensive systematic reviews exist encompassing all pharmacological nonpharmacological managements for dental anxiety in paediatric and adult patients undergoing various dental treatments/procedures in various dental settings. The series of reviews aimed to identify and synthesise the best available evidence on all nonpharmacological interventions for managing dental anxiety in paediatric and adult patients in dental situations.

Objectives: The overall objective of this series of systematic reviews was to identify and synthesise the best available effective, meaningful and/or appropriate evidence on all non-pharmacological interventions in the management of DA and dental fear in paediatric and adult patients.

Review methods: The series of systematic reviews included both paediatric patients from any young age and adult patients of all age groups. The reviews excluded people with special needs and disabled people. All nonpharmacological interventions were examined. The primary outcome of interest was dental anxiety and other outcomes such as pain, dental avoidance and satisfaction were only reported if data on dental anxiety was reported. All types of study designs were considered for inclusion in the review.

Results: Overall, 288 studies were included in the series of reviews that examined various nonpharmacological interventions. There was moderate to strong evidence for interventions such as aromatherapy, atraumatic restorative treatment, audiovisual including music and imagery, behaviour management techniques, utilisation of new technology, hypnosis and cognitive behaviour therapy. Most of the behaviourally oriented treatments included components based on systematic desensitisation, modelling, guided imagery and use of relaxation to weaken the fear response during gradual exposure to treatment and alleviate dental anxiety. Dental anxiety management should be considered an integral part of clinical practice, as the prevalence is high but goes unrecognised. Interventions should be tailored according to patients' needs considering their degree of anxiety, age, and cooperation. In addition, dentists should take into account their own experience and expertise, and the clinical context. Overall, patients with mild to moderate dental anxiety can be nonpharmacologically managed using various psychotherapeutic interventions. However, in cases of high levels of dental anxiety and/or dental phobia a combination of nonpharmacological management approaches can be utilised.

Implications for practice: Based on the available evidence, a summary of recommendations is provided along with clinical decision making algorithms to manage dental anxiety in patients.

Implications for research: Reviewed evidence suggests that there is no need to conduct further studies on the majority of the interventions as there is enough evidence base to support their use. However, research on the feasibility aspect is lacking for many of these interventions and there is a lack of research in this field on how to implement these interventions in time poor settings as some of the advanced nonpharmacological techniques require time, effort, training and involve costs both to the dental practitioner and the patient.

Thesis Declaration

I certify that this work contains no material that has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief contains no material previously published or written by another person, except where due reference has been acknowledged in the text.

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