

The Reasons for Placement and Replacement of Fillings in Jordanian Patients

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Abstract: Aim: The aim of the study was to assess the reasons for placement and replacement of fillings, and to evaluate the fillings most commonly used in restoring primary and young permanent teeth in Jordanian patients. Method: 120 children with age range (5 - 10) were examined in pediatric dental clinic for the need to place a new filling or to replace an existing one in their teeth. Result: The most common cause for placement of filling was primary caries, while secondary caries was the most common cause of filling replacement. Conclusion: Dental caries is still the main cause for dental restoration. Glass ionomer and amalgam are still widely used, while resin - based composite is less used, except in cases of trauma.

Keywords: reasons, fillings, teeth, placement, replacement

1. Introduction

There are many reasons behind the attendance of patients to dental clinic; these include pain, routine checkup, trauma, tooth restoration and other causes.

Many of these factors require either placing fillings for the first time or replacing others.

Also, dental caries still represents a very common infectious disease causing pain and discomfort, so patients seek placing or a filling to relieve these symptoms, and if the filling fails, there will be a need for replacing it, then if this didn't work other modalities of treatment like extraction and prosthetic replacement would be needed.

Also, there is an increased awareness and willing of patients to preserve teeth, even the primary ones, rather than their extraction, so patients usually ask for filling the teeth rather than their extraction.

However, the choice of the modality of treatment and restorative material depends on many factors: The age and

cooperation of the patient, the condition of the tooth, and patient and operator preferences.

Aim: To assess the reasons for placement and replacement of fillings in primary and young permanent teeth, and to find the type of restoration most commonly used in children.

2. Material and method

120 pediatric dental patients with the age range (5 - 10) years were examined in pediatric dental clinic in prince Rashed Hospital; they had 264 teeth need either placement or replacement of filling. The type of filling and the cause for the filling were recorded for every tooth.

3. Results

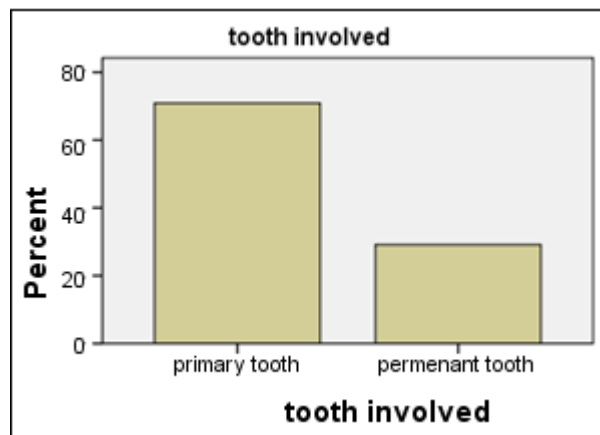
264 teeth were found needing either placing or replacing filling because of different causes: caries (primary or secondary), trauma, fractured filling, or other causes. Of the 264 fillings, 187 were in primary teeth, 77 were in permanent teeth. On the other side 227 were placed for the first time, and 37 were done after the previous fillings failed to replace them, (tables 1, 2)

Table 1: Tooth Involved

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary tooth	187	70.8	70.8	70.8
	Permanent tooth	77	29.2	29.2	100
	Total	264	100	100	

Table 2: Type of treatment

		Frequency	Percent (%)	Valid Percent	Cumulative Percent
Valid	Placement	227	86	86	86
	Replacement	37	14	14	100
	Total	264	100	100	



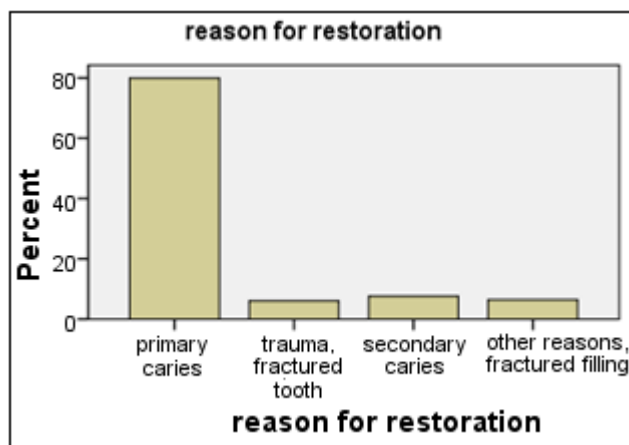
*Primary caries was the most common cause for dental treatment; it comprised 79.9% of the reasons (table 3).

Table 3: Reason for restoration

		Frequency	Percent (%)	Valid Percent	Cumulative Percent
Valid	primary caries	211	79.9	79.9	79.9
	trauma, fractured tooth	16	6.1	6.1	86
	secondary caries	20	7.6	7.6	93.6
	other reasons, fractured filling	17	6.4	6.4	100
	Total	264	100	100	

Table 4

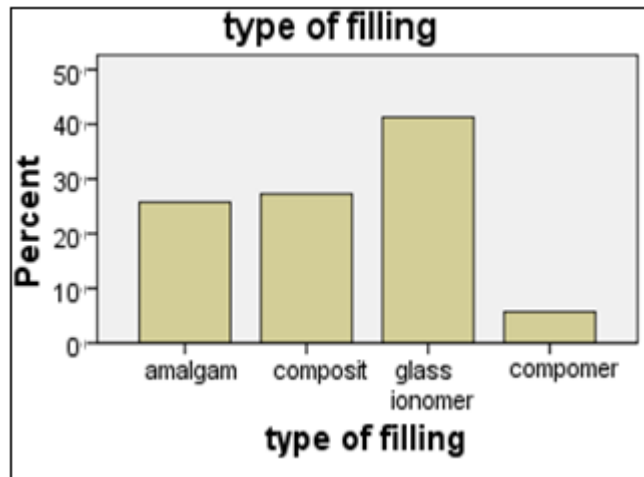
Number of filling placed for the first time	Due to primary caries	% of total	Due to dental trauma, fractured tooth	% of total
227	211 (93 %)	80%	16 (07%)	06%
Number of filling placed to replace a previous one	Due to secondary caries		Due to other causes, fractured filling. . .	
37	20 (54%)	08%	17 (46%)	06%



*Glass ionomer was the most common filling material used, followed by composite. (table 5)

Table 5: Type of filling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Amalgam	68	25.8	25.8	25.8
	Composite	72	27.3	27.3	53
	glass ionomer	109	41.3	41.3	94.3
	Compomer	15	5.7	5.7	100
	Total	264	100	100	



type of treatment * type of filling Crosstabulation						
		type of filling				Total
		amalgam	Composite	glass ionomer	compomer	
Placement	Count	40	68	104	15	227
	% within type of treatment	17.60%	30.00%	45.80%	6.60%	100.00%
	% within type of filling	58.80%	94.40%	95.40%	100.00%	86.00%
	% of Total	15.20%	25.80%	39.40%	5.70%	86.00%
Replacement	Count	28	4	5	0	37
	% within type of treatment	75.70%	10.80%	13.50%	0.00%	100.00%
	% within type of filling	41.20%	5.60%	4.60%	0.00%	14.00%
	% of Total	10.60%	1.50%	1.90%	0.00%	14.00%
Total	Count	68	72	109	15	264
	% within type of treatment	25.80%	27.30%	41.30%	5.70%	100.00%
	% within type of filling	100.00%	100.00%	100.00%	100.00%	100.00%
	% of Total	25.80%	27.30%	41.30%	5.70%	100.00%

reason for restoration * type of filling Crosstabulation						
		type of filling				Total
		amalgam	Composit	glass ionomer	compomer	
primary caries	Count	37	59	100	15	211
	% within reason for restoration	17.50%	28.00%	47.40%	7.10%	100.00%
	% within type of filling	54.40%	81.90%	91.70%	100.00%	79.90%
	% of Total	14.00%	22.30%	37.90%	5.70%	79.90%
trauma, fractured tooth	Count	3	9	4	0	16
	% within reason for restoration	18.80%	56.20%	25.00%	0.00%	100.00%
	% within type of filling	4.40%	12.50%	3.70%	0.00%	6.10%
	% of Total	1.10%	3.40%	1.50%	0.00%	6.10%
secondary caries	Count	15	2	3	0	20
	% within reason for restoration	75.00%	10.00%	15.00%	0.00%	100.00%
	% within type of filling	22.10%	2.80%	2.80%	0.00%	7.60%
	% of Total	5.70%	0.80%	1.10%	0.00%	7.60%
other reasons, fractured filling	Count	13	2	2	0	17
	% within reason for restoration	76.50%	11.80%	11.80%	0.00%	100.00%
	% within type of filling	19.10%	2.80%	1.80%	0.00%	6.40%
	% of Total	4.90%	0.80%	0.80%	0.00%	6.40%
Total	Count	68	72	109	15	264
	% within reason for restoration	25.80%	27.30%	41.30%	5.70%	100.00%
	% within type of filling	100.00%	100.00%	100.00%	100.00%	100.00%
	% of Total	25.80%	27.30%	41.30%	5.70%	100.00%

tooth involved * type of filling Crosstabulation							
		type of filling				Total	
		amalgam	Composite	glass ionomer	compomer		
tooth involved	primary tooth	Count	34	38	108	7	187
		% within tooth involved	18.20%	20.30%	57.80%	3.70%	100.00%
		% within type of filling	50.00%	52.80%	99.10%	46.70%	70.80%
		% of Total	12.90%	14.40%	40.90%	2.70%	70.80%
	permanent tooth	Count	34	34	1	8	77
% within tooth involved		44.20%	44.20%	1.30%	10.40%	100.00%	

		% within type of filling	50.00%	47.20%	0.90%	53.30%	29.20%
		% of Total	12.90%	12.90%	0.40%	3.00%	29.20%
		Count	68	72	109	15	264
Total		% within tooth involved	25.80%	27.30%	41.30%	5.70%	100.00%
		% within type of filling	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	25.80%	27.30%	41.30%	5.70%	100.00%

4. Discussion

The results showed that primary caries is the most common cause for placing a filling, this coincides with what was published by Chrysanthakopoulos⁽¹⁾, Alnegrish⁽²⁾, Helena Fross⁽³⁾, and by MJ Tyas⁽⁴⁾.

On the other side, secondary caries formed the most common cause for replacing a filling, this is similar to the results published by Chrysanthakopoulos⁽¹⁾, MJ Tyas⁽⁴⁾, Burke FJT⁽⁵⁾, Deligeorgi V⁽⁶⁾, and Mjor IA⁽⁷⁾.

Generally, Glass ionomer was the tooth filling most commonly used, especially in the case where the filling was placed for the first time, while amalgam was used most commonly to replace other fillings when fail due to secondary caries or fractured filling. This contradicts what was reported by Mahmood S⁽⁸⁾ who reported a minimal use of glass ionomer in his study. The reason behind the frequent use of glass ionomer in our sample is that there is a high number of primary teeth included, and it is known that glass ionomer is indicated for filling primary teeth especially those with short anticipated lifespan, and because of its important anticariogenic effect due to fluoride release which is very important in pediatric dental patients. Samara Silvani⁽⁹⁾ found that "composite was the most indicated material for the new restoration", Fross H⁽³⁾ "the most common restorative material was composite resin", Vidnes - Kopperud S⁽¹⁰⁾, who found that "the most frequently used material was resin composite", and Braga⁽¹¹⁾ *et al* "The chosen restorative material was the resin composite".

In our study composite resin was used at a less degree than glass ionome because of the limitations to the use of composite resin in primary teeth and young permanent teeth in children such as poor patient cooperation, poor moisture control, and technique sensitivity. However, this material should take its place in restoring teeth routinely.

In this paper, In the case of replacing old restorations, Amalgam was used frequently and routinely, this disagrees with what was published by Valeria V.⁽¹²⁾ "The probability of changing from amalgam to another restorative material differed with several characteristics of the original restoration. The change was most likely to take place when (1) the treatment was a replacement; (2) the tooth involved was not a molar; (3) the tooth was in the upper arch; and (4) the original treatment involved a one surface

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