

RESEARCH SUMMARY

Guideline implementation in Scotland

Effectiveness of strategies to disseminate and implement clinical guidelines for the management of impacted and unerupted third molars in primary dental care, a cluster randomised controlled trial **M. Bahrami, C. Deery, J. E. Clarkson, N. B. Pitts, M. Johnston, I. Ricketts, G. MacLennan, Z. J. Nugent, C. Tilley, D. Bonetti and C. Ramsay** *Br Dent J* 2004; 197: 691–695

Objective

To investigate the effectiveness and cost-effectiveness of different guideline implementation strategies, using the Scottish Intercollegiate Guidelines Network (SIGN) Guideline 42 'Management of unerupted and impacted third molar teeth' (published 2000) as a model.

Design and subjects

A pragmatic, cluster RCT (2x2 factorial design). Sixty-three dental practices across Scotland. Clinical records of all 16–24-year-old patients over two, four-month periods in 1999 (pre-intervention) and 2000 (post-intervention) were searched by a clinical researcher blind to the intervention group. Data were also gathered on the costs of the interventions.

Interventions

Group 1 received a copy of SIGN 42 Guideline and had an opportunity to attend a postgraduate education course (PGEC). In addition to this, group 2 received audit and feedback (A and F). Group 3 received a computer aided learning (CAL) package. Group 4 received A and F and CAL.

Principal outcome measurement

Proportion of patients whose treatment complied with the guideline.

Results

The weighted *t*-test for A and F versus no A and F ($P=0.62$) and CAL versus no CAL ($P=0.76$) were not statistically significant. Given the effectiveness results (no difference) the cost effectiveness calculation became a cost-minimisation calculation. The minimum cost intervention in the trial consisted of providing general dental practitioners (GDPs) with guidelines and the option of attending PGEC courses. Routine data which subsequently became available showed a Scotland-wide fall in extractions prior to data collection.

Conclusion

In an environment in which pre-intervention compliance was unexpectedly high, neither CAL nor A and F increased the dentists' compliance with the SIGN Guideline compared to mailing of the guideline and the opportunity to attend a postgraduate course. The cost of the CAL arm of the trial was greater than the A and F arm. Further work is required to understand dental professionals' behaviour in response to guideline implementation strategies.

IN BRIEF

- Systematic reviews of implementation trials in medicine have shown that implementation strategies are not effective under all circumstances and few studies have investigated their effectiveness in dentistry.
- There is a need to find effective and cost effective implementation strategies to optimise the integration of evidence into current dental practice.
- In this sample of Scottish general dental practitioners' adherence to the SIGN Guideline of the management of impacted and unerupted third molars was high.
- There is no simple answer to getting research evidence into practice.

COMMENT

For many years researchers have been investigating behaviour change. The principal focus of this research activity has been to understand the factors that influence patients' behaviour and identify the ways in which change can be promoted. What does the evidence tell us about behaviour change? A substantial social science literature has identified that behaviour change is most often a prolonged and complex process which is influenced by an array of personal, social and environmental determinants. Evaluation of health education interventions have demonstrated limited impact on achieving sustained change in behaviour. What is the relevance of this to understanding change in the clinical behaviours of health professionals?

Bahrami and colleagues have undertaken an ambitious and challenging investigation of the effectiveness of different strategies to promote dental practitioners' adherence to clinical guidelines. The study demonstrated no effect of computer aided learning (CAL) or involvement in Audit and Feedback (A and F) compared with simply mailing out the guideline and inviting practitioners to attend a postgraduate course. This study highlights a range of important issues for research into evidence-based dentistry. It is interesting to note the difficulties the authors encountered in recruiting and retaining practitioners in the study. Of the 565 practices that were initially invited to participate in the study, only 47 practices volunteered and completed all stages of the study. As discussed by the authors, these practitioners are more likely to be highly motivated and well informed. The difficulties of involving general dental practitioners in primary dental care research is an on-going challenge.

This study focused on the adherence to clinical guidelines on the management of impacted and unerupted third molars. At baseline, high levels of compliance to these guidelines was found. It would be interesting to see how effective the different interventions might have been with other more contentious guidelines such as the forthcoming recommendations on recall intervals. The use of CAL packages in professional education and training is increasingly popular. The results of this study question the effectiveness of this approach and highlight the significant costs involved in using this hi-tech option.

As the authors highlight, more detailed research is needed to investigate in depth the range of factors that influence clinical behaviour in primary dental care settings. This knowledge can then be used to develop and evaluate innovative and cost effective methods of promoting evidence-based practice. The challenge ahead is how to make the evidence-based choices the easier choices.

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