Innovative Colour-matched Multi-purpose Resin-based Cementation System Evaluated by General Practitioners

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INTRODUCTION
The purpose of this practice-based evaluation was to assess the handling of new shade-matched dual-cure adhesive resin cement suitable for total and self-etch procedures (RelyX™ Ultimate, used with Scotchbond™ Universal adhesive, 3M™ ESPE™, 3M Deutschland GmbH, Seefeld, Germany), and its delivery system, by general dental practitioner (GDP) members of a UK-wide Practice-Based Research Group (P-BRG) the PREP (Product Research and Evaluation by Practitioners). The PREP Panel was established in 1993, has presently 37 members and has published over 50 papers (14 in peer-reviewed journals) reporting handling evaluations and clinical trials carried out by the group.

METHOD
Twelve GDP members of the PREP panel were chosen at random to a kit containing four 8.5g syringes (one A1, one B0.5, 1 A3 and one Translucent) of the material, adhesive, try-in pastes plus mixing tips and instructions for use over a two month period. Also included was a questionnaire designed to evaluate their current resin-based luting cement usage, and to rate the presentation, instructions, dispensing, ease of use and handling of the new material. Most responses were given on visual analogue scale (VAS).

MATERIALS
This new material is a two component adhesive resin system for glass ceramic restorations and when used with the Scotchbond™ Universal adhesive offers high bond strength\(^1,2\) and a choice of a total or self-etch methods.

RESULTS

Background Information
All (100%) of the evaluators previously used a resin-based luting material, with three evaluators using more than one material. Eight evaluators (67%) also used a form of glass ionomer luting material. The main reasons for choice of these materials were reliable results and ease of use. The ease of use of these systems were rated (on a VAS where 1 = difficult to use & 5 = easy) as follows:

a) Resin-based luting system
   1  4.2  5

b) Glass-ionomer system
   1  4.6  5

After clinical use of RelyX Ultimate
The ease of use of the syringes & the bottle of adhesive achieved good ratings (4.6 & 4.4 on a VAS where 1 = difficult to use and 5 = easy). On a VAS (where 1 = poor and 5 = excellent) the final version of the instructions scored 4.8.

A total of 143 restorations were placed. 92% (n=11) of the evaluators stated it was an advantage to use the new material for all indications and also that the adhesive can be used as both a bonding agent and a silane & restoration primer.

The viscosity of the materials was rated as ideal (on a VAS where 1 = too thin & 5 = too viscous):

1  3.0  5

The dispensing and handling of the new materials was rated by the evaluators and their dental nurses (on a VAS where 1 = inconvenient and 5 = convenient) as follows:

1  4.9  5

The overall ease of use of the evaluation materials was rated as follows (on a VAS where 1 = difficult and 5 = easy):

1  4.3  5

83% (n=10) of the evaluators stated they would purchase the new material and 75% (n=9) would recommend it to colleagues.

CONCLUSION
The new material achieved high ratings in the criteria evaluated and was rated slightly higher than the pre-trial resin-based luting material for ease of use.

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REFERENCES
2. Shear bond strength to enamel after 24hr storage, cement was light cured. C. Decoteau et al. J. Dent. Res. 90 (Spec issue A): 375, 2011