INPLASY PROTOCOL

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None declared.

Relationship between dental caries and passive smoking in preschool children: A systematic review and meta-analysis

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Review question / Objective: **What is the relationship between tooth decay and passive smoking in preschool children?**
Condition being studied: **Caries is one of the main common diseases of the mouth and one of the most common diseases of humans. Smoking is one of the main triggers of oral diseases and a major cause of dental caries. The rate of caries in children is increasing, especially in preschool children, whose passive smoking is easily overlooked. So this study was conducted to assess the relationship between passive smoking and dental caries in preschool children.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 September 2021 and was last updated on 24 September 2021 (registration number INPLASY202190083).

INTRODUCTION

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between passive smoking and dental caries in preschool children.

METHODS

Search strategy: The search string was: ((dental caries OR caries) AND (children OR Preschool Children OR Preschooler) AND (Tobacco OR passive smoke OR passive smoking OR secondhand smoke OR secondhand smoking OR household smoke OR household smoking OR involuntary smoke OR involuntary smoking OR parental smoke OR parental smoking OR maternal smoke OR maternal smoking)). No restriction on publication date, but restriction on the language of publication inEnglish.

Participant or population: Preschool children.

Intervention: Passive smoking.

Comparator: Preschool children's dental caries with or without exposure to the passive smoking.

Study designs to be included: Cross-sectional, randomized controlled, retrospective, or prospective studies.

Eligibility criteria: 1) published research on passive smoking exposure and dental caries in a population of preschool children (≤71 months or <6 years); 2) inclusion of studies as cross-sectional, randomized controlled, retrospective, or prospective studies; 3) the included literature requires exposure to passive smoking compared to unexposed items, and outcome indicators with relevant dental caries records; 4) published in English.

Information sources: A thorough electronic search was conducted in PubMed, EMBASE, Cochrane and Web of Science databases to identify relevant research. And a manual search was used to fill in gaps to determine the completeness of relevant research searches. Studies published up to September 2021 were included. No restriction on publication date, but restriction on the language of publication in English.

Main outcome(s): Dental caries in preschool children is associated with exposure to tobacco.

Additional outcome(s): Tooth decay in preschool children is closely related to whether their mothers are exposed to tobacco.

Data management: Literature was screened independently by 2 researchers based on inclusion exclusion criteria and then merged. For controversial literature, the literature that was difficult to identify was assessed either by discussion or by asking a third party. The title and abstract were read first for primary screening, and after excluding literature that clearly did not meet the inclusion criteria. Further reading of the full text of the literature that might meet the inclusion criteria was re-screened. Cohen's kappa was used to determine the credibility of the researcher. The following elements were extracted from each article: the surname of first author, year of publication, type of study, search site, sample size, mean age and age range, exposure evaluation, caries evaluation, outcome, and judgment of irrelevant variables. These data were extracted independently by two researchers, and any disagreement between them was discussed and evaluated by a third party and finally agreed upon.

Quality assessment / Risk of bias analysis: The quality of all included studies was assessed using the Newcastle-Ottawa Scale (NOS) .Selection, comparability and exposure (case-control studies) or outcome (cohort studies) were the criteria used to determine NOS. It can be classified into 3 major categories: selection (S), comparability (C), and Exposure (E). It was divided into 9 items, which included the following groups:Selection of subjects: S1) representation of the exposed group; S2) representation of the non-exposed group; S3) exposure factors identified; S4)

adequate control definition. Comparability between groups: the design and statistical analysis consider the comparability of the exposed and unexposed groups (C1, C2).Exposure Outcome: E1) Evaluation of outcome indicators; E2) Sufficient length of follow-up; E3) Completeness of the exposed versus unexposed group follow-up.

Strategy of data synthesis: Using the RevMan 5.3 software provided by the Cochrane Collaboration. Odds Ratio (OR) was used for counts. Mean Difference (MD) was used for continuous variables, both expressed as effect values with 95% confidence interval (CI). Subgroup analysis or one-study removal was performed according to possible heterogeneity factors between studies. Statistical heterogeneity was assessed by the P, I2 test: if P>0.1, I2≤50%, homogeneity was considered good, and the fixed effect model; if P50%, and statistical heterogeneity is large, random effect model is used, and a sensitivity analyses or subgroup analyses, and funnel plots were used to analyze the presence of publication bias for those analyzing ≥10 documents.

Subgroup analysis: Dental caries in preschool children with dmft and the relationship between parental smoking

Sensitivity analysis: Sensitivity analysis will be conducted to assess the reliability and robustness of determine whether exposure to passive smoking of the prevalence of dental caries in preschool children .A summary table will report the results of the sensitivity analyses.

Language: Language is limited with English.

Country(ies) involved: China.

Other relevant information: Funnel plot will be performed to analyze the existence of publication bias if 10 or more studies are included in this meta-analysis. If the funnel chart has poor symmetry, it indicates publication bias.

Keywords: Dental caries; Passive smoking ; Preschool children; Systematic review; Meta-analysis.

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