

A contemporary survey of dental cervical lesions. Part II: The influence of dentists' qualification on the treatment

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هدفت هذه الدراسة الى معرفة مدى تأثير درجة تاهيل طبيب الاسنان ونوع ممارسته السريرية ومكان العمل على قدرته على تحديد سبب معالجة الافات السنية العنقية ، نوع المعالجة ، وكذلك المواد المرهم المستخدمة . تم اختيار (٢٤٨) طبيب اسنان وذلك بشكل عشوائي للمشاركة في هذه الدراسة من خلال تعبئة استبيان خصص لهذه الغاية . احتوى الاستبيان اسئلة تتعلق بعمر ، ومؤهلات ومكان الممارسة العملية للمشاركين. طلب من المشاركين ان يبيّنوا الاسباب التي دعتمهم لتقديم العلاج للحالات الاربعة للافات العنقية وان يسيوا كذلك المواد المرهم المستخدمة في ذلك . تمت الاستجابة من قبل (١٧٦) طبيب اسنان عام و (٤٤) طبيب اسنان اختصاصي يعملون في عمان حيث قاموا بتعبئة واعادة الاستبيان. تم تحليل البيانات الواردة احصائيا باستخدام برنامج حاسوب متخصص. اظهرت النتائج ان الدافع الرئيسي للمعالجة كان فرط حساسية العاج وذلك بنسبة (٦٨,٨%) في حالات التحات ، (٦٧,٢%) في حالات التآكل و (٤٨,٤%) في حالات الاجهادات المينائية العنقية ، بينما كانت الدوافع التحميلية بنسبة (٧٠,٩%) في حالات نخر الجذور . ومن بين البدائل العلاجية المتوفرة ، كانت اختيارات المشاركين تقع على الترميمات كعلاج في المقام الاول لحالات نخر الجذور (٨٧,٧%) ، التآكل (٤٧,٥%) و التحات (٤٥,٨%) ، بينما كانت المعالجة المتبعة بشكل رئيسي في حالات الاجهادات المينائية العنقية هي معالجات تتركز على النصائح الوقائية والمراقبة . كان الاسمنت الشاردي الزجاجي او الكومبوزيت هي المواد الاكثر استخداما لترميم نخر الجذر (٦٣,٥%) بينما الكومبوزيت كان الاكثر استخداما في حالات التحات (٦١,٧%) ، التآكل (٦٢,٥%) وكذلك الاجهادات المينائية العنقية (٤٦,٩%) . لقد بينت التحليلات الاحصائية وجود فروق ذات قيمة احصائية بين النتائج عند اعتبار كل من درجة التأهيل ، نوع الاختصاص ومكان الممارسة العملية للمشاركين . ان الدوافع التحميلية والتغلب على فرط حساسية العاج كانت اسبابا شائعة لمعالجة الافات العنقية للاسنان في حين استخدام الترميمات السنية هيمنت على المعالجة لهذه الحالات استخدم البعض وسائل المحافظة الوقائية وخاصة لحالات الانحلال، التآكل والاجهادات المينائية العنقية.

The objective of this study was to investigate the influence of dentist qualification, dental speciality and type of clinical practice in determining the reasons for treating dental cervical lesions, types of treatment and restorative materials used. Out of 248 dentists randomly selected to fill self-administered questionnaires, 176 general dental practitioners and 44 specialists working in Amman, Jordan filled 220 questionnaires. The questionnaire contained questions concerning the age, qualification and type of practice of the respondents. The respondents were asked to report the reasons for treating the four types of cervical lesions and to indicate the restorative materials used. Data were analyzed by Chi-square method at a significance level of $P < 0.05$ using SPSS. The main reason for treatment was dentine hypersensitivity in case of erosion (68.6%), abrasion (67.2%) and abfraction (48.4%) and aesthetics for root caries (70.9%). Among the treatment alternatives available, the respondents chose the provision of a restoration as the treatment of choice for root caries (87.7%), abrasion (47.5%) and erosion (45.8%), whilst the treatment of choice for abfraction (44.4%) was preventive advice and monitoring. Glass ionomer cement or compomer were the materials of choice for the restoration of root caries (63.5%) and resin composite for erosion (61.7%), abrasion (62.5%) and abfraction (46.9%). There were significant differences ($P < 0.05$) in results when the highest qualification, type of speciality and the primary type of clinical practice of respondents were considered. Aesthetics and dentine hypersensitivity were common reasons for treatment of cervical lesions. A predominantly restorative approach to the management of these lesions was adopted. However, non-invasive procedures for managing a proportion of the lesions particularly erosion, abrasion and abfraction were also used.

Introduction

It is worth drawing attention to the changes that have taken place in recent years in relation to the management/treatment of dental caries and other dental cervical lesions. Traditional practice of yesteryears in countries well supplied with dentists has been very much inclined towards a culture of cavity preparation and restoration wherever tooth substance has been missing and the tooth has been deemed restorable. A rather more discerning approach, whereby the primary aim is to eradicate the source of the condition and restore relatively sparingly, has received much prominence in recent years.¹⁻⁴

In the literature, various treatment criteria or recommendations could be found for management of dental cervical lesions. Although the assumption has been that all dental cervical lesions should be treated in the same manner regardless of their aetiological factors,⁵ some clinical investigators believe this notion to be erroneous.⁶

In Part I it was shown that the dentists in Jordan encountering root caries, erosion, abrasion and abfraction on a regular basis. In addition, dentists varied markedly in the diagnoses they made in respect of dental cervical lesions illustrated to them by means of clinical coloured photographs. Similar findings have been reported by other workers.^{7,8} While some of the variation may be

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multifactorial aetiology associated, with dental cervical lesions, some of the diagnoses must have been incorrect. This is a worrying finding, for in the absence of a correct diagnosis, some inappropriate treatment may take place in the practice environment. In Jordan, the dentist: population ratio is approximately 1:1000 although the percentage of postgraduate training is small (10%), Jordan is well supplied with dentists.⁹ It was felt desirable to find out from some of these dentists and investigate some aspects of the ways in which they manage/treat four types of dental cervical lesions. By reporting the findings, it is felt that dentists, both in Jordan and worldwide, might benefit by considering the extent to which they generally conform with, or deviate from, the treatment modalities of other members of the profession.

The present study investigated the reasons for treatment, types of treatment and types of restorative material used in the treatment of four types of dental cervical lesions. This study also examined these factors in relation to the dentist qualification and primary type of clinical practice.

Material and Methods

Out of 248 dentists, 220 (176 general dental practitioners and 44 dental specialists) responded in a questionnaire survey, the details of which have been reported in part I of the study. The purpose of the questionnaire, based on that of Bader *et al.*⁷ and Lytle *et al.*⁸, was to evaluate how the dental community treated four common types of dental cervical lesion namely: root caries, erosion, abrasion and abfraction.

The dentists were asked to estimate the frequency, with which each of five possible reasons for treatment applied to each of the four types of lesion, using the following categories:

- Frequently in 75-100% of instances
- Moderately in >25-<75% of instances
- Infrequently in 0-25% of instances

The five possible reasons for treatment were dentine hypersensitivity, aesthetics, loss of integrity of the tooth, possible pulpal exposure, and probable use as abutment for prosthesis.

The dentists were also asked to indicate the frequency (frequently, moderately or infrequently) with which they felt they applied each of the four types of treatment (preventive advice and monitoring, fluoride application, dentine sealer application, and restoration) with respect to each of the four types of cervical lesions in question.

With respect to restorative treatment for each

of the four types of lesions, the dentists were additionally asked to estimate the frequency with which they used composite resin, amalgam, glass ionomer cement or compomer.

All the responses were treated anonymously. The data were analyzed by Chi-square analysis at $P < 0.05$ using Statistical Package for Social Sciences (SPSS for windows, Release 7.5.2. 1997 SPSS Inc.,).

Results

Two hundred and twenty dentists practicing in different places in Amman participated in the current study (details in Part 1). The results obtained were divided into three sections in relation to the reasons of treatment, types of treatment and restorative materials used. The results are reported in Tables 1 to 6. The total number of respondents in the tables below does not necessarily add up to 220 for each question, as a few of the respondents left a number of questions unanswered.

Reasons for Treatment

The results of respondent views concerning the reasons for treatment of cervical lesions are shown in Table 1. The results that showed statistically significant differences when the respondents were grouped according to their highest qualification and type of specialty are summarized in Table 2.

A significantly higher percentage (35.7%) of PhD respondents reported that the most frequent reason for treatment of erosion was when using the tooth as an abutment for prosthesis ($P=0.008$). Similarly, a significantly higher percentage (43.5%) of MSc respondents reported that the most frequent reason for treatment of abrasion was when using the tooth as an abutment for prosthesis ($P=0.017$).

As for the type of specialty, a statistically higher percentage (38.9%) of restorative specialists reported that the most frequent reason for treatment of abrasion was when the tooth was used as an abutment for prosthesis ($P=0.003$).

Treatment of Cervical Lesions

The results of the respondent views concerning the types of treatment used for the four dental cervical lesions are shown in Table 3. The results that showed significant differences when the respondents were grouped according to their

Table 1. The reasons for treating root caries dental cervical erosion, abrasion and abfraction lesions as reported by respondents

Reason for treatment	Root caries			Erosion			Abrasion			Abfraction		
	Frequently Associated	Moderately Associated	Infrequently Associated	Frequently Associated	Moderately Associated	Infrequently Associated	Frequently Associated	Moderately Associated	Infrequently Associated	Frequently Associated	Moderately Associated	Infrequently Associated
1. Aesthetics	n (%) 146 (70.9%)	n (%) 53 (25.7%)	n (%) 7 (3.4%)	n (%) 113 (54.9%)	n (%) 74 (35.9%)	n (%) 19 (9.2%)	n (%) 115 (55.3%)	n (%) 77 (37%)	n (%) 16 (7.7%)	n (%) 77 (40.3%)	n (%) 71 (37.2%)	n (%) 43 (22.5%)
2. Possible pulpal exposure	143 (68.4%)	64 (30.6%)	2 (1%)	52 (25.5%)	103 (50.5%)	49 (24%)	54 (27.3%)	85 (42.9%)	59 (29.8%)	34 (18.2%)	88 (47.1%)	65 (34.8%)
3. Dentine hypersensitivity	131 (66.2%)	49 (24.7%)	18 (9.1%)	140 (68.6%)	52 (25.5%)	12 (5.9%)	133 (67.2%)	54 (27.3%)	11 (5.6%)	91 (48.4%)	74 (39.4%)	23 (12.2%)
4. Loss of Integrity of tooth	109 (53.2%)	88 (42.9%)	8 (3.9%)	54 (27.3%)	120 (60.6%)	24 (12.1%)	45 (22.6%)	127 (63.8%)	27 (13.6%)	51 (26.8%)	110 (57.9%)	29 (15.3%)
5. Abutment for prosthesis	81 (39.9%)	90 (44.3%)	32 (15.8%)	45 (23.7%)	99 (52.1%)	46 (24.2%)	40 (20.6%)	110 (56.7%)	44 (22.7%)	34 (18.6%)	101 (55.2%)	48 (26.2%)

Table 2. A summary of the significant differences found between the respondents regarding the reasons for treatment of dental cervical lesions when the highest qualification and type of specialty were considered

Reason for treatment	Highest qualification						P
	BDS respondents		MSc respondents		PhD respondents		
	Frequently associated n (%)	Moderately and Infrequently associated* n (%)	Frequently associated n (%)	Moderately and Infrequently associated n (%)	Frequently associated n (%)	Moderately and Infrequently associated n (%)	
1. Abutment for prosthesis for erosion	34 (22.1%)	120 (77.9%)	6 (27.3%)	16 (72.7%)	5 (35.7%)	9 (64.3%)	0.008
2. Abutment for prosthesis for abrasion	27 (17.2%)	130 (82.8%)	10 (43.5%)	13 (56.5%)	3 (21.4%)	11 (78.6%)	0.017
Reason for treatment	Restorative specialists		Other specialists		General dental practitioners		P
	Frequently associated	Moderately and Infrequently Associated*	Frequently associated	Moderately and Infrequently associated	Frequently associated	Moderately and Infrequently associated	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Abutment for prosthesis for abrasion	7 (38.9%)	11 (61.1%)	6 (31.6%)	13 (68.4%)	27 (17.2%)	130 (82.8%)	0.003

*Moderately and infrequently associated were grouped together and added to the table to show the complete data as reported by the respondents. Chi-square analysis
The total number of respondents may not add up to 220 because a number of the respondents did not answer all questions.

highest qualification, type of specialty and primary type of clinical practice are summarized in Tables 4 and 5.

The frequency at which preventive advice and monitoring was used for treatment of erosion, fluoride application for treatment of root caries, fluoride application for treatment of erosion, dentine sealer for treatment of abrasion and dentine sealer for treatment of abfraction was significantly higher among the MSc compared with PhD and BDS respondents ($P=0.027$, $P=0.007$, $P=0.007$, $P=0.003$ and $P=0.012$, respectively, Table 4).

In addition, the restorative specialists reported a significantly higher percentage (55%) of fluoride application for the treatment of abrasion ($P=0.020$) when compared to other specialists (27.7%) and general dental practitioners (28.1%).

As for the primary type of clinical practice, the respondents of Ministry of Health reported the most frequent use of fluoride (35.5%) application and dentine sealer (33.3%) for the treatment of root caries ($P=0.012$ and $P=0.013$, respectively) as indicated in Table 5, while 23.1% and 14.3% of Universities, 16% and 13% of Military Medical

Services, and 12.8% and 10.2% of private clinics did so, respectively. The respondents of the Military Medical Services reported the most frequent use of dentine sealer for the treatment of abrasion (39.1%) and abfraction (36.0%) lesions ($P=0.013$ and $P=0.010$, respectively) as seen in Table 5 while 36.7% and 24% of Ministry of Health, 20.8% and 14.4% of private clinics and, 7.7% and 15.4% of Universities did so, respectively.

Restorative Materials

Table 6 shows participants response to the type of restorative materials used for the four types of cervical lesions. There were no statistically significant differences between the groups of the respondents in relation to their qualification, specialty and primary type of clinical practice ($P>0.05$).

Discussion

Dentists tend to work in a somewhat isolated environment. This is inevitable, given the nature of the traditional model of dental practice, which is common worldwide. Any refinement or forward

Table 3. Types of treatment used for root caries, dental cervical lesions, abrasion and abfraction

Treatment	Root caries			Erosion			Abrasion			Abfraction		
	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)
1. Restoration	186 (87.7%)	25 (11.8%)	1 (0.5%)	92 (45.8%)	85 (42.3%)	24 (11.9%)	97 (47.5%)	84 (41.2%)	23 (11.3%)	68 (36.4%)	80 (42.8%)	39 (20.9%)
2. Fluoride application	35 (17.3%)	72 (35.6%)	95 (47%)	73 (35.3%)	85 (41.1%)	49 (23.7)	61 (30.2%)	80 (39.6%)	61 (30.2%)	36 (19.6%)	50 (27.2%)	98 (53.3%)
3. Dentin sealer	27 (14.1%)	56 (29.2%)	109 (56.8%)	53 (26.6%)	107 (53.8%)	39 (19.6%)	48 (24.5%)	96 (49%)	52 (26.5%)	34 (19.1%)	60 (33.7%)	84 (47.2%)
4. Preventive advice and monitoring	25 (13%)	49 (25.5%)	118 (61.5%)	65 (33.9%)	82 (42.7%)	45 (23.4%)	80 (41.7%)	70 (36.5%)	42 (21.9%)	83 (44.4%)	59 (31.6%)	45 (24.1%)

The total number of respondents may not add up to 220 because a number of the respondents did not answer all questions.

Table 4. A summary of the significant differences found between the respondents regarding the types of treatment of dental cervical lesions when the highest qualification and type of specialty were considered

Reason for treatment	BDS respondents		MSc respondents		PhD respondents		P
	Frequently used n (%)	Moderately and Infrequently used* n (%)	Frequently used n (%)	Moderately and Infrequently used n (%)	Frequently used n (%)	Moderately and Infrequently used n (%)	
1.Preventing advice and monitoring for erosion	45 (29.6%)	107 (70.4%)	14 (60.9%)	9 (39.1%)	6 (35.3%)	11 (64.7%)	0.027
2.Fluoride application for root caries	24 (14.8%)	138 (85.2%)	7 (30.4%)	16 (69.6%)	4 (23.5%)	13 (76.5%)	0.007
3.Fluoride application for erosion	53 (32.3%)	111 (67.7%)	16 (61.5%)	10 (38.4%)	4 (23.4%)	13 (76.6%)	0.007
4.Dentine sealer for abrasion	33 (21.3%)	122 (78.7%)	13 (52%)	12 (48%)	2 (12.5%)	14 (87.5%)	0.003
5.Dentine sealer for abfraction	23 (16.7%)	115 (83.3)	10 (41.7%)	14 (58.3%)	1 (6.3%)	15 (93.7%)	0.012

Reason for treatment	Restorative specialists		Type of specialty Other specialists		General dental practitioners		P
	Frequently associated	Moderately and Infrequently used	Frequently used	Moderately and Infrequently used	Frequently used	Moderately and Infrequently used	
Fluoride application for abrasion	11 (55%)	9 (45%)	5 (22.7%)	17 (77.3%)	45 (28.1%)	45 (28.1%)	0.020

*Moderately and infrequently associated were grouped together and added to the table to show the complete data as reported by the respondents. Chi-square analysis.

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Table 5. A summary of the significant differences found among the respondents regarding the types of treatment of dental cervical lesions when the primary type of clinical practice was considered.

Reason for treatment	Military Medical Services respondents		Ministry of Health respondents		Type of Clinical Practice Universities respondents		Private Clinics respondents		P
	Frequently used n (%)	Moderately and Infrequently used* n (%)	Frequently used n (%)	Moderately and Infrequently used n (%)	Frequently used n (%)	Moderately and Infrequently used n (%)	Frequently used n (%)	Moderately and Infrequently used n (%)	
1.Fluoride application for root caries	4 (16%)	21 (84%)	11 (35.5%)	20 (64.5%)	3 (23.1%)	10 (76.9%)	17 (12.8%)	116 (87.2%)	0.012
2.Dentine sealer for root caries	3 (13.1%)	20 (86.9)	9 (33.3%)	18 (66.7%)	2 (14.3%)	12 (85.7%)	13 (10.2%)	115 (89.8%)	0.013
3.Dentine sealer for abrasion	9 (39.1%)	14 (60.9%)	11 (36.7%)	19 (63.3%)	1 (7.7%)	12 (92.3%)	27 (20.8%)	103 (79.2%)	0.013
4.Dentine sealer for abfraction	9 (36%)	16 (64%)	6 (24%)	19 (76%)	2 (15.4%)	11 (84.6%)	18 (14.4%)	107 (85.6%)	0.010

*Moderately and infrequently associated were grouped together and added to the table to show the complete data as reported by the respondents. Chi-square analysis.

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Table 6. The restorative materials used when restoring root caries and dental cervical erosion, abrasion and abfraction lesions.

Restorative material	Root caries			Erosion			Abrasion			Abfraction		
	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)	Frequently used n (%)	Moderately used n (%)	Infrequently used n (%)
1. GIC or compomer	132 (63.5%)	61 (29.3%)	15 (7.2%)	109 (53.7%)	72 (35.5%)	22 (10.8%)	108 (53.2%)	76 (37.4%)	19 (9.4%)	75 (38.9%)	71 (38.3%)	65 (22.8%)
2. Composite resin	117 (57.6%)	70 (34.5%)	16 (7.9%)	127 (61.7%)	62 (30.1%)	17 (8.3%)	130 (62.5%)	60 (28.8%)	18 (8.7%)	90 (46.9%)	78 (40.6%)	24 (12.5%)
3. Amalgam	30 (14.9%)	88 (43.8%)	83 (41.3%)	7 (3.6%)	62 (31.8%)	126 (64.6%)	15 (7.7%)	56 (28.7%)	124 (63.6%)	10 (5.3%)	55 (29.1%)	124 (65.6%)

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development should, logically, be passed on to other members of the profession so that a wider domain of patients may benefit. This passing on of information constitutes an important role of professional journals and other educational media. Part of the process involves members of the profession and, of course, their patients also potentially gaining a benefit from learning how other members of the profession manage and treat similar conditions.

It is inevitable that some inaccuracies and/or misinterpretations by respondents are bound to have occurred in a study of this type. However, the response rate of 89% of the dentists was considered very satisfactory, and the sample would seem to have been large enough to enable a representative picture to be obtained.

It is no surprise to find that "aesthetics", "possible pulpal exposure", "dentine hypersensitivity" and "loss of integrity of the tooth" were all reasons agreed to by the majority of the respondents for frequently undertaking treatment of root caries. The finding that 87.7% of the respondents cited restorative treatment frequently for the management of root caries, indicated that these dentists were in line with what may be considered to constitute the "traditional" method for managing root caries. However, it was unexpected to find that 61.5% of the dentists indicated that preventive advice and monitoring constituted an infrequently used method of managing root caries, and 56.8% and 47%, respectively indicated that only infrequently did they use a dentine sealer or apply fluoride. Nevertheless, apart from this isolated instance, there were signs of at least a partial shift towards non-invasive methods i.e. fluoride application, dentine sealers and preventive advice and monitoring as sole treatments for root caries or as complimentary to restorative treatment.

The current survey revealed that dentists varied markedly in the diagnoses they made with respect to dental cervical lesions shown to them by means

of clinical color photographs. This is in agreement with previous reports.^{7,8}

Results also showed that the dentists viewed "dentine hypersensitivity" and "aesthetics" as the frequent reasons for treatment of erosion, abrasion and abfraction (in approximately 40-70% of instances). Whilst "loss of integrity of the tooth", "possible pulpal exposure" and "abutment for prosthesis" were frequent reasons for treatment in approximately 20% of instances, suggesting relatively little discrimination between the three different types of lesions regarding reasons for treatment by all respondents before grouping. Overall, the results indicated a widespread use of all four treatments for all three conditions. Thus, many of the dentists cited all the treatments as being applicable "moderately" i.e. in >25% - <75% of instances. However, when considering the highest qualification, the results showed the PhD and MSc respondents considered the use of the tooth as an abutment for prosthesis was the most frequent cause for treatment of erosion and abrasion. This may be due to the fact that most of those respondents were prothodontists and restorative specialists, who are involved more with the construction of different types of prosthesis.

Whilst the provision of a restoration was the most frequent management used with root caries, it is of note that restorative treatment was cited as a much less frequent treatment method for the management of erosion, abrasion and abfraction (Table 3). Indeed, with abfraction, the finding that preventive advice and monitoring was given as the frequent treatment by as many as 44.4% of the dentists suggests a lack of understanding of the management of this condition, because preventive advice and monitoring is unlikely to provide a beneficial effect in respect of a condition with occlusal factors aetiology. With preventive advice and monitoring featuring as a frequent treatment for erosion and abrasion by well under half the dentists (33.9% and 41.7% respectively), it seems that an opportunity for helping patients in a

non-invasive manner is commonly being missed in respect to these conditions.

One would not have expected fluoride application to have featured much as a treatment for erosion, abrasion or abfraction, yet 35.3%, 30.2% and 19.6% of the dentists, respectively indicated that they frequently applied fluoride for these conditions. In addition, even more of the dentists (41.1%, 39.6% and 27.2%, respectively) indicated that they moderately used fluoride application for treating these lesions. Furthermore, high percentages of MSc respondents and restorative specialists (61.5% and 55%) used fluoride application for the treatment of erosion and abrasion, respectively. While fluoride may have a role in the management of erosion and abrasion lesions, it is difficult to see how it could be considered efficacious in respect of abfraction lesions. The dentists (and mainly Military Medical Service respondents) indicated that they use dentine sealers approximately to the same extent as fluoride for treating erosion, abrasion and abfraction lesions; one can only assume that they must be concerned here with hypersensitivity problems that may be associated with these conditions.

In view of possible fluoride-leaching benefits of glass-ionomer or compomer materials,^{10,11} it is of little surprise that the majority of the respondents (63.5%) indicated that they frequently used these materials in the treatment of root caries and it is of little surprise that only 7.2% of the respondents indicated using these materials infrequently. One wonders why a little over half the dentists (53.7% and 53.2%, respectively) indicated frequently using glass-ionomer cement or compomer when treating erosion or abrasion lesions, when any fluoride-leaching properties would seem to be of lesser benefit than the rather more hardy, more durable and potentially highly aesthetic composite resin.

In the treatment of abfraction lesions, the findings showing that composite resin was normally used "frequently" or "moderately" a little more frequently than glass-ionomer cement or compomer suggested an element of rationality though one wonders why the rather less durable glass-ionomer cement or compomer materials were even considered by the dentists as appropriate for treating abfraction lesions.

What is particularly of note in relation to the restorative materials selected is that amalgam, though cited by 14.9% of the dentists as frequently being used in the restorative treatment of root caries, was only cited by 3.6%, 7.7% and 5.3% of

the dentists, respectively as being used frequently in relation to the restorative treatment of erosion, abrasion or abfraction lesions.

Conclusions

1. The respondents reported that aesthetics and dentin hypersensitivity were particularly common reasons for treating dental cervical lesions. With root caries, concerns regarding possible pulpal exposure and loss of integrity of the tooth were also common reasons for treatment.
2. Restorative specialists, MSc and PhD respondents considered the use of the affected tooth, for abutment as the most common reason for treatment of erosion and abrasion.
3. The dentists adopted a predominantly restorative approach to the management of all four types of lesion. It is clear, however, that they were using non-invasive procedures for managing a proportion of these lesions, particularly erosion, abrasion and abfraction. There appears to be a relatively little discrimination between these three later types of lesions by the dentists in terms of the ways in which they were handled.
4. Compomer or glass-ionomer was the most commonly cited material the dentists used for restoring root caries, while composite resin was most commonly used for restoring erosion, abrasion and abfraction lesions. Amalgam was used rarely in the treatment of these lesions.
5. There appears to be a need to shift the management of those lesions more towards non-invasive approach rather than the restorative approach adopted by most respondents.
6. The respondents needed to be more familiarized with the properties of the materials used in the treatment of cervical lesions in order to be able to choose the appropriate material for any given clinical situation.

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