

RESEARCH SUMMARY

Struggling with denture design

Why do dentists struggle with removable partial denture design? An assessment of financial and educational issues

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Aim

Published studies in the international dental literature demonstrate that the quality of prescription and fabrication of cobalt-chromium removable partial dentures (CCRPDs) by general dental practitioners frequently fail to comply with ethical and legal requirements. The reasons cited for this in the past have broadly related to either financial or educational matters. The aim of this investigation is to determine the effect of financial and educational factors on the quality of CCRPD design and fabrication by general dental practitioners.

Materials and methods

This investigation was completed in two parts. (1) A pre-piloted pro-forma was distributed to a number of dental laboratories throughout the UK and Ireland. These sought information relating to the quality of written instructions for CCRPDs received by these laboratories, and details of the remunerative scheme under which they were being provided. Three categories of remunerative scheme were considered, private CCRPDs in Ireland, private CCRPDs in the UK, and CCRPDs being provided by salaried NHS practitioners. (2) A pre-piloted questionnaire was distributed to vocational dental practitioners in the UK and Ireland. This sought information relating to their attitudes, opinions, and educational and clinical experiences of CCRPD design and fabrication.

Results

(1) Three hundred completed pro-formas were returned from dental laboratories, 100 of which related to each of the three remunerative schemes. Poor or no written instructions were provided in 47% (n = 47) of CCRPD cases funded privately in Ireland, 46% (n = 46) of CCRPD cases funded privately in the UK, and 50% (n = 50) of CCRPDs being provided by salaried NHS practitioners. (2) One hundred and seven completed questionnaires were returned from vocational trainees. Vocational dental practitioners had completed fewer CCRPDs during VT than in dental school (dental school: median = 4, inter-quartile range = 3 to 5; VT: median = 2, inter-quartile range = 1 to 4). One-fifth of respondents (n = 22) had not completed any CCRPDs during VT. Nine per cent of VT practices (n = 10) had a surveyor on their premises. Only 15% (n = 16) of respondents felt the time they had spent in VT had increased their confidence in the design of CCRPDs.

Conclusion

Financial factors did not have as significant an effect on the quality of prescription and fabrication of CCRPDs as did educational factors. Serious deficiencies in the teaching of CCRPDs during vocational training were identified.

IN BRIEF

Enables readers to:

- Appreciate the difficulties posed by the problem of inadequate communication of design features for chrome-cobalt removable partial dentures.
- Gain an insight into the role of educational and financial factors in the development of this problem.
- Recognise the need for continuing professional development in this area of clinical practice.

COMMENT

In the last 30 years there have been a number of studies concerning the provision of metal based partial dentures in general practice and the failure of dentists to provide adequate instructions to dental laboratories. Unfortunately this study confirms that little has changed. The principles of good design are well known and readily available in standard texts and published guidelines¹ and have not changed radically for many years. These principles are also taught in all dental schools; 84% of respondents in this study thought that they had been adequately taught to design and construct metal based partial dentures. Although economic constraints are often cited as the reason for dentists' failure to comply with ethical and legal requirements regarding partial denture design, this study demonstrates that this argument cannot be sustained since two thirds of the cases reported on were privately funded.

It is deeply distressing that vocational trainees are unable to consolidate their limited experience gained in dental schools and clearly the authors of this paper have identified a deficiency in this aspect of vocational training. It is assumed that the VDPs who responded are representative despite only comprising approximately 13% of the total. It would be interesting to discover the characteristics of non-respondents and for what reasons a number of Directors of Vocational Training in the UK and Ireland declined to participate in this study.

The GDC requires that dentists are competent in this area of clinical practice and the MHRA² in published guidance notes quite clearly states that: '...in the manufacturing of a dental appliance, it is the dentist who undertakes the design of the product and the dental laboratory manufactures it to a predefined specification.' These principles have been embodied in the Medical Devices Directive (Directive 93/42/EEC) which member states of the European Community were required to implement from 1 January 1995.

Lynch and Allen are absolutely right to raise concerns about apparent deficiencies in this aspect of vocational training and every effort should be made to consolidate the competency of trainees in this essential component of clinical practice.

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1. British Society for the Study of Prosthetic Dentistry – Guides to Standards in Prosthetic Dentistry: Complete and Partial Dentures (updated 2005) www.bsspd.org
2. Medicines and Healthcare products Regulatory Agency – Guidance Note 10, 2004: Guidance notes for manufacturers of dental appliances (custom made devices) www.mhra.gov.uk

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