

**SCIENTIFIC
SECTION**

Commentaries on scientific papers published in this edition

Patients' expectations of orthodontic treatment: part 1 – development of a questionnaire

M. S. Sayers and J. T. Newton

This article reports the development of a questionnaire that aims to evaluate patients' perceptions of orthodontic treatment. This is an approach that is fairly new to orthodontic research as it has been common practice for us to think up a few questions and put them in a questionnaire. This is, unfortunately, not the correct approach because the questions are based on our perceptions and may not reflect the views of the target sample of patients, i.e. the questionnaire may not be valid.

As a result, it is necessary to develop a questionnaire using a two-stage process. This article clearly outlines how this has been done for this orthodontic project. The first stage was to interview a group of 30 patients and their parents, and the information obtained was used to develop a questionnaire. Following piloting, the questionnaire was then distributed to larger numbers of patients and their parents. The responses obtained were then tested for validity and reliability.

This is an approach that all investigators should follow if they want to carry out questionnaire-based research and will provide us with more valid information than the common approach of asking children if 'they want a brace'. This is a valuable contribution to the literature.

The results of the application of this questionnaire are being outlined in the second paper, which I await with considerable interest.

Kevin O'Brien
Manchester, UK

Magnitude and reproducibility of forces generated by clinicians during laceback placement

**B. S. Khambay, S. McHugh and
D. T. Millett**

This interesting laboratory study looked at the forces generated by clinicians during the placement of

0.09-inch stainless steel lacebacks, in a simulated first premolar extraction case. By means of strain gauges attached to the canine, the magnitude and reproducibility of the forces generated were determined using five Consultants and five SpRs. The SpRs were near the end of their 3-year specialist training. Each placed five lacebacks on two separate occasions. The results demonstrated a large degree of inter-operator variation in the forces produced, which ranged from 0 to 11.1 N. The authors quite rightly pick up on the point that a larger number of clinicians in the study and more force measurements would have added greater weight to statistical tests employed and subsequent inferences made. Nevertheless, the wide range of forces observed might go some way to explain why previous laceback studies have reported conflicting results with respect to anchorage loss by the mesial movement of the first molars.

It is often difficult to make clinical inferences from laboratory studies, but this paper perhaps poses an important question: What do operators actually think is the purpose of the lacebacks they place? Is it to protect the wire, to prevent mesial movement of a distally angulated canine, or to actively retract the canine? Each answer might affect the placement and therefore the force generated by the laceback, which may or may not be applicable to the case being treated.

Tony Ireland
Bristol, UK

A randomized clinical trial comparing 'one-step' and 'two-step' orthodontic bonding systems

**N. Manning, S. M. Chadwick, D. Plunkett
and T. V. Macfarlane**

This is a well written and designed randomized controlled clinical trial that aimed to assess the clinical bond failure rates of orthodontic brackets bonded using a self-etching primer (SEP), compared with brackets bonded using a conventional acid-etched technique with control adhesive (Transbond™). Thirty-four patients were included in the investigation, each being randomly assigned to either the test or control adhesive. The

results are well analysed and clearly described. The strengths of this paper are that all the consecutive patients requiring fixed orthodontic therapy were included, whereas no effort was made to match the patients for age, sex or malocclusion. Patients requiring single arch treatments or orthognathic surgery as part of their orthodontic treatment were excluded. Other positive aspects are that the first bond failure for each tooth was recorded by date and tooth number. A failure was regarded as an all or none occurrence, and

subsequent failures of bonding for that same tooth were noted, but not included in the failure rate. Moreover, the study followed all trial patients to the end of fixed appliance treatment, which is an improvement compared with previous published reports. The only weak point I see is the limited number of patients included.

Vittorio Cacciafesta
Varese, Italy