METHODS

The PubMed, Scopus, Web of Science, VHL, Cochrane Library, Clinical Trials, and OpenGrey databases were searched. No limitations were instituted with regard to date or language of the study. Ten studies were identified, with 9 useful in meta-analyses. These studies included 6 using a split-mouth design and 5 using a parallel design. The number of restorations ranged from 73 to 344 restorations, and the number of participants ranged from 31 to 180 children age 3 to 11 years. Follow-up lasted 6 to 48 months. In 7 studies, the restorations were placed using rubber dam isolation; in 3, cotton roll isolation was used.

RESULTS

The GIC and CR materials demonstrated similar clinical performance with respect to percentage of failures that occurred, marginal adaptation, marginal discoloration, and anatomical form of the restorations. Isolation type did not influence the outcome. GIC had better clinical performance than CR with respect to the number of secondary lesions that occurred. The effect was more pronounced for resin-modified GIC used with rubber dam isolation. Resin-modified GIC is therefore considered a more suitable material for Class II restorations in primary dentition.

DISCUSSION

The paucity of studies comparing GIC to CR makes the conclusions difficult to apply widely. In addition, there were many subgroups to consider. Even though GIC is considered better than CR for Class II restorations in pediatric patients, the findings should be interpreted with caution. More studies that address relevant factors related to restoration longevity in primary teeth are needed.

Clinical Significance

The clinical performances of GIC and CR are similar in many respects. Both materials maintain tooth structure intact and require less invasive techniques. CRs are still more technique sensitive that GICs, require more steps, and are more sensitive to moisture. GICs release fluoride to the oral cavity and require less time for preparation, which make them highly useful for pediatric patients. Further study is needed to confirm the findings of this study, but it appears that resin-modified GIC may be a better choice for many Class II restorations in the primary dentition.

Dias AGA, Magno AB, Delbem ACB, et al: Clinical performance of glass ionomer cement and composite resin in Class II restorations in primary teeth: A systematic review and meta-analysis. *J Dent* 73:1-13, 2018

Reprints available from JP Pessan, São Paulo State Univ (Unesp), School of Dentistry, Araçatuba, Dept of Pediatric Dentistry and Public Health, Rua José Bonifácio, 1193, 16015-050 Araçatuba, SP, Brazil; e-mail: jpessan@foa.unesp.br

REMOVABLE PROSTHODONTICS

Communication

BACKGROUND

Although implants are often considered the gold standard for replacing missing teeth, there are other options, including fixed prostheses and removal partial dentures, that meet the needs of the patient and serve as an excellent option. The fabrication of a removable partial denture (RPD) requires excellent communication between the patient and dentist, the dentist and technician, and the dental nurse and the dentist. The communication challenges facing each of these individuals were detailed.

PATIENT AND DENTIST

Dentists should assume a patient focus and really listen to what the patient needs and desires when considering an RPD. Patients need time to consider the information the dentist gives them and to express their thoughts on the matter. They may have questions that need to be answered, and the dentist must allow for these questions and do the best possible job answering the patient's concerns.

Communication should begin early in the care planning process. In addition to listening carefully to what the patient says, it's important to consider the patient's past denture wearing history, expectations of care, medical history, social history, and any negative views the patient holds regarding dentures. Understanding what the patient expects is especially vital. Dentures are not the same as natural teeth and can feel awkward in the patient's mouth, causing difficulty with speaking or eating, which leads to a lack of confidence in the denture. Taste perception can also be altered when the patient wears a RPD.

If the patient has had a negative experience wearing dentures, the reasons for the problems should be explored. Clinical examination can reveal design defects in previous dentures, which can then be explained to the patient, along with ideas for fixing the situation and making a better denture. Should the clinician feel the denture was appropriate and well-made, he or she may question the wisdom of undertaking to make another RPD because it's likely the patient won't like that one either.

The dentist should take care to explain clearly what can be expected from dentures and repeat the information in writing as part of the treatment and consent process. Because patients can suffer from selective hearing loss, it's important to repeat the information at every encounter, along with any warnings that should be heeded.

Dentists should make sure patients understand that an initial period of adjustment is to be expected. If the patient has not worn dentures previously, reassurance that contact with the clinician is available to support the process is wise and boosts the patient's confidence in the appliance. If the patient is being given an immediate replacement for a previous denture, the dentist may ask the patient to wear the new one for 24 hours without removing it, then come to see the dentist. This helps the patient persevere and accomplish denture wearing. Patients should be made aware of the realities of denture wearing and encouraged to manage their expectations of the finished result.

DENTIST AND TECHNICIAN

Members of the dental team must work together to accomplish care. The technician is often based in a different facility and may even be in a different country. Communication is essential when a RPD is being fabricated and is usually via a written prescription form, which the laboratory provides. The minimum requirements for a prescription form include the laboratory's name and address, the dentist's name, the clinic's name and address, the patient's name, and a written and diagrammatic design requirements section for the appliance (Box 2).

It can be helpful to include a pictogram of the upper and lower arches of the teeth, a shade to be used for the teeth, and a date for the return of each stage. Ideally, the clinician and technician will also be in contact by phone. Both parties need to be able to contact each other so they can ensure that the correct RPD is constructed. Although ideally a single technician would fabricate the entire denture, generally, laboratory processes are carried out in a production line format, which means different technicians are responsible for each part. To ensure accountability of the process, a single point of contact is needed between the clinician and the laboratory.

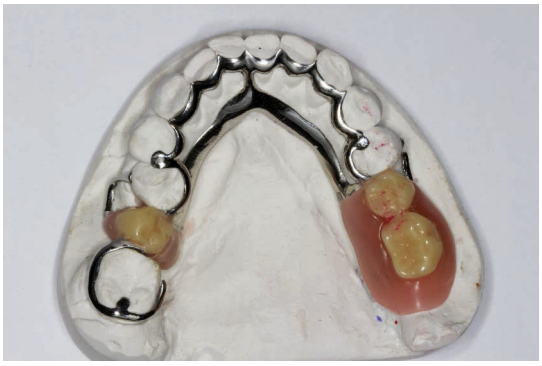

Figure 2. A completed denture. (Courtesy of Bhola S, Hellyer PH, Radford DR: The importance of communication in the construction of partial dentures. *Br Dent J* 224:853-856, 2018.)

At the design phase, it's advisable to both draw and write the description of the denture on the laboratory prescription (Fig 2 and Box 3). It may also be useful to draw the location of various features on the stone cast itself.

The date of return for the work should be before the patient returns for try-in. This allows the dentist to check out the work before the patient arrives. If anything is wrong, the dentist and technician can work things out without the complication of having the patient in the middle.

DENTAL NURSE AND DENTIST

A well-trained dental nurse can be invaluable to a dentist. This individual will know what equipment and materials are needed for each stage of denture construction. The dental nurse will prepare the room as required, manipulate materials, optimize infection control, and provide the patient focus and reassurance needed.

Box 2. Standard Instructions for All Laboratory Work.

Unless otherwise instructed, please:
- Make all special trays for partial dentures spaced and perforated
- Make all record rims wire reinforced
- When pouring impressions and trimming casts, please ensure full sulcus shape and depth are maintained
- All finished dentures to be returned fitted to a duplicate cast

(Courtesy of Bhola S, Hellyer PH, Radford DR: The importance of communication in the construction of partial dentures. *Br Dent J* 224:853-856, 2018.)

Box 3. Written Prescription of Metal Framework for the Denture Shown in Figures 1 and 2.

Please cast cobalt chrome framework with a lingual bar extending from 45 to 35, together with a continuous connector (modified Kennedy connector), freeing the gingival margin anteriorly and lingually. I bars 45, 35, ring clasps with distal rest 37, mesial rest 34, mesial rest 45.

(Courtesy of Bhola S, Hellyer PH, Radford DR: The importance of communication in the construction of partial dentures. *Br Dent J* 224:853-856, 2018.)

Clinical Significance

The dentist must maintain a patient focus throughout the process of designing a denture plan that will fit the needs of the individual. Communication with the patient should clarify the concerns and expectations he or she faces. The correct design is then conveyed to the technician who will formulate the actual appliance. The work between dentist and dental nurse should be focused on ensuring that the correct RPD is placed and the process is experienced with as little disturbance to the patient as is possible.

The nurse will be the one to talk with the patient, often re-explaining what the dentist is doing and serving as a patient advocate if needed. The reinforcement of the explanations and expectations given the patient initially can be reassuring to the patient and clinician alike.

The nurse should check to ensure the laboratory prescription is completed correctly and carries the correct return date. Should an error be found, the nurse will inform the dentist. The nurse should also be alert to detect any impressions that have pulled away from the impression tray and notify the clinician appropriately.

Bhola S, Hellyer PH, Radford DR: The importance of communication in the construction of partial dentures. *Br Dent J* 224:853-856, 2018

Reprints available from S Bhola, Oral and Maxillofacial Surgery, Restorative with Special Care, Bristol Dental Hosp, Lower Maudlin St, BS1 2LY; e-mail: surina.bhola@hotmail.com

RESTORATIVE DENTISTRY

Survival of composite restorations

BACKGROUND

A database made available to the dental research community by the United Kingdom Data Service reveals some interesting facts about the survival of restorations to re-intervention or extraction. A look at the survival of composite restorations was taken, focusing on adults age 18 years or older and on several parameters.

METHODS

The data were used to investigate the survival of direct-placement composite restorations and the time to extraction of teeth restored with direct-placement composite restorations, as well as factors that influence these outcomes. The data covered 3,504,225 composite restorations placed in 3 million patients during 25 million courses of treatment.

RESULTS

In 1,333,987 restorations, re-intervention was performed, and in 247,962 cases the restored tooth was extracted. The survival rate was about 34% at 15 years, 43% at 10 years, and 59% at 5 years (Figure 1). When time to extraction was considered, about 83% of the restored teeth survived for 15 years. These data were further stratified by tooth factors, dentist factors, and patient factors.

Tooth Factors

Class IV restorations survived less well to re-intervention than class III and class V restorations by about 10 percentage points. When time to extraction was considered, the teeth restored with a restoration having an incisal corner or incisal edge had marginally better survival data. In addition, lower arch teeth had a survival about 7 percentage points better than upper arch teeth. Restorations in central incisor teeth had slightly better survival data than restorations in lateral incisor teeth.

Dentist Factors

Although the dentist's gender had no effect on survival of composite restorations to re-intervention, younger dentists' restorations performed better than those placed by older dentists, with a difference of about 5% at 15 years. When survival to extraction is considered, the inverse correlation between age and survival was accentuated.

Patient Factors

Early on, men and women had similar survival data. However, at 15 years men had worse outcomes than women whether longevity was measured as time to re-intervention or time to extraction.

Restorations in younger patients performed better than those in older patients in respect to both time to re-intervention and time to extraction. The difference in years to extraction between the oldest and youngest age groups was about 30 percentage points in terms of cumulative survival at 15 years. The oldest age groups should expect to lose over 30% of their restored teeth, but the youngest age group will have less than 10% lost.