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RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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Search Strategy:
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1  exp Pediatric Dentistry/ (4416)
2  (pediatric dentistry or international journal of paediatric dentistry or journal of dentistry for children or journal of clinical pediatric dentistry or european journal of paediatric dentistry or european archives of paediatric dentistry)jn. (10073)
3  1 or 2 (13477)
4  limit 3 to english language (12235)
5  limit 4 to ("review" or systematic reviews) (1093)
6  review.ti. and 4 (357)
7  5 or 6 (1170)
8  limit 7 to yr="2017 -Current" (87)

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Ameloblastic fibro-odontoma (AFO) is a rare benign odontogenic tumor with the histologic features of ameloblastic fibroma (AF) but also contains enamel and dentin. It is most commonly observed in the pediatric population. Distinction between AFO and AF becomes important as ameloblastic fibromas are associated with higher recurrence rates of up to 18%, and 35% of these recurrent lesions can undergo malignant transformation to ameloblastic fibrosarcoma. Hence, for ameloblastic fibroma, conservative curettage is recommended for the initial lesion and marginal resection is considered for recurrent cases. In contrast, AFO can be treated with simple curettage and the recurrence rate is approximately seven percent. Malignant transformation of AFO is exceedingly rare. Therefore, the treatment and prognosis differs for these two histologically similar neoplasms. We present a case of a 17-year-old boy who was initially diagnosed with ameloblastic fibroma upon biopsy, with subsequent curettage specimen showing AFO, which carries a better prognosis.

All Tied Up! Influences of Oral Frenulae on Breastfeeding and their Recommended Management Strategies.


BACKGROUND: Recently, there has been an increased awareness of the role of the labial and lingual frenulae on a neonate's ability to latch and breastfeed efficiently. This critical review explores the (i) oral physiology of a baby nursing (ii) factors that can decrease a baby's ability to nurse efficiently, the problems these cause and their management and the (iii) relation between poor nursing efficacy and the risk of early childhood caries (ECC) Study design: An expansive search of the literature was performed using four electronic databases.

RESULTS AND CONCLUSIONS: Most studies assessing the role of labial and lingual frenulae on breastfeeding were of a low quality. The relation between ECC and poor nursing efficacy was found to be largely speculative. Hence, the results of these studies should be interpreted with caution. Despite the limited quality and external validity of the current evidence, in cases where
breastfeeding difficulties are identified, surgical management of labial or lingual frenulae may provide some subjective improvements in breastfeeding outcome.

Abstract
Ranula consists of a pathological process induced by ductal disruption of the minor salivary glands followed by extravasation of mucous material surrounding adjacent structures. A swelling causing breathing and feeding problems associated with tongue displacement is frequently observed. It is a disease that generally involves the younger age group. In newborns congenital ranula may occur, an uncommon variance that differs from common ranula by not relate to post-traumatic reactions. There are reports that indicate a salivary gland duct atresia as the main cause of this pathology. The aim of this study is to analyze the clinicopathological characteristics of congenital ranula by reporting a new case report of this salivary cyst and reviewing the case reports previously published in the English literature.

Abstract
BACKGROUND: There is a paucity of evidence about cognitive behaviour therapy in the management of dentally anxious children.

AIM: To systematically review evidence of the effectiveness of cognitive behaviour therapy for children with dental anxiety or dental phobia.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

DESIGN: Clinical trial registries, grey literature, and electronic databases, including The Cochrane Library, EMBASE, PubMed, Scopus, Web of Science, LILACS/BBO, and PsycINFO, were searched (April 2018). The reference lists of relevant studies were hand-searched. Randomised controlled trials that evaluated the effects of cognitive behaviour therapy on dental anxiety or on acceptance of dental treatment in dental patients up to 18 years were included. Two trained and calibrated reviewers performed the study selection and risk of bias assessment. The quality of the evidence was evaluated using the Grading of Recommendations Assessment, Development and Evaluation (GRADE).

RESULTS: Six studies with a total of 269 patients, aged 41 months to 18 years, were included. Cognitive behaviour therapy decreased level of anxiety compared to control groups and improved cooperation/behaviour, although the quality of the evidence was low.

CONCLUSIONS: Cognitive behaviour therapy produces better anxiety reduction than diverse behavioural management techniques but the evidence was of low quality and further studies in children are needed.

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Publication Type
Journal Article.
Year of Publication
2018

<5>
Unique Identifier
29984431
Title
Is parental oral health literacy a predictor of children's oral health outcomes? Systematic review of the literature. [Review]
Source
VI 1
Status
Publisher
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Abstract
BACKGROUND: The scientific evidence regarding the association between parental oral health literacy (OHL) and children's oral health is unclear.

AIM: To evaluate the scientific evidence concerning the association between parental OHL and children's oral health outcomes.

DESIGN: Eight databases were searched. Studies that evaluated oral health outcomes among children and measured parental OHL through a validated tool were included. Two independent reviewers selected studies, extracted data and analysed the risk of bias.

RESULTS: Eleven studies were included. Most (n = 6) had a high risk of bias. Most studies evaluating dental caries found association between lower parental OHL and higher prevalence/experience of dental caries. Poor oral health-related quality of life was associated with decreased parental OHL (P < 0.05). Studies diverged on the association between OHL and the number of filled, extracted teeth, and dental visits. There was no association between children's tooth brushing frequency, use of toothpaste, oral health claim, oral health expenditures and parental OHL. The literature was inconclusive regarding the association between night bottle feeding, negative parental perception of the child's oral health and OHL.

CONCLUSION: Low parental OHL was associated with dental caries among their children. It is too soon to assume an association between OHL and the remaining outcomes.
BACKGROUND: Psychosocial protective factors include dispositional and family attributes that may reduce the occurrence of dental caries.

AIM: This review analysed the evidence on the relationship between protective psychosocial factors and dental caries in children and adolescents.

DESIGN: Primary studies involving children and adolescents were searched in the following electronic databases: Medline, SCOPUS, LILACS, SciELO, and Web of Science. The reference lists were also screened. Protective psychosocial factor descriptors were in accordance with the salutogenic theory. The outcome was clinical measure of dental caries. Quality assessments were performed using the Newcastle-Ottawa scale.

RESULTS: The final search resulted in 35 studies, including 7 cohort, one case-control, and 27 cross-sectional studies. Most studies were of moderate quality. Meta-analyses revealed that low parental internal locus of control (cohort studies: OR = 1.42, 95% CI: 1.20-1.64; cross-sectional studies: OR = 1.30, 95% CI: 1.19-1.41), high parental external chance (OR = 1.20, 95% CI: 1.10-1.29), and high maternal sense of coherence (OR = 0.77, 95% CI: 0.62-0.93) were associated with dental caries in children. High social support (OR = 0.81, 95% CI: 0.68-0.93) and greater self-efficacy (OR = 1.50, 95% CI: 1.12-1.22) were also associated with dental caries in adolescents.

CONCLUSIONS: The current evidence suggests that some salutogenic factors are important protective factors of dental caries during childhood and adolescence.
BACKGROUND: The association between pulp necrosis and crown discoloration in traumatized primary teeth has not been clearly determined yet.

AIM: The study verified whether there is an association of pulp necrosis and crown discoloration in traumatized primary teeth through a systematic review and meta-analysis.

METHODS: A systematic literature search was conducted in PubMed/Medline, Lilacs/BBO, Scopus, Web of Science, Cochrane Library databases, and grey literature. A methodological quality assessment appraisal was independently conducted by two researchers. Random-effects models were employed, and heterogeneity was tested ($I^2$ index/P <= 0.05).

RESULTS: Eight studies with low risk of bias were included in the analysis. A total of 1,494 traumatized primary teeth participated in the pooled meta-analysis. Diagnosis of pulp necrosis was evaluated in 1,414 teeth through clinical and/or radiographic analyses, and the analysis demonstrated a positive association ($P = 0.0005$/$OR 8.37 [2.51, 27.90]$, $I^2 = 87\%$). Eighty teeth were diagnosed with pulp necrosis through endodontic access, and there was no statistically significant association ($P = 0.36$/$OR 2.46 [0.36, 16.94]$, $I^2 = 54\%$). The pooled meta-analysis showed a positive association ($P = 0.0003$/$OR 5.93 [2.24, 15.72]$, $I^2 = 83\%$).

CONCLUSION: The positive association between pulp necrosis and crown discoloration should be considered with caution once the diagnosis of pulp necrosis was performed by limited criteria.

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Abstract
Fluoride, one of the most celebrated ingredients for the prevention of dental caries in the 20th century, has also been controversial for its use in dentifrices and other applications. In the current review, we have concentrated primarily on early-life exposure to fluoride and how it may affect the various organs. The most recent controversial aspects of fluoride are related to toxicity of the developing brain and how it may possibly result in the decrease of intelligence quotient (IQ), autism, and calcification of the pineal gland. In addition, it has been reported to have possible effects on bone and thyroid glands. If nutritional stress is applied during a critical period of growth and development, the organ(s) and/or body will never recover once they pass through the critical period. For example, if animals are force-fed during experiments, they will simply get fat but never reach the normal size. Although early-life fluoride exposure causing fluorosis is well reported in the literature, the dental profession considers it primarily as an esthetic rather than a serious systemic problem. In the current review, we wanted to raise the possibility of future disease as...
a result of early-life exposure to fluoride. It is not currently known how fluoride will become a cause of future disease. Studies of other nutritional factors have shown that the effects of early nutritional stress are a cause of disease in later life.

**Abstract**

BACKGROUND: Bell's palsy represents a peripheral unilateral facial nerve paralysis, being an acute, idiopathic disorder, which can affect children and adolescents. Some therapeutic approaches have been proposed including facial exercises, biofeedback, photobiomodulation, electrotherapy, massage, and thermotherapy. The present report documents a rare case of Bell's palsy in an adolescent successfully treated with a new protocol of photobiomodulation, consisting of a short-term treatment.

CASE REPORT: A 13-year-old girl presented absence of facial movement on the right side when smiling, inability to close the right eye and to raise the right eyebrow, intense painful symptoms on the right side of the face, difficult in chewing and talking, and sialorrhea. She was diagnosed with an idiopathic facial paralysis or Bell's palsy associated with right masseter myalgia, and treated with three sessions of photobiomodulation using infrared laser, 100 mW output power, 100 J/cm² of energy density, 28 seconds per point, applied at the origin and insertion of the right superficial masseter muscle. The patient presented complete regression of paralysis, improvement of speech and chewing, and absence of muscular pain.

CONCLUSION: Photobiomodulation was effective to treat Bell's palsy in a pediatric patient, being a true noninvasive approach and with no side effects, although there is still no established definitive protocol.
Critical appraisal of methodological quality of Systematic Reviews and Meta-analysis in Paediatric Dentistry journals. [Review]

OBJECTIVE: To systematically assess the methodological quality of Systematic Reviews (SRs) and Meta-Analyses (MA) published in Paediatric Dentistry journals and to analyse the relationship between the authors, journals, country, review topic, and the year of publication to the methodological quality of SRs and MA.

DESIGN: Paediatric Dentistry journals ranked in the top five of the h5 index of Google Scholar Metrics were selected. SRs with MA were searched independently by two reviewers using PubMed and Scopus databases until December 2017. Methodological quality was assessed using A Measurement Tool to Assess Systematic Reviews (AMSTAR) tool. Statistical significance was set at P < 0.05 and Mann-Whitney U test and Kruskal-Wallis test was employed for comparing the AMSTAR score with the journal characteristics.

RESULTS: Finally, 24 SRs with MA were included. The overall AMSTAR score of SRs and MA published in paediatric dentistry journals was 7.08 +/- 2.41. No statistically significant differences were found between the country, journal or focus of study to the quality of SRs except the number of authors and the year of publication (P < 0.05).

CONCLUSIONS: The quality of SRs and MA in leading Paediatric Dentistry journals were evaluated with AMSTAR tool and areas where quality could be improved were identified.
**RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY**

**Publications**

1. **Title**: The Editor recommends this issue's article to the reader: A systematic review of the effects of supervised toothbrushing on caries incidence in children and adolescents.
   **Status**: In-Process
   **Authors**: Anonymous.

   **Status**: In-Data-Review
   **Authors**: Sidorowicz W; Kubasiewicz-Ross P; Dominiak M.

3. **Title**: Effects of Papacarie on children with dental caries in primary teeth: a systematic review and meta-analysis. [Review]
   **Status**: In-Process
   **Authors**: Deng Y; Feng G; Hu B; Kuang Y; Song J.

**Abstract**

**BACKGROUND:** Cherubism is a rare genetic disorder that causes prominence in the lower portion in the face. The authors present the case of an 11-year old boy showing bilateral enlargement of the mandible.

**CASE REPORT:** Computer tomography evidenced the presence of characteristic cherubism changes. The genetic test confirmed heterozygote mutation c.1244G>A (p.R415Q) in second exon coding sequence of SH3BP2 gene. Radiographic examinations performed on some close relatives of the patient revealed typical changes. The patient did not require any surgical treatment and the "wait and see" protocol was applied.

**Publication Type**

**Journal Article.**

**Year of Publication**

**2018**
Abstract

BACKGROUND: Caries in primary teeth hinder the child to bite and chew and influence their development. Papacarie has the characteristics of selective removal of decayed tissue and can preserve healthy dentine to the maximum, but its efficiency has not been critically evaluated compared to conventional method.

AIM: This review is aiming at comparing the Papacarie and traditional method in caries removal in primary dental caries with children.

DESIGN: Comprehensive literature searching at PubMed, Embase, Cochrane Central Register of Controlled Trials, and Web of Science to January 2018.

RESULTS: Six randomized controlled trials (RCTs) and four prospective controlled clinical trials (CCTs) were included. The microbiota in caries dentine was significantly reduced using the Papacarie treatment (MD = 0.57, 95% CI 0.04 to 1.09, P = 0.03), and the anxiety feeling declined more in the Papacarie group (MD = -1.01, 95% CI -1.72 to -0.30, P < 0.005). There was a greater 200.79 (MD = 200.79, 95%CI 152.50 to 249.09, P < 0.00001) increase in time taken for the Papacarie treatment compared with the conventional method.

CONCLUSION: Papacarie exerts a positive effect in reducing the bacteria and decreases the pain during caries removal in primary teeth although it costed a longer treatment time compared with the conventional method.
BACKGROUND: Over the last few years, numerous reviews and studies have awarded articaine hydrochloride local anaesthetic (LA) a superior reputation, with outcomes of different studies demonstrating a general tendency for articaine hydrochloride to outperform lidocaine hydrochloride for dental treatment. Nevertheless, there seems to be no clear agreement on which LA solution is more efficacious in dental treatment for children. There is no previous publication systematically reviewing and summarising the current best evidence with respect to the success rates of LA solutions in children.

AIMS: To evaluate the available evidence on the efficacy of lidocaine and articaine, used in paediatric dentistry.

DESIGN: A systematic search was conducted on Cochrane CENTRAL Register of Controlled Trials, MEDLINE (OVID; 1950 to June 2017), Cumulative Index to Nursing and Allied Health Literature (CINAHL; EBSCOhost; 1982 to June 2017), EMBASE (OVID; 1980 to June 2017), SCIENCE CITED (OVID; 1980 to June 2017), key journals, and previous review bibliographies through June 2017. Original research studies that compared articaine with lidocaine for dental treatment in children were included. Methodological quality assessment and assessment of risk of bias were carried out for each of the included studies.

RESULTS: Electronic searching identified 525 publications. Following the primary and secondary assessment process, six randomised controlled trials (RCT) were included in the final analysis. There was no difference between patient self-reported pain between articaine and lidocaine during treatment procedures (SMD = 0.06, P-value = 0.614), and no difference in the occurrence of adverse events between articaine and lidocaine injections following treatment in paediatric patients (RR = 1.10, P-value = 0.863). Yet, patients reported significantly less pain post-procedure following articaine injections (SMD = 0.37, P-value = 0.013). Substantial heterogeneity was noted in the reporting of outcomes among studies, with the overall quality of majority of studies being at high risk of bias.

CONCLUSIONS: There is low quality evidence suggesting that both articaine as infiltration and lidocaine IAD nerve blocks presented the same efficacy when used for routine dental treatments, with no difference between patient self-reported pain between articaine and lidocaine during treatment procedures. Yet, significantly less pain post-procedure was reported following articaine injections. There was no difference in the occurrence of adverse events between articaine and lidocaine injections following treatment in paediatric patients.

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Publication Type: Journal Article. Review.
Year of Publication: 2018
Unique Identifier: 29790777
Title: Oral management of children with Henoch-Schonlein Purpura and associated Glomerulonephritis: a scoping review.
Status: In-Data-Review
Authors: Echavarria-Garcia AC; Pozos-Guillen A; Tejeda-Nava F; Flores Arriaga JC; Garrocho-Rangel A.
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Abstract: AIM: To perform a scoping review of the existing literature in order to gather the most relevant information in the paediatric dentistry field related to the oral management of children affected by Henoch-Schonlein Purpura and associated Glomerulonephritis (HSPG).

MATERIALS AND METHODS: Using scoping review methodology for the screening and selection of valid articles, the steps of this review were the following: first, to pose a research question; second, to identify relevant studies; third, to select and retrieve the studies; fourth, to chart the critical data, and finally, to collate, summarise, and report the results from the included articles. Relevant articles published over a 25-year period, up to July 31, 2017, were identified and retrieved from four Internet databases: PubMed; EMBASE/Ovid; Ebsco/Dentistry & Oral Science Source, and the Cochrane Collaboration Library.
RESULTS: By title and abstract screening and after removing duplicates, four articles were finally included in the scoping review. According to the extracted data, the following are the most important clinical issues to be considered: (1) the disease can appear as a consequence of a dental treatment, such as those indicated for oral infectious processes; (2) children with HSPG are highly susceptible to dental caries and apical periodontitis, and (3) in affected children, oral infectious foci must be exhaustively eradicated in order to avoid the dissemination of the infection.

CONCLUSIONS: Paediatric Dentists should be aware of HSPG, because the disease can be triggered or worsen subsequent to dental treatment. Adequate treatment of oral active infectious processes, together with an exhaustive oral preventive programme and long-term patient screening, are the best management approaches for children with HSPG.

DATA
Title
Decisions on repositioning of intruded permanent incisors; a review and case presentation.
Source
Status
In-Data-Review
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Abstract
BACKGROUND: Traumatic intrusion is a luxation type of injury where the tooth is displaced along the axis of the tooth, into the alveolus. This injury is regarded as serious because of the tissue damage that it causes. The traumatic movement is associated with severe damage to the periodontal ligament, pulpal tissue, root and alveolar socket. Despite its severity, the rare occurrence of this injury in permanent teeth has resulted in limited studies of immature and mature permanent incisors. The purpose of this paper is to review this luxation injury of permanent immature incisors, and to describe its diagnosis, treatment and management. In particular, we describe the repositioning strategies used in cases of intrusion injury. These include (i) monitoring spontaneous re-eruption, (ii) active orthodontic repositioning and (iii) surgical repositioning. Firstly, monitoring spontaneous re-eruption is observing and waiting for the intruded tooth to return to its original position. This process is not a normal developmental eruption and the outcome is not always predictable, nor is the time needed for this to happen. Secondly, active orthodontic repositioning is used to describe the process of rapidly moving the intruded tooth to its original position with the aid of an orthodontic appliance. Active orthodontic repositioning is often misunderstood as normal orthodontic movement. Orthodontic movement allows for periodontal ligament remodelling, using light intermittent forces. In contrast the active orthodontic repositioning used to move intruded incisors is rapid, and the primary aim is to achieve correct tooth position as rapidly as possible. Thirdly, surgical repositioning uses surgical intervention to bring the tooth back to its original position. A case of an intruded immature permanent incisor is presented, with a particular emphasis on these critical decisions on repositioning and showing the use of the three modalities of treatment in sequence, in order to achieve an outcome.
Publication Type
Journal Article.
Year of Publication
2018

Title
Clinical, histomorphological and therapeutic features of the Van der Woude Syndrome: literature review and presentation of an unusual case.
Source
Status
In-Data-Review
Authors
Angiero F; Farronato D; Ferrante F; Paglia M; Crippa R; Rufino L; Trevisiol A; Mazzola RF; Blasi S.
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Institution
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BACKGROUND: Van der Woude syndrome (VWS), an autosomal dominant condition associated with lower lip pits and/or cleft palate, is caused by mutations in the interferon regulatory factor 6 gene (IRF6 gene). The genetic alterations identified to date that contribute to expression of the syndrome are chiefly mutations located on chromosome 1 (the largest of our chromosomes), mutations at p36 that codifies the gene GRHL (grainy-head transcription factor) and mutations involving IRF6 (interferon regulatory factor). With frequency ranging from 1:35,000 to 1:100,000, depending on ethnicity, gender, and socio-economic status, the syndrome accounts for about 2% of orofacial clefts. The clinical and histomorphological aspects of VWS are studied, a case of heterozygous female twins of whom only one was affected with VWS is reported.

CONCLUSION: This very rare case (no similar case has been reported to date) contributes further evidence on modifying factors in the expression of this condition.

Does flavoured dentifrice increase fluoride intake compared with regular toothpaste in children? A systematic review and meta-analysis. [Review]

**Source**

**Abstract**
This systematic review and meta-analysis was to determine whether dentifrice flavour increases fluoride intake compared with the use of regular toothpaste in children. An electronic search was performed in PubMed, Web of Science, Scopus, the Cochrane Library, LILACS/BBO, and grey literature followed by manual search. The methodological quality of the studies was assessed using the Cochrane risk of bias tool. In the expression of this condition.
RESULTS: For G1, the fluoride intake from RD was significantly higher than from FD [standardised mean difference = -2.57 (-3.26, -1.89), P < 0.00001]. For G2, the fluoride ingestion from RD was significantly higher than from FD [mean difference = -0.00 (-0.00, -0.00), P = 0.02].

CONCLUSIONS: There is evidence to support the null hypothesis that flavouring from dentifrice does not increase fluoride intake in young children.

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Publication Type  | Journal Article. Review.
Year of Publication | 2018

<21>
Unique Identifier 29482676
Source Pediatric Dentistry. 40(1):12-17, 2018 Jan 01.

Purpose: The purpose of this systematic review was to verify whether child and adolescent oral health affected academic performance.

METHODS: A literature search conducted in March 2017 on PubMed, Lilacs, Web of Science, and Scopus databases identified 2,009 papers, six of which were included in the final review. Quality appraisal and risk of bias were evaluated using the quality assessment tool for observational cohort and cross-sectional studies.

RESULTS: Two papers were classified as being of good quality, one as fair, and three as poor. In four publications, oral health conditions were measured by taking only dental caries into account, while in two others treatment needs and dental trauma were also considered. Although four papers concluded that children's academic performance and poor oral health were associated, the results were not considered reliable because of the high risk of bias. The two papers classified as being of good quality did not show an association between oral health and academic performance, unless mediated by socioeconomic factors.

CONCLUSION: Further well-designed studies are required to demonstrate whether children's oral health can have a negative influence on their academic performance.
BACKGROUND: Several restorative materials with specific indications are used for filling cavities in primary teeth.

AIM: To systematically review the literature in order to investigate the longevity of primary teeth restorations and the reasons for failure.

DESIGN: Electronic databases were screened, and eligible studies were hand-searched to find longitudinal clinical studies evaluating the survival of restorations (class I, class II, and crown) placed with different materials in primary teeth with at least one year of follow-up.

RESULTS: Thirty-one studies were included, and a high bias risk was observed. Overall, 12,047 restorations were evaluated with 12.5% of failure rate. A high variation on annual failure rate (AFR) was detected (0-29.9%). Composite resin showed the lowest AFRs (1.7-12.9%). Stainless steel crowns (SSC) had the highest success rate (96.1%). Class I restorations and restorations placed using rubber dam presented better AFR. The main reason for failure observed was secondary caries (36.5%).

CONCLUSIONS: An elevated number of failures were observed due to recurrent caries, highlighting the need for professionals to work with a health-promoting approach. The high variation on failure rate among the materials can be due to children's behavior during the procedure, which demands short dental appointments and a controlled environment.
BACKGROUND: The anticaries effect of supervised toothbrushing, irrespective of the effect of fluoride toothpaste, has not been clearly determined yet.

AIM: To assess the effects of supervised toothbrushing on caries incidence in children and adolescents.

DESIGN: A systematic review of controlled trials was performed (CRD42014013879). Electronic and hand searches retrieved 2046 records, 112 of which were read in full and independently assessed by two reviewers, who collected data regarding characteristics of participants, interventions, outcomes, length of follow-up and risk of bias.

RESULTS: Four trials were included and none of them had low risk of bias. They were all carried out in schools, but there was great variation regarding children's age, fluoride content of the toothpaste, baseline caries levels and the way caries incidence was reported. Among the four trials, two found statistically significant differences favouring supervised toothbrushing, but information about the magnitude and/or the precision of the effect estimate was lacking and in one trial clustering effect was not taken into consideration. No meta-analysis was performed due to the clinical heterogeneity among the included studies and differences in the reporting of data.

CONCLUSIONS: There is no conclusive evidence regarding the effectiveness of supervised toothbrushing on caries incidence.

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Oral physicians frequently encounter medically compromised patients in their everyday practice and a sizable number of these patients are in urgent need of specialized care. One such medically specialized category is that of patients suffering from hydrocephalus. A large number of medical reports and citations in support of surgical care of the hydrocephalic disorder are available in literature. However, reports on dental studies offer contradictory statements on the relationship between hydrocephalic shunts and oral manoeuvres. The present narrative review aims to delineate the historical journey of the association between shunt infections and dental procedures, decode the existing controversies and provide updated information on antibiotic prophylaxis prior dental treatment for hydrocephalic patients.

**Abstract**

Dental caries is the single most common chronic disease of childhood in the United States. Access to dental care is one of the barriers to improved oral health for children. Primary care providers who routinely treat children have an established role in prevention and early identification of health problems; thus, they are ideal front-line providers who can detect oral health discrepancies and begin the process of care and prevention.

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**Title**

Open Up and Let Us In: An Interprofessional Approach to Oral Health. [Review]

**Source**


**Authors**

Sedrak MM; Doss LM.

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**Abstract**

Dental caries is the single most common chronic disease of childhood in the United States. Access to dental care is one of the barriers to improved oral health for children. Primary care providers who routinely treat children have an established role in prevention and early identification of health problems; thus, they are ideal front-line providers who can detect oral health discrepancies and begin the process of care and prevention.

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**Title**

Dental fear/anxiety among children and adolescents. A systematic review.

**Source**


**Authors**

Cianetti S; Lombardo G; Lupatelli E; Pagano S; Abraha I; Montedori A; Caruso S; Gatto R; De Giorgio S; Salvato R.

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Abstract
AIM: The aim of this paper was to review the published scientific literature to quantify the prevalence and mean score of dental fear/anxiety (DFA) in children/adolescents and its variation according to several variables.

MATERIALS AND METHODS: Cross-sectional and cohort studies published from 2000 to 2014, that measured DFA in children/adolescents (aged 0-19 years), in the general population, or visiting private or public dental services (general or pediatric) or attending school and kindergarten, were searched, with specific terms, in 3 electronic databases (Medline, Embase, Web Of Science). Primary data, collected with specific questionnaires of demonstrated reliability and/or validity, were extracted.

RESULTS: After screening 743 abstracts and evaluating 164 full-text publications, 36 articles were selected. Dental fear/anxiety prevalence rates were 12.2%, 10.0%, 12.2%, 11.0% and 20.0% for the CFSS-DS, DAS, MDAS, DFS, and DFSS-SF scores, respectively. In the studies that used MCDAS Dental fear/prevalence rates varied from 13.3% to 29.3%. In the studies that used CFSS-DS ratings, the prevalence and the mean score of dental fear/anxiety was lower in Northern Europe than the remaining countries, the prevalence decreased with increasing age and the frequency was higher in females than males.

CONCLUSIONS: Dental fear/anxiety is a common problem in children/adolescents worldwide, therefore, new strategies to overcome this relevant children/adolescent condition should be encouraged.
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Year of Publication
2017

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Policy on Early Childhood Caries (ECC): Unique Challenges and Treatment Options.
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Policy on Interim Therapeutic Restorations (ITR).
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Year of Publication
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Policy on the Use of Silver Diamine Fluoride for Pediatric Dental Patients.
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Year of Publication
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Anonymous.
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Policy on Emergency Oral Care for Infants, Children, Adolescents, and Individuals with Special Health Care Needs.
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2017

<48>
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29099359
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Space maintenance for the pediatric patient. [Review]
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VI 1
Status
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Authors
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Publication Type
Journal Article. Review.
Year of Publication
2017

<49>
Unique Identifier
29122066
Title
Oral and Dental Aspects of Child Abuse and Neglect. [Review]
Source
VI 1
Status
MEDLINE
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Abstract
In all 50 states, health care providers (including dentists) are mandated to report suspected cases of abuse and neglect to social service or law enforcement agencies. The purpose of this report is to review the oral and dental aspects of physical and sexual abuse and dental neglect in children and the role of pediatric care providers and dental providers in evaluating such conditions. This report addresses the evaluation of bite marks as well as perioral and intraoral injuries, infections, and diseases that may raise suspicion for child abuse or neglect. Oral health issues can also be associated with bullying and are commonly seen in human trafficking victims. Some medical providers may receive less education pertaining to oral health and dental injury and disease and may not detect the mouth and gum findings that are related to abuse or neglect as readily as they detect those involving other areas of the body. Therefore, pediatric care providers and dental providers are encouraged to collaborate to increase the prevention, detection, and treatment of these conditions in children.
Publication Type
Journal Article. Review.
Year of Publication
2017
<50>
Unique Identifier
29122065
Title
Evidence-based Dental Care: Perspective on Levels of Evidence. [Review]
Source
VI 1
Status
MEDLINE
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The objective of this review was to consider compilation of evidence from literature and its interpretation. Evidence-based dentistry during its implementation has sometimes emphasized randomized clinical trials with exclusion of all other evidence. Systematic reviews must compile evidence from all study types, with the collected evidence processed through the Grading of Recommendations Assessment, Development and Evaluation system prior to their application in clinical decision-making. Evidence-based clinical practice should be based upon transparently reported evidence from all study types.
Publication Type
Journal Article. Review.
Year of Publication
2017
<51>
Unique Identifier
29070150
Title
Use of Vital Pulp Therapies in Primary Teeth with Deep Caries Lesions.
Source
VI 1
Status
METHODS: The basis of the guideline’s recommendations was evidence from “Primary Tooth Vital Pulp Therapy: A Systematic Review and Meta-Analysis.” A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and trial databases to identify randomized controlled trials and systematic reviews addressing peripheral issues of vital pulp therapies such as patient preferences of treatment and impact of cost. Quality of the evidence was assessed through the Grading of Recommendations Assessment, Development, and Evaluation approach; the evidence-to-decision framework was used to formulate a recommendation.

RESULTS: The panel was unable to make a recommendation on superiority of any particular type of vital pulp therapy owing to lack of studies directly comparing these interventions. The panel recommends use of mineral trioxide aggregate (MTA) and formocresol in pulpotomy treatments; these are recommendations based on moderate-quality evidence at 24 months. The panel made weak recommendations regarding choice of medicament in both IPT (moderate-quality evidence [24 months], low quality evidence [48 months]) and DPC (very-low-quality evidence [24 months]). Success of both treatments was independent of type of medicament used. The panel also recommends use of ferric sulfate (low-quality evidence), lasers (low-quality evidence), sodium hypochlorite (very-low-quality evidence), and tricalcium silicate (very-low-quality evidence) in pulpotomies; these are weak recommendations based on low-quality evidence. The panel recommended against the use of calcium hydroxide as pulpotomy medicament in primary teeth with deep caries lesions. Conclusions and practical implications: The guideline intends to inform the clinical practices with evidence-based recommendations on vital pulp therapies in primary teeth with deep caries lesions. These recommendations are based upon the best available evidence to-date.

Publication Type: Journal Article. Practice Guideline.

Year of Publication: 2017
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Abstract

BACKGROUND: This manuscript presents evidence-based guidance on the use of 38 percent silver diamine fluoride (SDF) for dental caries management in children and adolescents, including those with special health care needs. A guideline workgroup formed by the American Academy of Pediatric Dentistry developed guidance and an evidence-based recommendation regarding the application of 38 percent SDF to arrest cavitated caries lesions in primary teeth.

TYPES OF STUDIES REVIEWED: The basis of the guideline's recommendation is evidence from an existing systematic review "Clinical trials of silver diamine fluoride in arresting caries among children: A systematic review." (JDR Clin Transl Res 2016;1[3]:201-10). A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and gray literature databases to identify randomized controlled trials and systematic reviews reporting on the effect of silver diamine fluoride and address peripheral issues such as adverse effects and cost. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach was used to assess the quality of the evidence and the evidence-to-decision framework was employed to formulate a recommendation.

RESULTS: The panel made a conditional recommendation regarding the use of 38 percent SDF for the arrest of cavitated caries lesions in primary teeth as part of a comprehensive caries management program. After taking into consideration the low cost of the treatment and the disease burden of caries, panel members were confident that the benefits of SDF application in the target populations outweigh its possible undesirable effects. Per GRADE, this is a conditional recommendation based on low-quality evidence. Conclusions and practical implications: The guideline intends to inform the clinical practices involving the application of 38 percent SDF to enhance dental caries management outcomes in children and adolescents, including those with special health care needs. These recommended practices are based upon the best available evidence to-date. A 38 percent SDF protocol is included in Appendix II.

Publication Type


Year of Publication

2017

<53>

Unique Identifier

29179384

Title


Source


Status

MEDLINE

Authors

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Traumatic injuries to the primary dentition present special problems and the management is often different as compared with the permanent dentition. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the task group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion or majority decision of the task group. Finally, the IADT board members were giving their opinion and approval. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care for management of primary teeth injuries. The IADT cannot and does not guarantee favorable outcomes from strict adherence to the guidelines, but believe that their application can maximize the chances of a positive outcome.

Diangelis AJ; Andreasen JO; Ebeleseder KA; Kenny DJ; Trope M; Sigurdsson A; Andersson L; Bourguignon C; Flores MT; Hicks ML; Lenzi AR; Malmgren B; Moule AJ; Pohl Y; Tsukiboshi M.

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Traumatic dental injuries (TDIs) of permanent teeth occur frequently in children and young adults. Crown fractures and luxations are the most commonly occurring of all dental injuries. Proper diagnosis, treatment planning and followup are important for improving a favorable outcome. Guidelines should assist dentists and patients in decision making and for providing the best care effectively and efficiently. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the IADT board members. The guidelines represent the best current evidence based on literature search and professional opinion. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care of TDIs. In this first article, the IADT Guidelines for management of fractures and luxations of permanent teeth will be presented.

Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016.

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Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016.

Anonymous.
The safe sedation of children for procedures requires a systematic approach that includes the following: no administration of sedating medication without the safety net of medical/dental supervision, careful presedation evaluation for underlying medical or surgical conditions that would place the child at increased risk from sedating medications, appropriate fasting for elective procedures and a balance between the depth of sedation and risk for those who are unable to fast because of the urgent nature of the procedure, a focused airway examination for large (kissing) tonsils or anatomic airway abnormalities that might increase the potential for airway obstruction, a clear understanding of the medication's pharmacokinetic and pharmacodynamic effects and drug interactions, appropriate training and skills in airway management to allow rescue of the patient, age- and size-appropriate equipment for airway management and venous access, appropriate medications and reversal agents, sufficient numbers of staff to both carry out the procedure and monitor the patient, appropriate physiologic monitoring during and after the procedure, a properly equipped and staffed recovery area, recovery to the presedation level of consciousness before discharge from medical/dental supervision, and appropriate discharge instructions. This report was developed through a collaborative effort of the American Academy of Pediatrics and the American Academy of Pediatric Dentistry to offer pediatric providers updated information and guidance in delivering safe sedation to children.

METHODS: The basis of the guideline's recommendations was evidence from "Primary Tooth Vital Pulp Therapy: A Systematic Review and Meta-Analysis." (Pediatr Dent 2017;15;39[1]:16-23.) A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and trial databases to identify randomized controlled trials and systematic reviews addressing peripheral issues of vital pulp therapies such as patient preferences of treatment and impact of cost. Quality of the evidence was assessed through the Grading of Recommendations Assessment, Development, and Evaluation approach; the evidence-to-decision framework was used to formulate a recommendation.

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RESULTS: The panel made a conditional recommendation regarding the use of 38 percent SDF for the arrest of cavitated caries lesions in primary teeth as part of a comprehensive caries management program. After taking into consideration the low cost of the treatment and the disease burden of caries, panel members were confident that the benefits of SDF application in the target populations outweigh its possible undesirable effects. Per GRADE, this is a conditional recommendation based on low-quality evidence. Conclusions and practical implications: The guideline intends to inform the clinical practices involving the application of 38 percent SDF to enhance dental caries management outcomes for children and adolescents, including those with special health care needs. These recommended practices are based upon the best available evidence to-date. A 38 percent SDF protocol is included in Appendix II.

Publication Type
Year of Publication
2017
**BDA LIBRARY MEDLINE SEARCH**

**RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY**

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**<60>**

Unique Identifier  
27796062

Title  
Oral health status of children and young adults with autism spectrum disorders: systematic review and meta-analysis. [Review]

Source  

VI 1

Status  
MEDLINE

Authors  
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Abstract  
**BACKGROUND:** Individuals with special needs are often affected by oral disorders such as dental caries and periodontal disease. Current data regarding prevalence of these conditions in individuals with autism spectrum disorders (ASD) are controversial.

**AIM:** To conduct a systematic review and meta-analysis to verify the prevalence of dental caries and periodontal disease in individuals with ASD, especially children and young adults.

**DESIGN:** Searches were conducted through MEDLINE/PubMed, Web of Science, and Scopus databases in December 2015. Studies were included if fulfilled the following eligibility criteria: to evaluate the oral health status of individuals with ASD; to be an observational study; and to assess the prevalence of dental caries and/or periodontal disease. Meta-analyses were conducted considering prevalence of dental caries and periodontal disease in individuals as outcome.

**RESULTS:** Search strategy identified 928 potentially relevant articles and seven of them were included in this review. All included studies reported dental caries prevalence, and the pooled prevalence was 60.6% (95% CI: 44.0-75.1). Moreover, only three studies showed prevalence of periodontal disease, resulting in pooled prevalence of 69.4% (95% CI: 47.6-85.0).

**CONCLUSION:** Prevalence of dental caries and periodontal disease in children and young adults with ASD can be considered as high, pointing to the need for oral health policies focused on these individuals.

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**<61>**

Unique Identifier  
28708273

Title  
Pediatric obesity-related curricular content and training in dental schools and dental hygiene programs: systematic review and recommendations. [Review]

Source  

VI 1

Status  
MEDLINE

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Abstract

OBJECTIVES: The authors conducted a systematic review to determine: a) What dental schools and dental hygiene programs are doing to promote knowledge and skills related to addressing childhood obesity and to reduce consumption of sugar-sweetened beverages (SSBs) and b) What else these schools and programs could do to better equip future oral health professionals to address childhood obesity and reduce consumption of SSBs.

METHODS: The authors searched PubMed, Scopus, Education Full Text (EBSCOHost), and ERIC (EBSCOHost) to identify peer-reviewed publications reporting on obesity or dietetic-related curricula in dental and dental hygiene education within the last 20 years. Three studies met inclusion and exclusion criteria. Outcomes of the identified studies were abstracted and summarized independently by two investigators.

RESULTS: The first study describes a 2009 survey of pediatric dentistry residents. Approximately, half had received formal training yet they lacked essential knowledge or skills for managing children who were obese. The second study describes nutrition-related coursework offered in the second year of a predoctoral dental school curriculum in Saudi Arabia, and the third study reports on the development of an "oral health rotation" dietetic internship in a pediatric dentistry clinic, in the context of interprofessional education (IPE).

CONCLUSIONS: Evidence of dental schools' and dental hygiene programs' efforts to address obesity and SSB consumption in children in their curricula is scant, while Commission on Dental Accreditation standards make sporadic mentions of diet and nutrition. Opportunities exist to leverage existing resources and innovative, experiential approaches, including IPE, to formally and effectively address this important issue in predoctoral oral health education.

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Nicoloso GF; Potter IG; Rocha RO; Montagner F; Casagrande L.

BACKGROUND: Dental trauma and deep caries are frequent findings in children and adolescents that may lead to pulp necrosis in young permanent teeth. As a consequence, the root stops its development, and managing these immature teeth becomes challenging due to the presence of open apaxes and fragile dentinal walls.

AIM: We aimed to carry out a systematic review including a meta-analysis to compare the endodontic treatments available in the management of immature necrotic permanent teeth and determine which one provides the best clinical and radiographic outcomes.
Recent Reviews Related To Paediatric Dentistry

Design: The literature was screened via PubMed/MEDLINE, the Cochrane Central Register of Controlled Trials (CENTRAL), and ClinicalTrials databases until August 2015 to select randomized clinical trials that compared at least two different treatments regarding immature necrotic permanent teeth comprising clinical and radiographic success as outcome. Two reviewers independently performed the screening and evaluation of the articles. A total of 648 studies were retrieved from the databases, in which only 14 were selected to full-text analysis by the appliance of inclusion criteria. After the exclusion criteria, the remaining seven studies had their data extracted and assessed for bias risk. Pooled-effect estimates were obtained comparing clinical and radiographic success rates among MTA Versus other treatments.

Results: Evaluation of clinical (Z = 2.32, P = 0.02, OR = 5.37, 95% CI: 1.29-22.23, I = 0%) and radiographic (Z = 2.45, P = 0.01, OR = 4.31, 95% CI: 1.34-13.82, I = 0%) outcomes favored the MTA (control group) when compared to other endodontic treatments (P < 0.05). No evidence of heterogeneity was detected among the studies (I < 50%), whereas a moderate risk of bias was identified in five of them.

Conclusions: Although almost all of the identified studies presented moderate risk of bias, MTA apexification seems to produce overall better clinical and radiographic success rates among the endodontic treatment available in immature necrotic permanent teeth.

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Publication Type

Year of Publication
2017
Evidence of pharmacological and non-pharmacological interventions for the management of dental fear in paediatric dentistry: a systematic review protocol. [Review]

Cianetti S; Paglia L; Gatto R; Montedori A; Lupatelli E.

METHODS AND ANALYSIS: In our systematic review, we will include randomised trials, controlled clinical trials and systematic reviews (SRs) of trials that investigated the effects of pharmacological and non-pharmacological interventions to decrease dental anxiety in children and adolescents. We will search the Cochrane Database of Systematic Reviews, the Cochrane Database of Abstracts of Reviews of Effects, the Cochrane Central Register of Controlled Trials, PubMed, PsycINFO, Cumulative Index to Nursing and Allied Health Literature and the Web of Science for relevant studies. Pairs of review authors will independently review titles, abstracts and full texts identified by the specific literature search and extract data using a standardised data extraction form. For each study, information will be extracted on the study report (eg, author, year of publication), the study design (eg, the methodology and, for SRs, the types and number of studies included), the population characteristics, the intervention(s), the outcome measures and the results. The quality of SRs will be assessed using the A Measurement Tool to Assess Reviews instrument, while the quality of the retrieved trials will be evaluated using the Cochrane Handbook for Systematic Reviews of Interventions criteria.

ETHICS AND DISSEMINATION: Approval from an ethics committee is not required, as no participants will be included. Results will be disseminated through a peer-reviewed publication and conference presentations.
RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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Comments

Comment in: Evid Based Dent. 2017 Oct 27;18(3):72-73; PMID: 29075030

Abstract

OBJECTIVES: This systematic review and meta-analysis evaluated the association between developmental defects of enamel and dental caries in the primary dentition.

STUDY SELECTION: Observational studies that examined the association between developmental defects of enamel and dental caries in the deciduous dentition were included. Additionally, meta-analysis, funnel plots and sensitivity analysis were employed to synthesize the available evidence. Multivariable meta-regression analysis was performed to explore heterogeneity among studies.

DATA: A total of 318 articles were identified in the electronic searches. Of those, 16 studies were included in the meta-analysis. Pooled estimates revealed that children with developmental defects of enamel had higher odds of having dental caries (OR 3.32; 95%CI 2.41-4.57), with high heterogeneity between studies (I² 80%). Methodological characteristic of the studies, such as where it was conducted, the examined teeth and the quality of the study explained about 30% of the variability.

Concerning type of defect, children with hypoplasia and diffuse opacities had higher odds of having dental caries (OR 4.28; 95%CI 2.24-8.15; OR1.42; 95%CI 1.15-1.76, respectively).

CONCLUSIONS: This systematic review and meta-analysis demonstrates a clear association between developmental defects of enamel and dental caries in the primary dentition.

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Publication Type
Journal Article. Review.

Year of Publication
2017

Unique Identifier
27385489

Title
Traumatic dental injury research: on children or with children?. [Review]

Source

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Abstract

BACKGROUND AND AIM: It is widely acknowledged that children should participate in healthcare decisions, service development and even setting research agendas. Dental traumatology is a major component of paediatric dentistry practice and research. However, little is known about young patients’ contribution to new knowledge in this field. The aim of the study was to
establish the extent to which children are involved in contemporary dental trauma research and to evaluate the quality of the related literature.

MATERIAL AND METHODS: A systematic review of the dental trauma literature was conducted from 2006 to 2014. The electronic databases, MEDLINE and Scopus, were used to identify relevant studies. The selected papers were independently examined by five calibrated reviewers. Studies were categorized by the degree of children's involvement and appraised using a validated quality assessment tool.

RESULTS: The initial search yielded 4374 papers. After application of the inclusion and exclusion criteria, only 96 studies remained. Research on children accounted for 87.5% of papers, and a proxy was involved in 4.2%. Children were engaged to some degree in only 8.3% of studies, and there were no studies where children were active research participants. In the quality assessment exercise, papers scored, on average, 57% (range = 14-86%).

CONCLUSION: There is scope to encourage more active participation of children in dental trauma research in the future. Furthermore, there are some areas where the quality of research could be improved overall.

Aesthetic preformed paediatric crowns: systematic review. [Review]

BACKGROUND: Different aesthetic preformed crowns (APC) are proposed to restore decayed and damaged primary teeth because the stainless steel crowns (SCCs) do not satisfy parents concerned about aesthetic.

AIM: The objective was to evaluate the clinical effectiveness of all types of APC for restoring primary teeth compared with conventional filling materials or other types of crowns.

DESIGN: Relevant articles were searched in electronic databases of PubMed via MEDLINE and the Cochrane central register of controlled trials. Two review authors independently assessed the risk of bias in the included articles and extracted data.

RESULTS: From 555 potentially eligible articles, seven relevant articles were included. The overall risk of bias was high for all the studies. SCCs cannot be replaced by APC, such as the open-faced SSCs and the pre-veneered SCCs, for restoring badly decayed primary molars. Zircon crowns were assessed only in primary incisors and compared with pre-veneered SCCs and resin composite strip crowns. After a follow-up of only 6 months, Zircon crowns gave significantly better results than the others with regard to gingival health and crown fractures.

CONCLUSION: Due to the small number of RCTs on this topic and their risk of bias, future RCTs should be carried out in primary teeth.
Change in children's oral health-related quality of life following dental treatment under general anaesthesia for the management of dental caries: a systematic review. [Review]

Objective: This systematic review aimed to assess change in OHRQoL in children following treatment under GA for the management of dental caries.

Methods: A comprehensive search was conducted to identify articles which were assessed against inclusion criteria before data extraction. Studies involving children under 16 years, having treatment for dental caries under GA, were considered eligible. Included studies were quality assessed.

Results: Twenty studies were included, which demonstrated significant heterogeneity. Most studies employed a pre-test-post-test design. All but one study relied on proxy reports of OHRQoL. Only half the studies used instruments validated in the study population. Whereas all studies reported improved OHRQoL overall, some subscales showed changes which were not significant or worsened OHRQoL. The scientific quality of the studies varied considerably.

Conclusion: Heterogeneity of included papers limited the conclusions which could be drawn. Treatment under GA appears to result in overall improvements in proxy-reported OHRQoL; however, there is a need for further high-quality studies employing validated, child-reported measures of OHRQoL.

Effectiveness of Xylitol in Reducing Dental Caries in Children. [Review]

Background: Dental caries has significant impact on children and their families and may necessitate treatment under general anaesthesia (GA). The use of oral health-related quality-of-life (OHRQoL) measures enables evaluation of dental treatment from a patient's perspective.

Objective: This systematic review aimed to assess change in OHRQoL in children following treatment under GA for the management of dental caries.

Methods: A comprehensive search was conducted to identify articles which were assessed against inclusion criteria before data extraction. Studies involving children under 16 years, having treatment for dental caries under GA, were considered eligible. Included studies were quality assessed.

Results: Twenty studies were included, which demonstrated significant heterogeneity. Most studies employed a pre-test-post-test design. All but one study relied on proxy reports of OHRQoL. Only half the studies used instruments validated in the study population. Whereas all studies reported improved OHRQoL overall, some subscales showed changes which were not significant or worsened OHRQoL. The scientific quality of the studies varied considerably.

Conclusion: Heterogeneity of included papers limited the conclusions which could be drawn. Treatment under GA appears to result in overall improvements in proxy-reported OHRQoL; however, there is a need for further high-quality studies employing validated, child-reported measures of OHRQoL.
PURPOSE: The purpose of this study was to evaluate the effectiveness of xylitol in reducing dental caries in children compared to no treatment, a placebo, or preventive strategies.

METHODS: MEDLINE via PubMed, Web of Science, and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from January 1, 1995 through Sept. 26, 2016 for randomized and controlled trials on children consuming xylitol for at least 12 months. The primary endpoint was caries reduction measured by mean decayed, missing, and filled primary and permanent surfaces/teeth (dmfs/t, DMFS/T, respectively). The I² and chi-square test for heterogeneity were used to detect trial heterogeneity. Meta-analyses were performed and quality was evaluated using GRADE profiler software.

RESULTS: Analysis of five randomized controlled trials (RCTs) showed that xylitol had a small effect on reducing dental caries (standardized mean difference [SMD] equals -0.24; 95 percent confidence interval [CI] equals -0.48 to 0.01; P = 0.06) with a very low quality of evidence and considerable heterogeneity. Studies with higher xylitol doses (greater than four grams per day) demonstrated a medium caries reduction (SMD equals -0.54; 95 percent CI equals -1.14 to 0.05; P = 0.07), with these studies also having considerable heterogeneity and very low quality of evidence.

CONCLUSIONS: The present systematic review examining the effectiveness of xylitol on caries incidence in children showed a small effect size in randomized controlled trials and a very low quality of evidence that makes preventive action of xylitol uncertain.
INTRODUCTION: Several experimental studies in the literature have tested different biology-based methods for inhibiting or decreasing orthodontic tooth movement (OTM) in humans. This systematic review investigated the effects of these interventions on the rate of tooth movement.

STUDY DESIGN: Electronic [MedLine; SCOPUS; Cochrane Library; OpenGrey; Web of Science] and manual searches were conducted up to January 26th, 2016 in order to identify publications of clinical trials that compared the decreasing or inhibiting effects of different biology-based methods over OTM in humans. A primary outcome (rate of OTM deceleration/inhibition) and a number of secondary outcomes were examined (clinical applicability, orthodontic force used, possible side effects). Two reviewers selected the studies complying with the eligibility criteria (PICO format) and assessed risk of bias [Cochrane Collaboration's tool]. Data collection and analysis were performed following the Cochrane recommendations.

RESULTS: From the initial electronic search, 3726 articles were retrieved and 5 studies were finally included. Two types of biology-based techniques used to reduce the rate of OTM in humans were described: pharmacological and low-level laser therapy. In the first group, human Relaxin was compared to a placebo and administered orally. It was described as having no effect on the inhibition of OTM in humans after 32 days, while the drug tenoxicam, injected locally, inhibited the rate of OTM by up to 10% in humans after 42 days. In the second group, no statistically significant differences were reported, compared to placebo, for the rate of inhibition of OTM in humans after 90 days of observation when a 860 nm continuous wave GaAlAs slow-level laser was used.

CONCLUSIONS: The currently available data do not allow us to draw definitive conclusions about the use of various pharmacological substances and biology-based therapies in humans able to inhibit or decrease the OTM rate. There is an urgent need for more sound well-designed randomized clinical trials in the field.
measure was overall success (combined clinical and radiographic). Three authors determined the included RCTs, performed data extraction, and assessed the risk of bias (ROB). Meta-analysis and assignment of quality of evidence by Grading of Recommendations Assessment, Development and Evaluation approach were done.

RESULTS: Forty-one articles qualified for meta-analysis (six IPT, four DPC, and 31 pulpotomy) from 322 screened articles. The 24-month success rates were: IPT=94.4 percent, and the liner material (Calcium hydroxide [CH]/bonding agents) had no effect on success (P=0.88), based on a moderate quality of evidence; DP =88.8 percent, and the capping agent (CH/alternate agent) did not affect success (P=0.56), based on a low quality of evidence. The combined success rate for all pulpotomies was 82.6 percent based on 1,022 teeth. Mineral trioxide aggregate (MTA) (89.6 percent) and formocresol (FC) (85.0 percent) success rates were the highest of all pulpotomy types and were not significantly different (P=0.15), with a high quality of evidence. MTA’s success rate (92.2 percent) was not significantly different from FC (87.1 percent), both with a moderate quality of evidence. IPT and FC success rates were significantly better than CH (P=0.0001), with a moderate quality of evidence. At 18 months, sodium hypochlorite (NaOCl) success rate was significantly less than FC (P=0.01) with a low quality of evidence.

CONCLUSIONS: The highest level of success and quality of evidence supported IPT and the pulpotomy techniques of MTA and FC for the treatment of deep caries in primary teeth after 24-months. DPC showed similar success rates to IPT and MTA or FC pulpotomy, but the quality of the evidence was lower. Systematic Review Registration Number: PROSPERO 2015: CRD42015006942.
Successful practice of pediatric dentistry depends on the establishment of a good relationship between the dentist and the child. Such a relationship is possible only through effective communication. Pediatric dentistry includes both an art and a science component. The focus has been mostly on the technical aspects of our science, and the soft skills we need to develop are often forgotten or neglected. This paper throws light on the communication skills we need to imbibe to be a successful pediatric dentist.

A new terminology "Pediatric Dentistese" has been coined similar to motherese, parentese, or baby talk. Since baby talk cannot be applied to all age groups of children, pediatric dentistese has been defined as "the proactive development-based individualized communication between the pediatric dentist and the child which helps to build trust, allay fear, and treat the child effectively and efficiently."

Effects of Fluoride on Early Childhood Caries: A Systematic Review. [Review]

Source

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Abstract
A growing number of parents are refusing topical fluoride for their children during preventive dental and medical visits. This nascent clinical and public health problem warrants attention from dental professionals and the scientific community. Clinical and community-based strategies are available to improve fluoride-related communications with parents and the public. In terms of future research priorities, there is a need to develop screening tools to identify parents who are likely to refuse topical fluoride and diagnostic instruments to uncover the reasons for topical fluoride refusal. This knowledge will lead to evidence-based strategies that can be widely disseminated into clinical practice.

Pediatric Dental-Focused Interprofessional Interventions: Rethinking Early Childhood Oral Health Management. [Review]

Source

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Abstract
Evidence of effectiveness for prevention of early childhood caries suggests that parent engagement needs to occur perinatally and that unconventional providers, helping professionals like social workers and dietitians and lay health workers like community health advisors, are needed to help parents, especially those with low social capital, cope with stress, acquire skills, and provide opportune care for their children.
health workers, are most effective. This finding, coupled with the emergence of population-based accountable care, value-based purchasing with global payments, understanding of common risk factors for multiple conditions, and social determinants of health behaviors, calls for a rethinking of early childhood oral health care. A population-based model that incorporates unconventional providers is suggested together with research needed to achieve caries reductions in at-risk families.

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Publication Type
Journal Article. Review.

Year of Publication
2017

<77>
Unique Identifier
28577638

Title
Pediatric Workforce Issues. [Review]

Source

Status
MEDLINE

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Abstract
Untreated dental disease remains one of the most prevalent health conditions for children, driven in part by disparities in access to care. This article examines evidence-based workforce strategies being used to facilitate better access to pediatric health services and to improve oral health status and outcomes for children. The workforce strategies described in this article include promising new models in the dental field, with new and existing providers as well as emerging workforce models outside of the dental field. Case studies for some of these workforce strategies are also presented. Future directions and health policy implications are considered.

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Publication Type
Journal Article. Review.

Year of Publication
2017

<78>
Unique Identifier
28429483

Title
Management of periodontal health in children: pediatric dentistry and periodontology interface. [Review]

Source

Status
MEDLINE

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Abstract
The oral health of children and adolescents mirrors their general health. Because oral health care is often delivered in isolation from general health care, oral signs and symptoms do not always alert practitioners to their significance beyond the mouth. An important example of this is the association of a higher risk of dental caries and periodontal disease in children and adolescents with overweight, obesity and prediabetic conditions. Oral-health practitioners need to consider the health conditions that their patients may have. This will aid in diagnosis and alert the practitioner to oral conditions that may not resolve without general health-care intervention also. This paper reviews the more common oral conditions involving periodontal health in children and adolescents, and discusses the diagnosis of these conditions, potential associated health problems and the roles of pediatric
dentistry and periodontology in the management of these conditions with the goal of children entering adulthood with healthy dentitions.

Nonpharmacologic Intervention on the Prevention of Pain and Anxiety During Pediatric Dental Care: A Systematic Review.

BACKGROUND: Nonpharmacologic interventions may be used to reduce fear and anxiety during dental treatment.

OBJECTIVES: To systematically review trials on the effect of nonpharmacologic interventions in behavior, anxiety, and pain perception in children undergoing dental treatment.

DATA SOURCES: Medline, Scopus, Web of Science and CINAHL, Google Scholar, and studies' reference lists.

PARTICIPANTS AND INTERVENTIONS: Studies performed with children and adolescents that evaluated the effect of interventions on children's behavior, anxiety, and pain perception during dental treatment were included.

STUDY APPRAISAL METHODS: Independent quality assessment of the studies was carried out following the classification categories present on the Cochrane Handbook for Development of Systematic Reviews of Intervention.

RESULTS: Twenty-two articles, reporting 21 studies, were selected. Most studies tested distraction techniques. Eight studies presented bias and results were not considered. The remaining 13 studies had control groups with inactive controls, and 4 also included a variation of the intervention. Of the 4 studies assessing behavior, 3 found difference between intervention and control. Anxiety was evaluated by 10 studies: 4 found differences between intervention and control and 2 found differences between interventions. Five studies investigated pain perception: 3 found difference comparing active versus inactive interventions. In 1 of the 3, variations in the intervention decreased pain perception.

CONCLUSIONS: More research is needed to know whether the techniques are effective for improving behavior and reducing children's pain and distress during dental treatment. However, the majority of the techniques improved child's behavior, anxiety, and pain perception.
Abstract
Objective: To describe the stakeholder-engaged processes used to develop, specify, and validate 2 oral health care electronic clinical quality measures.

Materials and Methods: A broad range of stakeholders were engaged from conception through testing to develop measures and test feasibility, reliability, and validity following National Quality Forum guidance. We assessed data element feasibility through semistructured interviews with key stakeholders using a National Quality Forum-recommended scorecard. We created test datasets of synthetic patients to test measure implementation feasibility and reliability within and across electronic health record (EHR) systems. We validated implementation with automated reporting of EHR clinical data against manual record reviews, using the kappa statistic.

Results: A stakeholder workgroup was formed and guided all development and testing processes. All critical data elements passed feasibility testing. Four test datasets, representing 577 synthetic patients, were developed and implemented within EHR vendors' software, demonstrating measure implementation feasibility. Measure reliability and validity were established through implementation at clinical practice sites, with kappa statistic values in the "almost perfect" agreement range of 0.80-0.99 for all but 1 measure component, which demonstrated "substantial" agreement. The 2 validated measures were published in the United States Health Information Knowledgebase.

Conclusion: The stakeholder-engaged processes used in this study facilitated a successful measure development and testing cycle. Engaging stakeholders early and throughout development and testing promotes early identification of and attention to potential threats to feasibility, reliability, and validity, thereby averting significant resource investments that are unlikely to be fruitful.

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Abstract
Systematic reviews and meta-analysis seek to answer a pre-framed research question to lead to a valid answer through a systematic, explicit and reproducible method of locating, identifying, including and appraising appropriate trials. The results are synthesized considering the methodological rigor of included trials. While the meta-analysis quantitatively pools the results from individual included studies, the systematic review summarizes the findings as qualitative conclusions. These reviews are crux of evidence based dentistry for various stake-holders, i.e., clinicians, researchers and policy-makers. Although the meticulous methodology of systematic review and meta-analysis minimizes the elements of bias, yet the validity and reliability of their findings should be explored prior to translating their conclusions to practice. The goal of this paper is to familiarize readers with rationale, conduct and appraisal of systematic review and meta-analysis. Further, guidance is provided on tracing potential elements of bias in the review to enable readers to judge the quality of evidence generated from the review.

Publication Type
Journal Article.
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RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

Unique Identifier 28494610
Title Paediatric laser dentistry. Part 1: General introduction. [Review]
Status MEDLINE
Authors Caprioglio C; Olivi G; Genovese MD.
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Abstract
AIM: Knowledge of the physical characteristics of different laser lights and optical and thermal properties of oral tissues is very important to understand the interaction of dental lasers with biological tissues. Choosing the correct dental laser is crucial to match specific wavelengths with target chromophores of different tissues; this affinity makes laser irradiation selective and therefore minimally invasive. Various types of lasers are used in dentistry, offering a viable alternative to low and high-speed handpieces and surgical blades, and also minimising fear and discomfort of the patient. Lasers can provide innovative and minimally invasive therapies in different branches of dentistry including preventive and restorative dentistry, traumatic injury treatments and surgical procedures. Laser has also biostimulating and anti-inflammatory effects, as well as analgesic effect.
Publication Type Journal Article. Review.
Year of Publication 2017

Unique Identifier 28494606
Title Split-mouth design in Paediatric Dentistry clinical trials. [Review]
Status MEDLINE
Authors Pozos-Guillen A; Chavarria-Bolanos D; Garrocho-Rangel A.
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Institution Pozos-Guillen, A. Pediatric Dentistry Postgraduate Program, Faculty of Dentistry, Universidad Autonoma of San Luis Potosi, San Luis Potosi, SLP, Mexico.
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Abstract
AIM: The aim of this article was to describe the essential concepts of the split-mouth design, its underlying assumptions, advantages, limitations, statistical considerations, and possible applications in Paediatric Dentistry clinical investigation.
DISCUSSION: In Paediatric Dentistry clinical investigation, and as part of randomised controlled trials, the split-mouth design is commonly used. The design is characterised by subdividing the child's dentition into halves (right and left), where two different treatment modalities are assigned to one side randomly, in order to allow further outcome evaluation. Each participant acts as their own control by making within-patient rather than between-patient comparisons, thus diminishing inter-subject variability and increasing study accuracy and power. However, the main problem with this design comprises the potential contamination of the treatment effect from one side to the other, or the "carry-across effect"; likewise, this design is not indicated when the oral disease to be treated is not symmetrically distributed (e.g. severity) in the mouth of children. Thus, in spite of its advantages, the split-mouth design can only be applied in a limited number of strictly selected cases.
CONCLUSION: In order to obtain valid and reliable data from split mouth design studies, it is necessary to evaluate the risk of carry-across effect as well as to carefully analyse and select adequate inclusion criteria, sample-size calculation and method of statistical analysis.
Publication Type Journal Article. Review.
**Microleakage of Sealants after Phosphoric Acid, Er:YAG Laser and Air Abrasion Enamel Conditioning: Systematic Review and Meta-Analysis.** [Review]


**Authors:** Fumes AC; Longo DL; De Rossi A; Fidalgo TKDS; de Paula E Silva FWG; Borsatto MC; Kuchler EC.

**Abstract:**

**PURPOSE:** The aim of this systematic review and meta-analysis is to answer the focused question: Does the application of phosphoric acid, Er:YAG laser and air abrasion enamel conditioning methods previous to the oclusal sealant application in human permanent molars influence the microleakage?

**STUDY DESIGN:** A literature research was carried out in the Pubmed Medline, Web of Science, Scopus and Cochrane databases using with the MeSH terms and keyword search strategy. A supplemental hand search of the references of retrieved articles was also performed. Inclusion criteria comprised ex vivo studies (extracted teeth) with permanent human teeth that used chemical (phosphoric acid) or mechanical (Er:YAG laser and air abrasion) conditioning methods previous the sealant application. The studies should evaluate microleakage as an outcome. Meta-analysis pooled plot were obtained comparing the microleakage after pre-treatment with phosphoric acid, Er:YAG and air abrasion enamel conditioning for sealant application using RevMan software.

**RESULTS:** The search resulted in 164 articles, 55 records were excluded because they were duplicated. The analysis of titles and abstracts resulted in the exclusion of 105 studies. Four studies were included in the systematic review and the meta-analysis. According to the risk of bias evaluation, the four studies were considered low risk of bias. The meta-analysis showed that phosphoric acid had lower microleakage than Er:YAG laser (p < 0.001) and air abrasion (p < 0.001), with heterogeneity of I² = 0% and I² = 71%, respectively. It was not found statistical difference when compared phosphoric acid and phosphoric acid combined with Er:YAG laser and air abrasion (p > 0.05).

**CONCLUSION:** The evidence supports that the pretreatment with phosphoric acid leads lower microleakage in oclusal sealants than Er:YAG laser and air abrasion.

**Publication Type:** Journal Article. Meta-Analysis. Review.

**Year of Publication:** 2017

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**Fundamentals in Biostatistics for Investigation in Pediatric Dentistry: Part II -Biostatistical Methods.**


**Authors:** Pozos-Guillen A; Ruiz-Rodriguez S; Garrocho-Rangel A.

**Abstract:**

The main purpose of the second part of this series was to provide the reader with some basic aspects of the most common biostatistical methods employed in health sciences, in order to better understand the validity, significance and reliability of the results from any article on Pediatric Dentistry. Currently, as mentioned in the first paper, Pediatric Dentists need basic biostatistical knowledge to be able to apply it when critically appraise a dental article during the Evidence-based Dentistry (EBD) process, or when participating in the development of a clinical study with dental pediatric patients. The EBD process provides a systematic approach of collecting, review and analyze current and relevant published evidence about oral health care in order to answer a particular clinical question; then this evidence should be applied in everyday practice. This second report describes the most commonly used statistical methods for analyzing and interpret collected data, and the methodological criteria to be considered.
when choosing the most appropriate tests for a specific study. These are available to Pediatric Dentistry practicants interested in reading or designing original clinical or epidemiological studies.

**Publication Type**
Journal Article.

**Year of Publication**
2017

**Unique Identifier**
28250031

**Title**
Faculty Development for Metro New York City Postdoctoral Dental Program Directors: Delphi Assessment and Program Response.

**Source**

**Authors**
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**Abstract**
Faculty development for dental academicians is essential to cultivate a continuous faculty workforce, retain existing faculty members, enhance their teaching skill sets, and remain responsive to changing program requirements and curricular reforms. To maximize the utility of dental faculty development, it is important to systematically assess and address faculty members' perceived training needs. The aims of this study were to determine priority topics among one group of postdoctoral program directors and to translate those topics into faculty development programs as part of Columbia University's Health Resources and Services Administration (HRSA)-sponsored faculty training program for primary care educators. The study was conducted in 2013-16. A Delphi consensus technique was implemented with three sequential surveys of 26 New York City metropolitan area general, pediatric, and public health dentistry residency program directors. On the first survey, the five respondents (19% response rate) identified 31 topics. On the second survey, 17 respondents (response rate 65%) rated the 15 most important topics. In the third and final round, 19 respondents (73% response rate) ranked teaching research methods and teaching literature reviews as the topics of greatest interest. Overall, the responses highlighted needs for faculty development on teaching research methods, motivating trainees, trainee evaluation, and clinical care assessment. Based on these results, a series of six Faculty Forums was developed and implemented for dental educators in the metropolitan area, starting with the topic of teaching research methods. The process flow used for assessing training needs and developing and evaluating training can be applied to a variety of populations of educators.

**Publication Type**
Journal Article.

**Year of Publication**
2017

**Unique Identifier**
27098755

**Title**
A systematic review on the association between molar incisor hypomineralization and dental caries. [Review]

**Source**

**Authors**
Americano GC; Jacobsen PE; Soviero VM; Haubek D.

**Authors Full Name**
Americano, Gabriela Caldeira Andrade; Jacobsen, Pernille Endrup; Soviero, Vera Mendes; Haubek, Dorte.

**Institution**
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BACKGROUND: Molar incisor hypomineralization (MIH) is a defect of enamel. The lower strength of the enamel can lead to fractures that predispose for plaque accumulation and caries.

AIM: This systematic review aimed to assess the association between MIH and caries.

DESIGN: Studies involving children of all ages, which reported results on MIH and caries in the permanent dentition, were considered eligible. A search was performed in PubMed and was limited to the period from January 2003 to November 2015, and to studies written in English. Reviews, meta-analyses, and case reports were excluded. The studies were evaluated by use of the Newcastle-Ottawa Quality Assessment Scale (NOS).

RESULTS: Seventeen publications were compiled in the review. Most publications reported that children with MIH have higher caries experience. One study did not observe a difference in DMF values among children affected or not by MIH. Three studies reported that children with MIH were 2.1 to 4.6 times more likely to have caries in the permanent dentition than children without MIH.

CONCLUSIONS: A significant association between MIH and caries was found. The results should, however, be interpreted cautiously due to the lack of high-quality studies. The present systematic review confirms the need for further well-designed studies.