Own label materials: scientific evidence

While Dental Update has not exactly mounted a crusade against so-called ‘own label’ materials, it has tried, on a number of occasions,1,2 to bring readers’ attention to the fact that own label materials have no (I almost wrote a paucity, but no is the correct word!) scientific evidence to back up their performance, or lack of it. We have pointed out that, for example, while £50 savings might be made by purchasing an own label brand of bonding agent, those savings will be nullified and more, by a premature failure of a restoration. An example being, in simplest terms, a prematurely de-bonded Class V restoration and a resulting unhappy patient or, more expensively, by a failed fit of a crown or bridge because of a lack of dimensional stability of an impression material. I daresay that the laboratory would be blamed!

Dental Update has published two literature reviews3,4 which indicated an absence of any scientific testing in the literature with regard to own label glass ionomer materials or own label resin-based materials (dentine-bonding agents or resin composites). Recently, however, there have been two publications from respected scientific research-oriented journals, the results of which indicate suboptimal performance of own label brands of materials.5,6 Both were laboratory studies which compared a variety of physical parameters of own label materials and branded materials, the latter being materials which one would expect to have had some scientific input in their development. In one paper, Johnsen and colleagues,5 from Norway and Poland, used a battery of tests to examine depth of cure, flexural strength, polymerization shrinkage, degree of conversion, monomer elution, cytotoxicity, hardness and surface roughness, to compare two own label brands with a named brand composite (Z250: 3M) commonly used in the public health service in Norway.

They compared their results with applicable ISO standards and other recognized tests. Their results raised concerns, with the own label materials being inferior in many of the parameters mentioned above. Given that the clinical performance of a composite material depends upon adequate polymerization, the researchers expressed concern regarding the lower depth of cure and lower flexural strength of the own label materials, also expressing anxiety that the manufacturer of one of the own label brands had stated that the clinical performance of their composite was better than the results indicated. They also stated that the own label’s inferior performance could not be explained by a batch problem. However, in the work of Shaw and co-workers,6 that was a problem that was identified. While some of the own label products performed reasonably well, they found batch to batch variability, indicating that the manufacturing process was not sufficiently standardized and/or regulated, or that the own label composite was manufactured in one place in one month, and in a different place in a different month. I am aware that an individual dentist needs to make a profit in order to pay a salary to her/himself and to the dental team, so it is tempting to try to save money on materials. However, in large organizations, as was pointed out by Johnsen et al.,5 ‘local purchasing groups do not always have the expertise to satisfactorily assess materials appearing in public tenders’. The same problem is with us in the UK, when people with little or no dental knowledge are in control of the order book in large profit-centric organizations. Is it worth taking the risk to save on materials’ costs? The latest research suggests – not at any price.

References