



The importance of prenatal dental care: a concise systematic review

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Abstract

Introduction: Prenatal dental care is extremely important, as it requires a series of specific care for pregnant patients. There is a need for specific care with the health of the mouth and informing the patient of essential care for her and her baby's health. Also, the microorganisms that cause these diseases can migrate to the uterus and cause premature births. Several studies show that dental care was considered safe for the mother and fetus throughout the entire period of pregnancy. **Objective:** To carry out a brief systematic review of the literature to elucidate the main considerations for success during the treatment of oral health in pregnant women. **Methods:** The research was carried out from May 2021 to June 2021 and developed based on Scopus, PubMed, Science Direct, Scielo, and Google Scholar, following the Systematic Review-PRISMA rules. The quality of the studies was based on the GRADE instrument and the risk of bias was analyzed according to the Cochrane instrument. **Results:** A total of 244 articles were found. A total of 76 articles were evaluated in full and 19 were included and evaluated in the present study. A total of 3 Studies with a High Risk of Bias and 1 Study with Uncertain Risk. Studies have suggested a protective effect of prenatal oral health care against the onset of caries in infancy and up to before 4 years of age. The transport of *S. mutans* in children was also significantly reduced in the intervention group. Children exposed to the use of maternal substances had a higher incidence of hospitalization for dental caries than unexposed children. Thus, inadequate prenatal education in oral health can negatively impact the quality of oral hygiene in children. It is imperative to develop strategies to

improve oral health and develop a health system strengthening by interprofessional collaboration in the prenatal phase of pregnant women. Furthermore, an inverse relationship was observed between 25(OH)D levels and the number of decayed primary teeth.

Conclusion: Taking care of oral health is part of the daily rhythm of personal hygiene. The monitoring of a dental surgeon during pregnancy is considered to prevent and treat the pregnant woman's oral diseases and clarify the doubts of future mothers since the baby's oral health begins to establish itself during the gestational period.

Keywords: Prenatal oral health care. Dental care. Pregnant. Caries disease. Preventions.

Introduction

Prenatal dental care is extremely important, as it requires a series of specific care for pregnant patients. At the beginning of treatment, a detailed anamnesis must be done and when there is confirmation of the pregnancy, the professional must know and apply specific care for it, because in this period in the woman's life, a series of hormonal changes occur, triggering the patient's general and oral health diseases such as hyposalivation, periodontal diseases, among others [1].

Still, given the information collected in the anamnesis, specific care is needed with the health of the mouth and informing the patient of essential care for her and her baby's health, avoiding complications during pregnancy and even at the birth of the child [1,2]. Added to this, in pregnancy, due to hormonal changes, the prevalence of periodontal diseases increases. Also, the microorganisms that cause these diseases can migrate to

the uterus and cause premature births. Diet during pregnancy can also have a deleterious effect on the pregnant woman's oral and dental health, as well as on the child's teeth [3].

Several studies show that dental care was considered safe for the mother and fetus throughout the entire period of pregnancy. Also, dental care can prevent premature birth and possible future damage to the newborn's teeth [1-5].

Knowing the lack of knowledge among those responsible for the well-being of the mother and fetus during pregnancy [6-10], the publication of a scientific document of recommendations for dental care during pregnancy is suggested, therefore, the objective This work was to perform a brief systematic review of the literature in order to elucidate the main considerations for success during the treatment of oral health in pregnant women.

Methods

Study Design

The rules of the Systematic Review-PRISMA Platform (Transparent reporting of systematic reviews and meta-analysis-[HTTP://www.prisma-statement.org/](http://www.prisma-statement.org/)) were followed [11].

Data sources and research strategy

The search strategies for this systematic review were based on the keywords (MeSH Terms): "Prenatal oral health care. Dental care. Pregnant. Caries disease. Preventions". The research was carried out from May 2021 to July 2021 and developed based on Scopus, PubMed, Science Direct, Scielo, and Google Scholar. Also, a combination of the keywords with the booleans "OR", "AND", and the operator "NOT" were used to target the scientific articles of interest.

Study Quality and Bias Risk

The quality of the studies was based on the GRADE instrument [12] and the risk of bias was analyzed according to the Cochrane instrument [13]. Two independent reviewers carried out research and study selection. Data extraction was performed by reviewer 1 and fully reviewed by reviewer 2. A third investigator decided on some conflicting points and made the final decision to choose the articles.

Results and Discussion

A total of 244 articles were found on the prenatal dental care. Initially, duplication of articles was excluded. After this process, the abstracts were evaluated and a

new exclusion was performed, removing articles that did not include the theme of this article. A total of 76 articles were evaluated in full and 19 were included and evaluated in the present study (Figure 1).

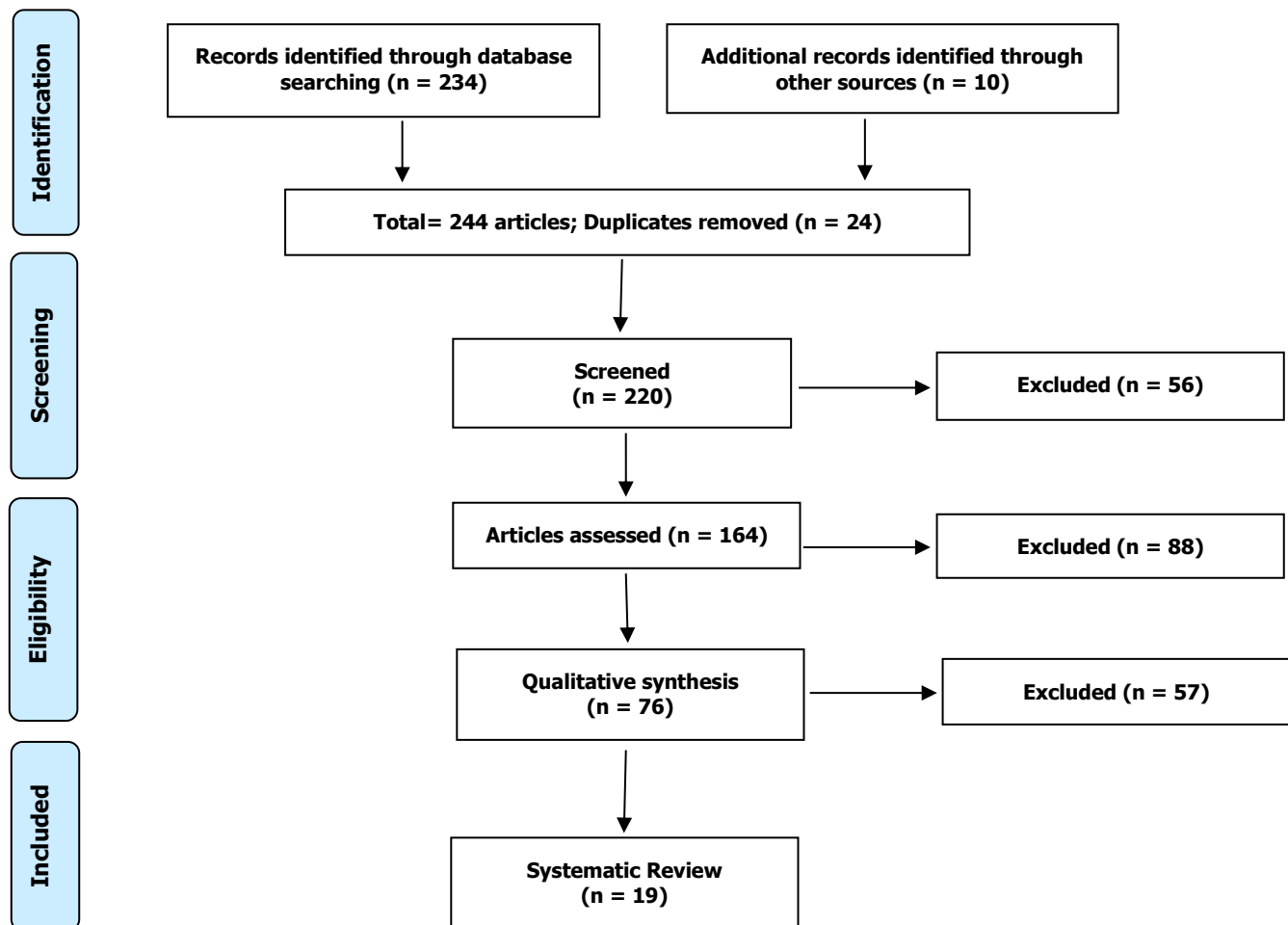
Considering the Cochrane Tool for Risk of Bias, the Overall Assessment in 3 Studies with a High Risk of Bias and 1 Studies with Uncertain Risk. The domains that presented the highest risk of bias were related to the number of participants in each study addressed, and the uncertain risk was related to the safety and efficacy of the prenatal dental care. Also, there was an absence of the source of funding in 2 studies and 1 study did not disclose information about the conflict of interest statement.

After analyzing the studies, it was found that during the gestational period the maternal organism undergoes a set of physiological changes such as variations in systolic and diastolic pressures, digestive changes, and difficulty in oral hygiene. Psychological changes such as depression, stress, and anxiety [3-5]. Faced with numerous changes in the woman's body, multidisciplinary monitoring becomes important. In this sense, the importance of prenatal dental care is highlighted, linking to poor hygiene habits by pregnant women, which can cause premature birth and low birth weight [3,6].

It is important to emphasize that these changes can lead to aggravation of caries and also the appearance of gum disease, especially when there is carelessness with oral hygiene during the gestational period. For this reason, several authors claim that pregnancy is not responsible for the manifestation of oral changes such as caries and periodontal disease [6,7,9,10].

In this sense, oral changes that occur during pregnancy are due to increased secretion of salivary glands, hypervascularization of the periodontium, difficulty in oral hygiene, predisposition to nausea and vomiting, and increased food intake. Such alterations can be explained by hormonal changes in the levels of estrogen and progesterone that will affect oral physiology, modifying the balance of the mouth [7,8].

Despite advances in the prediction and treatment of early childhood caries (ECC), ECC remains a significant public health burden. Thus, pregnancy is an ideal time to promote the prevention of ECC. In this regard, a study systematically reviewed the scientific evidence related to the association between prenatal oral health care and the presence of *Streptococcus mutans* in children. The estimated odds ratio suggested a protective effect of prenatal oral health care against the onset of ECC before 4 years of age. The transport of *S. mutans* in children was also significantly reduced

Figura 1. Eligibility.


in the intervention group [14].

Added to this, a study conducted a longitudinal cohort study of 790,758 babies born in Canada. Women with substance use disorders were identified before or during pregnancy. The main outcome was hospitalization for dental caries in children up to 12 years after birth. Children exposed to the use of maternal substances had a higher incidence of hospitalization for dental caries than unexposed children. The use of the maternal substance was associated with 1.96 times the risk of dental caries in childhood compared to the use of no substance. Associations were high for alcohol but were also present for cocaine, cannabis, opioids, and other substances [15].

Thus, inadequate prenatal education in oral health can negatively impact the quality of oral hygiene in children. Over three years, one study evaluated 93 students who completed benchmarks and surveys with a response rate of 96.8%. Survey participants responded that they agree that dentists should provide oral health counseling to pregnant women (99%, $n = 93$) and perform an oral health examination during prenatal care (99%, $n = 92$) [16].

Furthermore, a qualitative study analyzed the behaviors of pregnant women seeking dental care and the

acquisition of information related to oral health. Thus, interviews were conducted with 30 pregnant women (after 32 weeks of gestation) enrolled in the prenatal program of a public hospital in Hong Kong. The behavior of pregnant women seeking dental care was discouraged by some internal factors, such as misunderstandings about oral health and priority in other issues about oral health. External factors, such as inconvenient access to dental services during pregnancy, also affected their behavior in seeking care. The acquisition of information on oral health from antenatal institutions was very low. The greatest attention was paid to the visit to the dentist when they obtained adequate information from the previous experience of visiting the dentist or from family members. Therefore, it is imperative to develop strategies to improve oral health and develop a health system strengthening by interprofessional collaboration in the prenatal phase of pregnant women [17].

Besides, one study investigated whether there is a relationship between vitamin D levels in the umbilical cord and caries in children. A prospective cohort of pregnant women was selected from a high-risk urban population receiving antenatal care in Winnipeg, Canada. The intervention group received 2 oral antenatal doses of

50,000 international units (IU) of vitamin D in addition to routine antenatal care. The control group received routine prenatal care. A total of 283 women were recruited (23.4 ± 5.6 years), 141 in the intervention group and 142 in the control group. The mean 25(OH)D level of the cord was 49.6 ± 24.3 nmol/L and did not differ between groups. For the follow-up visit, 175 women returned. Overall, 26.3% of babies had ECC. No relationship was found between the 2 groups and the prevalence of ECC. However, significance was observed in an inverse relationship between 25(OH)D levels and the number of decayed primary teeth [18].

Also, one study carried out a systematic review to explore barriers and facilitators of dental care during pregnancy. We found 14 analytical themes related to barriers and facilitators to dental care during pregnancy that interacted in complex ways such as physiological conditions, low importance of oral health, negative stigma towards dentistry, fear/anxiety regarding dental treatment, mobility and safety, financial barriers, employment, time constraints, social support, lack of information, barriers from health professionals, advice from family and friends, beliefs and myths about the safety of dental treatment. In this regard, myths and beliefs about oral health and dental treatment during pregnancy seem to be the most frequent barriers [19].

Conclusion

Taking care of oral health is part of the daily rhythm of personal hygiene. The monitoring of a dental surgeon during pregnancy is important to prevent and treat the pregnant woman's oral diseases and clarify the doubts of future mothers since the baby's oral health begins to establish itself during the gestational period.

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Data sharing statement

No additional data are available.

Conflict of interest

The authors declare no conflict of interest.

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