Behavioural interventions could reduce dental anxiety and improve dental attendance in adults

Do behavioural interventions contribute to anxiety reduction and result in significantly improved dental attendance in adults?

Kvale G, Berggren U, Milgrom P. *Dental fear in adults: a meta-analysis of behavioral interventions. Commun Dent Oral Epidemiol 2004; 32: 250–264*

Data sources PubMed and Psychlit were searched from 1966 to 2001. Reference lists from retrieved articles were also examined for more studies. Study authors were contacted for additional information where necessary.

Study selection For inclusion, an article had to satisfy the following criteria: the study sample should be adult subjects with documented high dental fear or avoidance; outcome measures should include at least self-reported changes in dental fear; outcomes should preferably include changes in dental behaviour or attendance post-treatment.

Data extraction and synthesis Studies were categorised into 3 behavioural interventions: behaviourally oriented approaches, cognitively oriented approaches and educational interventions. Attendance measures were grouped into <6 months, 6 months to 4 years after the intervention and longer term. The effect size (ES) for self-reported dental anxiety and for dental attendance post-treatment was calculated. Homogeneity tests were conducted.

Results The search identified 80 articles, of which 38 met the inclusion criteria. The calculated ES for self-reported anxiety after intervention indicated positive changes in 36 out of the 38 studies and no change in two. The overall ES was 1.78 [95% confidence interval (CI), 1.67–1.89]. The proportion of subjects with post-treatment dental visits in the first 6 months varied between 50 and 100%. The overall ES for attendance at dental visits, weighted by sample size, was 1.4 (95% CI, 1.27–1.58). The homogeneity analysis indicated that the studies could not be adequately described in one ES. The reported proportion of subjects with a dental visit between 6 months and 4 years post-treatment varied from 48 to 100%. The overall weighted ES for visiting the dentist, adjusted for drop-outs in the studies, was 1.17 (95% CI, 0.99–1.35).

Conclusions Despite extensive heterogeneity, changes in self-reported anxiety represented a medium to large ES. Patients signing up for a behavioural intervention for dental fear can be expected to report a significant reduction in their fear, and this effect generally seems to be lasting. Mean long-term attendance (>4 years after treatment) was 77%.

Commentary

The problem of dental anxiety and avoidance is an important issue in dental care and poses a challenge to the dental profession. A constantly growing body of literature refers to the issue of dental fear in adults and to the research of possible treatment modes for the highly fearful patient. The meta-analysis carried out by Kvale *et al.* is a most welcome addition to the existing literature in this field.

The analysis includes studies that focus on behavioural interventions for the treatment of dental fear: behaviourally oriented approaches (relaxation, biofeedback, behaviour therapy, systematic desensitisation, participant modelling, stress inoculation training

and hypnosis), cognitively oriented approaches and educational interventions. The paper summarises the changes in subjects' self-reported dental anxiety and dental attendance post-treatment, and analyses the efficacy of the applied treatments. All data are comprehensively summarised in tables that allow the reader to follow and compare the results presented by the different studies. The meta-analysis shows that, despite significant heterogeneity, all studies report reductions in self-reported anxiety and all calculated estimations of ES indicate positive changes.

The paper mentions several problems when evaluating the efficacy of different treatment modes for dental fear: (i) the lack of a common standard across the studies for estimating the magnitude of dental fear; (ii) the lack of a standard endpoint; (iii) the lack of data regarding drop-out and attrition in many of the studies. These points are important, since research shows that the success rate of behavioural interventions for dental fear is by no means absolute.

An intriguing issue in the treatment of dentally anxious patients is to define the factors that enable the patient to undergo emotional and behavioural changes and reduce high, maladaptive levels of anxiety to normal, accepted levels of stress that will allow routine dental treatment. Recent data suggest that a secure attachment pattern is significant in the individual's ability to modulate this fear when later exposed to a corrective emotional experience.¹ Furthermore, behaviour therapy cannot solve all the patient's problems. Some anxious patients do not respond to modification and cannot have dental treatment in spite of all efforts. Initial identification of patients likely to fail behaviour modification treatment for dental fear is important to reduce involvement time and to refer patients to other possible treatment modes.^{2–4}

In spite of its limitations, behaviour interventions do have a proved positive effect on dental fear, as shown by this meta-analysis. They should, therefore, be incorporated in any treatment of highly fearful patients.

Practice point

- Behavioural interventions have a positive effect on dental fear, and should, therefore, be incorporated in any treatment of highly fearful patients.

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