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A survey of pediatric dentists' caries-related treatment decisions and restorative modalities – A web-based survey



Hassan S. Halawany^{a,b,*}, Fouad Salama^c, Vimal Jacob^b, Nimmi Biju Abraham^b,
Tarfa Nasser Bin Moharib^d, Abdulfatah Samih Alazmah^d,
Jawaher Abdulaziz Al Harbi^e

^a Department of Periodontics and Community Dentistry, College of Dentistry, King Saud University, Riyadh, Saudi Arabia

^b Dental Caries Research Chair, College of Dentistry, King Saud University, Riyadh, Saudi Arabia

^c Department of Pediatric Dentistry and Orthodontics, College of Dentistry, King Saud University, Riyadh, Saudi Arabia

^d Pediatric Dentistry Division, Security Forces Hospital, Riyadh, Saudi Arabia

^e Consultant Pediatric Dentist, King Saud Medical City, Riyadh, Saudi Arabia

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Abstract *Objective:* To identify current practices and the preferred caries-related treatment decisions and restorative modalities of primary teeth among pediatric dental practitioners in Saudi Arabia.

Materials and methods: This was a web-based cross-sectional survey conducted among licensed pediatric dental practitioners in Saudi Arabia. Following the retrieval of the email addresses from the Saudi Dental Council, an email explaining the purpose of the study and a link to SurveyMonkey electronic survey consisting of 23 questions was sent to all the members registered under the pediatric dentistry practitioners, starting in September till December 2013. The data obtained was analyzed using descriptive statistics and chi square with and without tabulation processes. The level of significance was set at $p < 0.05$.

Results: A total of 108 [54 (50%) male and 54 (50%) female] pediatric dental practitioners responded to the survey out of 308 targeted individuals for an overall response rate of 35.1%. About 65% of the respondents reported that they have never considered pre-veneered or Zirconia crowns as a restorative option for carious vital anterior primary teeth. About 40% reported doing pulpectomy and restored with composite strip crowns at all times. About 86% of the respondents

* Corresponding author at: College of Dentistry, King Saud University, P.O. Box 60169, Riyadh 11545, Saudi Arabia. Fax: +966 14677425.
E-mail address: halawanyhksu@gmail.com (H.S. Halawany).

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reported doing pulpotomy and stainless steel crown for restoring carious vital posterior primary teeth whereas 73.8% reported restoring with composite resin. However, 83.1% of the respondents reported that they never used pre-veneered or Zirconia crowns after pulpotomy for restoring carious vital posterior primary teeth. A significantly higher number of male participants reported that they used esthetic pediatric crowns in their practice compared to female participants ($p < 0.001$).

Conclusion: The prevalence of use of composite resin to restore primary teeth was higher compared to glass ionomer cements and amalgam whereas a limited use of esthetic pediatric crowns was found among the sample surveyed. Esthetic pediatric crowns were more utilized by male compared to female participants.

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1. Introduction

Despite increase in dental manpower and advances in prevention, dental caries prevalence in children is increasing in developing nations including Saudi Arabia (Miura et al., 1997; Hobdell et al., 2003; Petersen et al., 2005). A systematic review of population-based dental caries studies among children in Saudi Arabia estimated the prevalence of dental caries and its severity in Saudi children to be approximately 80% (mean dmft 5.0) and 70% (mean DMFT 3.5) for the primary and permanent dentition, respectively (Al Agili, 2013).

The rationale for the use of various prevention-oriented treatment modalities in pediatric dentistry is to facilitate the maintenance of the primary dentition thereby reducing the potential for unwanted sequelae of their unplanned extraction (Hunter and Hunter, 2003). Materials and techniques used to restore carious primary teeth have changed over the past decade as new intra- and full-coronal restorations and materials have been developed (Ricketts et al., 2013). However, there have been no consistent agreement on guidelines on the selection of materials and techniques in the pediatric dental literature and hence choice appears based on the practitioner preference (Tran and Messer, 2003). It is important to note that the behavior of the child may affect the choice of the restorative material. For example, when the child is uncooperative and there is a need to restore a tooth, then the restorative material has to be less sensitive to oral environment during placement and so glass ionomer may be better choice rather than resin composite which is technique sensitive.

Behavior management, on the other hand, is vital for establishing communication and an element of trust with pediatric dental patients. The utilization pattern of behavior management techniques has changed over the years (Carr et al., 1999), which is mostly attributed to parental acceptability, legal/ethical concerns, and accessibility and feasibility for the utilization of certain techniques (Davis, 1988; Houpt, 1993; Kuhn and Allen, 1994).

Caries risk assessment, individualized preventive instructions and procedures, behavior management protocols and management of primary teeth caries are vital aspects of pediatric dentistry and are interrelated. The majority of studies on treatment recommendations for the management of primary teeth caries were scenario-based (McKnight-Hanes et al., 1991; Qudeimat et al., 2007; Tickle et al., 2007). However, no studies have investigated the caries risk assessment protocols, individualized preventive instructions and procedures, behavior management protocols and management of

primary teeth caries among pediatric dentists in Saudi Arabia. Therefore, the purpose of this web-based cross sectional survey was to identify current practices related to these aspects, the preferred caries-related treatment decisions and restorative modalities of primary teeth among pediatric dental practitioners in Saudi Arabia.

2. Materials and methods

This study and questionnaire were approved by College of Dentistry Research Center (registration number: FR 0097), College of Dentistry, King Saud University. This was a web-based cross-sectional survey conducted among licensed pediatric dental practitioners in Saudi Arabia. According to the 2013 records of the Saudi Dental Council, there were 308 active pediatric dentists. A request letter was forwarded to administrative officials of the Saudi Dental Council for permission to access the email addresses of all members registered under the pediatric dentistry practitioners. The survey was developed and reviewed by the authors and a pilot study was conducted to validate the questionnaire with a focus group involving seven postgraduate in pediatric dentistry program who were not included in the final survey. Following the retrieval of the email addresses, an email explaining the purpose of the study and a link to SurveyMonkey electronic survey was sent to all the members, starting in September till December 2013. The survey ensured confidentiality as no personal information on the participants' identity was required to be disclosed and was strictly voluntary as mentioned in the recruitment statement of the participant for the survey. The survey consisted of 23 questions including socio-demographic and practice characteristics; whether practitioners assess and record caries risk and dietary habits in their practice; their approach toward preventive dentistry and infant oral health; use of printed educational materials in their dental office; treatment of special needs children; their preferences for different treatment modalities for restoring carious vital and non-vital anterior and posterior teeth and use of topical fluorides. Also, their preference for use of different behavior guidance techniques for uncooperative children aged 2–4 and 5–7 years as well as the use of general anesthesia and oral sedation. A question addressing the personal interest of participant regarding attending future scientific events in pediatric dentistry was also included in the survey.

The responses to the questions varied in format and consisted of dichotomous responses (i.e. Yes/No) and 4 point Likert type scales such as always (on a daily or weekly basis),

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