



## Review article

# Impact of parent-related factors on dental caries in the permanent dentition of 6–12-year-old children: A systematic review



Santhosh Kumar<sup>a,\*</sup>, Jyothi Tadakamadla<sup>a</sup>, Jeroen Kroon<sup>a</sup>, Newell W. Johnson<sup>b</sup>

<sup>a</sup> Population and Social Health Research Programme, Menzies Health Institute Queensland and School of Dentistry and Oral Health, Griffith University, Queensland, Australia

<sup>b</sup> Dental Research, Population and Social Health Research Programme, Menzies Health Institute Queensland, Griffith University, Queensland, Australia

## ARTICLE INFO

## Article history:

Received 28 April 2015

Received in revised form 27 November 2015

Accepted 26 December 2015

## Keywords:

Children

Dental caries

Family environment

Permanent dentition

Socio-economic status

## ABSTRACT

**Objective:** To synthesise data from the literature on the effects of various parent-related characteristics (socio-demographic, behavioural and family environment) on dental caries in the permanent dentition of children.

**Data:** Available studies in which the effects of parent-related characteristics on dental caries experience in the permanent dentition of children aged 6–12 years were evaluated.

**Sources:** PubMed, Medline via OVID and CINAHL Plus via EBSCO, restricted to scientific articles, were searched in April 2015. English language and time filters (articles published from 2000) were used.

**Study selection:** A total of 4162 titles were retrieved, of which 2578 remained after duplicates were removed. After review of titles and their abstracts by two independent reviewers, 114 articles were considered relevant for full text review. Of these, 48 were considered for final inclusion. Data extraction was performed by two authors using piloted data extraction sheets.

**Conclusions:** Most of the literature on determinants of dental caries has been limited to socio-economic and behavioural aspects: we found few studies evaluating the effects of family environment and parental oral hygiene behaviour. Children belonging to lower socio-economic classes experienced more caries. In more than half the studies, children of highly educated, professional and high income parents were at lower risk for dental caries. There were conflicting results from studies on the effect of variables related to family environment, parents' oral hygiene behaviour and parent's disease status on dental caries in their children.

© 2015 Elsevier Ltd. All rights reserved.

## 1. Introduction

Untreated dental caries in the permanent dentition is the most prevalent condition affecting more than one-third of the world population [1], utmost burden being observed in 6 year old children [2]. Dental caries and other oral diseases are influenced by many factors, ranging from political and economic policies on a macro level to socio-economic, genetic [3], behavioural, psychosocial factors at an individual level [4]. In addition to these individual and macro level determinants, parental socio-economic characteristics have been found to influence dental caries [5] and even oral health related quality of life [6] in children. These

socio-economic variables account for approximately 50% of the differences in the prevalence of dental caries in children at age 12 [7].

Most of the literature on predictors of dental caries in children is limited to individual (socio-behavioural, lifestyle and biological factors) and community level factors. However, there is a need to study the effects of family circumstances on dental caries in children as their oral health-related behaviours [8–10] and oral health are either directly or indirectly influenced by their family [11]. Few systematic reviews have been published on the influence of parental characteristics on dental caries in children. One such study found that lower social class, lower parental education, lower family income, single-parent families, higher birth order and big family size are associated with higher prevalence and/or severity of early childhood caries [5]. More recently another systematic review provided evidence on the influence of parents'

\* Corresponding author.

E-mail address: [santoshkumar.tadakamadla@griffithuni.edu.au](mailto:santoshkumar.tadakamadla@griffithuni.edu.au) (S. Kumar).

knowledge, attitudes and behaviour on dental caries in children and adolescents [12]. In addition, family functioning has also been found to be associated with childhood dental caries [13].

There are systematic reviews on the effect of parental influences on early childhood caries [5] and effects of parental oral hygiene behaviour on dental caries in their children [12]. However, there is no synthesised evidence on the effects of various parent related characteristics on caries in the permanent dentitions of children aged 6–12 years which would help in better understanding of the determinants of dental caries in this important age group. This review aims to synthesise data from the literature on the effect of various parent-related characteristics (socio-demographic, behavioural and family environment) on dental caries in the permanent dentition of 6–12-year-old children.

## 2. Methods

The current systematic review conforms to the guidelines set by Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) [14] and has been registered with the Prospective Register for Reporting Systematic Reviews (registration number-CRD42014010513).

### 2.1. Eligibility criteria

The PICO (participants, interventions, comparators and outcomes) question for this review was “What are the parent related characteristics that influence dental caries levels in permanent dentitions of 6–12 year old children”. All the cross-sectional, longitudinal and experimental studies that were published in English from 2000 to March 2015 were considered for inclusion. Reviews, personal opinions and letters were excluded. Suitability of the studies was based on the predetermined inclusion criteria of (1) the study population comprised children aged 6–12 years; and (2) caries was assessed in the permanent dentition. For study populations with mixed age groups of children and adolescents, abstracts were only considered for inclusion when the results for each age category were presented separately. Abstracts that did not state anything about socio-economic status and parental characteristics were excluded.

### 2.2. Search strategy

Databases searched in April 2015 were PubMed, Medline via OVID and CINAHL Plus via EBSCO. The search was restricted to scientific articles using filters of language (English) and time (from year 2000 to March 2015). The search strategy used is shown in Table 1. A truncation for the term “child” was used. A manual search for literature was not attempted.

### 2.3. Study selection

Two authors (SK and JT) screened the titles and abstracts independently. When the information in the abstract was inconclusive, to decide on its suitability for inclusion (for instance,

age of the study sample has not been provided), it was considered for full text review. There was no disagreement between the reviewers on determining the suitability of articles for inclusion.

### 2.4. Data collection

Data extraction was done using piloted data extraction sheets by two authors (SK and JT). Data collected was rechecked for accuracy by the senior authors (JK and NWJ). Data on study design and setting, sample size, age, parental characteristics, statistical tests, findings on association of dental caries with parental characteristics, caries diagnosis criteria and caries outcome measure were extracted from each study. Studies included exhibited clinical heterogeneity as they differed widely in design, method of caries diagnosis, participants, parental characteristics assessed and the measure of dental caries used as outcome. Therefore, no single effect size estimates could be calculated. Quantitative systematic review with single effect size estimates (Meta-analysis) of all the studies was not possible as the parent characteristics were diverse, ranging from education to home environment. Moreover, subgroup analysis with respect to each parent characteristic (e.g. education) was also not possible due to non-uniform definition of the characteristic and its categorisation. Further, the definition of the outcome measure (e.g. prevalence of decayed teeth, total decayed teeth, and total caries count) was different between the studies.

### 2.5. Quality assessment criteria

Quality assessment criteria for the articles included were adopted from a previous systematic review [5]. Scoring was done for each article on three different criteria:

(1) Caries diagnosis: based on the method of caries diagnosis used in the study, caries at the pre-cavity level was given a score of 1 and those at cavity level and subject/parent reported caries were scored 2 and 3 respectively.

(2) Representativeness of the study sample: samples collected from random clusters or strata of countries or provinces were scored 1 while those on towns and cities were scored 2. Studies on convenience samples that were randomly chosen were scored 3 and those on convenience samples with no randomisation were scored 4.

(3) Statistical adjustment: studies that statistically adjusted for the effect of confounders when evaluating the influence of independent variables on dental caries were scored 1 while those lacking statistical adjustment were scored 2.

A fourth criteria on study design was added to these where a score of 1 was allocated to longitudinal studies or studies that used a life course approach, while a score of 2 was allocated to cross-sectional studies.

## 3. Results

A total of 4162 titles were retrieved from electronic searches in PubMed (2492), Medline via OVID (926) and CINAHL Plus via

**Table 1**  
Search strategy used in the present study.

#1	Dental caries
#2	Child* OR children
#3	Socioeconomic factors OR parent–child relations OR health knowledge, attitudes, practice OR education OR occupations OR income OR social environment OR family OR family relations OR housing OR educational status OR parents OR mothers OR fathers
#4	#1 and #2 and #3

Download English Version:

<https://daneshyari.com/en/article/3144854>

Download Persian Version:

<https://daneshyari.com/article/3144854>

[Daneshyari.com](https://daneshyari.com)