Applied behavioural analysis principles in dentistry: techniques to overcome dental fear, improving attendance and compliance

Dental fear is a global, socially important health concern, impacting quality of life, psychological well-being, and oral and general health. Avoidance behaviour influences patients' attendance, with pain often the antecedent catalyst for accessing care.

Applied behaviour analysis (ABA) studies the application of the principles, methods, and procedures of the science of behaviour as applied systematically to improve socially significant behaviour.

Dental teams using behavioural assessment can assess dental fear, its aetiology and nature, to identify apprehensive patients. Dental fear should be acknowledged, discussed and evaluated. Effective communication increases patient satisfaction, co-operation and compliance, and reduces dental fear. Assess, advise, agree, assist, arrange. ABA strategies help patients to resolve dental fear through coping and increased self-efficacy, but require willing and motivated patients. Goals should be set, with patients' self-identified barriers removed.

Behaviour modification therapies aim to change undesirable behaviours through learning, behavioural and cognitive strategies. Cognitive behavioural therapy (CBT) techniques focus on thought and behavioural patterns to help patients identify unproductive or self-defeating thoughts, and is currently the most accepted and successful psychological treatment for anxiety and fear. Patients should be aided during treatment via coping to restructure perceptions of dental treatment with perceived control and predictability. Anxiety can affect memory, resulting in catastrophising and remembering increased pain after treatment.

Dental fear can be managed with behavioural and/or pharmacological intervention. It is worthwhile to convince patients via role induction to participate actively in treatment as this decreases pain perception, improves mood and focuses attention away from pain. Dentists benefit more from non-pharmacological approaches, resulting in highly satisfied patients and strong practices.

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The conventional inferior alveolar nerve block: is there a more predictable alternative?

Précis: The intra-osseous technique and buccal infiltration with articaine are effective alternative methods to the conventional inferior alveolar nerve block for achieving mandibular pulpal anaesthesia.

Abstract

Statement of the problem: The conventional inferior alveolar nerve block is considered the gold standard technique for achieving mandibular pulpal anaesthesia. This technique is considered to be technically challenging, with significant failure rates. Other alternative techniques may be more effective, and easier to administer.

Purpose of the study: The aim of this review was to investigate whether or not new local anaesthetic techniques have lessened the need for the conventional inferior alveolar nerve block.

Materials and methods: A review of the literature was conducted by completing an electronic search on PubMed using key words "local anaesthesia", "mandible" and "success rates", populating a list of articles for analysis. Key papers and books that were unavailable electronically were also manually searched to ensure a comprehensive overview. The different techniques were then compared under several headings including success rates, anaesthesia onset times and complications.

Results: There are several randomised controlled trials (RCTs) evaluating the primary methods of achieving pulpal anaesthesia in the mandible. The heterogeneity of the literature makes it difficult to conduct a systematic review and meta-analysis on the topic. The RCTs available are of a IIb evidence base, due to small sample sizes, according to the Oxford Centre for Evidence-Based Medicine, and consequentially grade "B" recommendations may be made for clinical practice. The literature describes how the intra-osseous and buccal infiltration techniques have superior success rates and onset times, in combination with less discomfort and fewer complications, than the alternatives available.

Conclusion: Further investigations into local anaesthetic efficacy would benefit from the introduction of standardised testing methods, reducing heterogeneity of the literature. The intra-osseous technique and buccal infiltration with 4% articaine are effective alternative methods to the inferior alveolar nerve block for achieving mandibular pulpal anaesthesia.

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