

# Factors affecting children's adherence to regular dental attendance

## A systematic review

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**T**he prevalence of early childhood caries (ECC) is five times higher than that of asthma,<sup>1</sup> making it the most common chronic childhood disease.<sup>2</sup> ECC is a serious public health problem that is largely preventable<sup>3,4</sup> through adequate adherence to oral hygiene, proper diet and feeding practices, and regular preventive dental visits.<sup>5-7</sup> Poor oral health has a significant impact on children's growth and development, overall well-being and quality of life.<sup>8</sup>

According to the American Academy of Pediatric Dentistry (AAPD), children should have their first dental visit within six months of the first tooth's eruption and no later than their first birthday.<sup>9</sup> The AAPD guideline also states that the "most common interval of examination is six months. . . ."<sup>9</sup> The regular use of professional dental services, especially preventive services, has been associated with better oral health,<sup>10</sup> because regular dental visits permit early detection and better treatment of oral diseases, as well as raise parental awareness of the causes and prevention of oral disease.<sup>11,12</sup> Nonadherence to dentists' advice has been recognized as a significant problem. Kühner and Raetzke<sup>13</sup> reported that a low percentage of patients followed recommended preventive periodontal regimens. Regular dental attendance might have a significant influence on the uptake of preventive measures related to oral hygiene and diet by increasing parental education and awareness of oral disease and its prevention.

To date, adherence studies have focused primarily on medical regimens and treatment,<sup>14,15</sup> whereas adherence to dental regimens and preventive practices has received little attention. Despite the importance of preventive dental measures in children, researchers in few studies have evaluated pediatric patients' adherence to these measures.<sup>16,17</sup> These researchers also paid more attention to preventive measures concerning oral hygiene rather than regular dental attendance. Moreover, the existing

## ABSTRACT

**Background.** Parents' adherence to regular dental attendance for their young children plays an important role in improving and maintaining children's oral health. The authors conducted a systematic review to determine the factors that influence parental adherence to regular dental attendance for their children.

**Type of Studies Reviewed.** The authors searched nine electronic databases to May 2013. They included quantitative and qualitative studies in which researchers examined factors influencing dental attendance in children 12 years or younger. The authors considered all emergency and nonemergency visits. They appraised methodological quality through the Health Evidence Bulletins Wales methodological quality assessment tool.

**Results.** The authors selected 14 studies for the systematic review. Researchers in these studies reported a variety of factors at the patient, provider and system levels that influenced dental attendance. Factors identified at the patient level included parents' education, socioeconomic status, behavioral beliefs, perceived power and subjective norms. At the provider level, the authors identified communication and professional skills. At the system level, the authors identified collaborations between communities and health care professionals, as well as a formal policy of referring patients from family physicians and pediatricians to dentists.

**Practical Implications.** Barriers to and facilitators of parents' adherence to regular dental attendance for their children should be identified and considered when formulating health promotion policies. Further research is needed to investigate psychosocial determinants of children's adherence to regular dental visits.

**Key Words.** Dental care for children; dental care utilization; pediatric dentistry; preventive dentistry. JADA 2014;145(8):817-828.

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literature on adherence to dental visits is mainly empirical. van Dulmen and colleagues<sup>18</sup> conducted a systematic review, the results of which showed that a poor definition of adherence or the lack of a theoretical framework resulted in failed attempts to improve adherence to medical treatment in the short term. Thus, innovations in oral health theory and practice are needed urgently, especially those that target young children, because their adherence depends on caregivers' willingness to comply with the indicated regimen.<sup>19</sup>

For these reasons, it is important to understand fully the factors that facilitate or impede children's adherence to regular dental attendance. Therefore, the purpose of this review was to systematically identify and analyze the facilitators of and barriers to children's adherence to regular dental attendance.

## METHODS

We reported this systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement for reporting systematic reviews of health sciences.<sup>20</sup>

**Eligibility criteria.** For this review, we considered studies meeting the following predefined eligibility criteria. Studies should have included examination of the barriers to and facilitators of dental attendance in emergency or nonemergency situations (that is, treatment visits, preventive care visits) among children 12 years or younger, with no restrictions on sex or language. We chose this age group because the highest prevalence of caries with the lowest rate of dental attendance was found in this group.<sup>3,21</sup> Moreover, regular dental attendance by children in this age group depends on the willingness of parents and caregivers.<sup>16</sup> With respect to study design, we included quantitative, qualitative and mixed-methods studies. We excluded studies in which investigators reported on dental attendance of children older than 12 years, unless they reported data separately for different age groups.<sup>22</sup>

**Data sources and searches.** We conducted comprehensive searches up to May 31, 2013, by using the following electronic bibliographic databases: PubMed (1946 to March 29, 2013), Embase (1974 to 2013, week 12), Cochrane Database of Systematic Reviews (2005 to first quarter 2013), Database of Abstracts of Reviews of Effects (first quarter 2013), Cochrane Central Register of Controlled Trials (first quarter 2013), PASCAL (1984 to 2013, week 13), CINAHL (1937 to March 2013) and Scopus (1973 to March 2013).

We developed the search strategy with the help of a specialized health sciences librarian at the John W. Scott Health Sciences Library, University of Alberta, Edmonton, Alberta, Canada. We established search terms in PubMed and then adjusted them as required for each electronic database. The search terms included the following: "dental attendance," "dental visit," "adherence,"

"compliance," "barriers," "facilitators" and "obstacles." For a more detailed account, see eTable 1 (available as supplemental data to the online version of this article [found at <http://jada.ada.org/content/145/8/817/suppl/DC1>]). In addition, we screened by hand the reference lists of the selected articles for any articles that might have been omitted. We did not apply any restrictions regarding publication year or language.

**Study selection.** Two authors (P.B. and H.S.) independently reviewed the list of titles and abstracts for inclusion. They then retrieved the full articles for the final selection process. If an abstract was judged to contain insufficient information to make a decision about inclusion, the two authors reviewed the full article. They then applied the same selection criteria to the complete articles that had been applied in the initial selection phase. The reviewers discussed any discrepancies in decisions until they reached a consensus.

**Data collection process.** The same investigators (P.B. and H.S.) performed data extraction and resolved any discrepancies via discussion until consensus was reached. If the reviewers deemed any article to be unclear after a full evaluation, they contacted the authors of the study for clarification.

**Data items.** The two investigators extracted data from each of the selected studies on the basis of study design, participants' ages, sample size, recruitment method, and barriers to and facilitators of dental attendance. Quantitative studies involved the use of data from closed-ended questions, with researchers using numerical and statistical tools to appraise facilitators of adherence to regular dental attendance among children. In contrast, investigators in qualitative studies used open-ended interviews or focus groups to elicit information regarding both barriers to and facilitators of adherence to regular dental visits.

**Risk of bias in individual studies.** The reviewers (P.B. and H.S.) assessed the methodological quality of selected studies, and they resolved discrepancies via discussion until reaching a consensus. They used the Health Evidence Bulletins Wales methodological quality assessment tool to appraise the quality of the selected studies.<sup>23</sup> We included the following methodological quality items in our assessment: methods of participant selection, sample size calculation, assessment methods, efforts to address potential sources of bias and description of statistical methods (including those used to control for confounding data).

**Summary measures and synthesis of results.** The study included factors—classified as barriers or facilitators—that affected adherence to regular dental attendance. The final outcome was a list of identified

**ABBREVIATION KEY.** AAPD: American Academy of Pediatric Dentistry. ECC: Early childhood caries. NA: Not applicable. PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses. TPB: Theory of planned behavior.

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