REDUCING WASTE WHILE BUILDING DENTAL STUDENT EXPERIENCE USING DIFFERENT TEMPORARY DRESSINGS

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1 INTRODUCTION

Temporary fillings are required in an emergency dental setting for treatments that include: a broken tooth, treating reversible pulpitis and for dressing a tooth once starting root canal treatment. The most commonly used dressing material at Dundee Dental Hospital and Research School (DDH&RS) is a Glass Ionomer Cement (GIC).

GIC comes in different forms, primarily capsular or hand mixed.

Capsular GIC:

- Each plastic capsule comes contains 0.41g of working filling material[1].
- Each capsule is single use and disposed in clinical waste
- The material is mixed using an electronic mixer.

Hand-mixed GIC:

- 10g of powder is supplied in a glass jar, and a re-usable water dispenser. The material is hand mixed on a mixing pad sheet of paper and with a reusable spatula.
- Anecdotally this type of GIC is more commonly used in general practice compared to capsular due to cost.

The concern with capsular GIC:

1. It produces a significantly higher amount of waste compared to hand mixed.
2. The students have limited experience of used of a material that is common in general practice .

Data collected over 2 months showed 100% (n=25) of temporary dressings were completed with capsular GIC by dental students in an emergency dental setting .

The aim of this project was to reduce single use plastics used in emergency dentistry and increase student experience of use of hand mix GIC

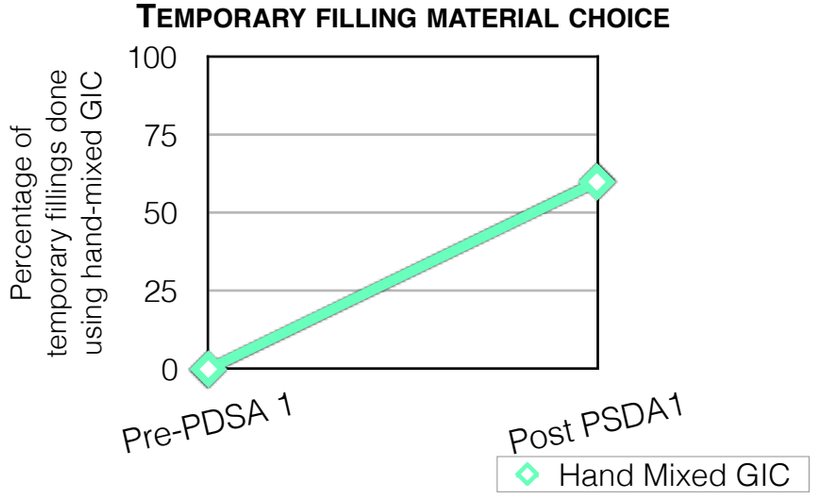
2 METHOD

Plan-Do-Study-Act (PDSA) method was used.

PDSA 1: Students were verbally taught the benefits using hand mixed GIC and were asked to consider their choice of temporary material. Data was collected from this point for 4 weeks to assess usage.

Post data collection, a survey questioning the motivation behind chosen of material and what would encourage further use of hand mixed GIC was given to students.

3 RESULTS



Line graph: *After PDSA cycle1 the use of hand mixed GIC by students had increased by 60%.*

Post cycle 1 survey results: (where n=59)

- 25% of respondents had used hand mixed GIC clinically and motivation for choice was varied.
- 93% of dental students would like more teaching on hand mixed GIC.

4 DISCUSSION

Limitations:

- GIC being mixed by hand resulted in some resistance to implementation from staff members.
- The busy and unpredictable nature of an emergency clinic may have resulted in not every restoration being recorded as the data was collected independent of the notes.

Other considerations:

- To mix an equal amount of both materials the difference in cost minimal, however a more accurate amount of material can be mixed with hand mix.
- From the survey, 3rd and 4th year students would like more teaching however final year students were happier to use hand mixed GIC due to experience in peripheral clinics, suggesting increasing clinical exposure will increase confidence and support its use.
- Both materials have similar clinical properties. Capsular GIC is less porous[2] and has an increased surface strength[3] which reduces wear over time, however the dressings in this project are considered temporary.

5 CONCLUSION

In conclusion, this project saw an increased use of hand mixed GIC by 60%. The main benefits of this transition are reduced clinical waste and preparing students to use materials more commonly available in general practice.

Future work may consider additional practical teaching for students. Alternatively there is scope to limit dental student use of capsular GIC or phase it out completely.

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