



REVIEW ARTICLE NEONATAL-PERINATAL MEDICINE

Association Between Maternal Periodontitis and Preterm Low Birth Weight in Indian Populations: A Literature Review

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ABSTRACT

Background and Objectives: The objectives are to review and synthesize existing literature on the association between maternal periodontitis and preterm low birth weight (PTLBW) infants in the Indian population, and to evaluate whether periodontitis serves as a modifiable risk factor for adverse pregnancy outcomes.

Methods: A comprehensive literature search was conducted using PubMed, Google Scholar, EBSCOhost, and grey literature sources, including OpenGrey and Greylist. The search covered publications from January 2000 to August 2025. Studies were included if they used a case-control design, were conducted in India, and reported odds ratios or equivalent data comparing periodontal health in mothers with and without PTLBW deliveries. A total of $n = 17$ studies met the inclusion criteria and were subjected to qualitative synthesis.

Results: All included studies demonstrated a positive and statistically significant association between maternal periodontitis and PTLBW outcomes. Periodontal parameters such as plaque index, bleeding index, probing depth, and clinical attachment loss were consistently higher in mothers with PTLBW infants. Additional factors such as maternal illiteracy and poor antenatal care were identified as potential contributors. The findings support a biologically plausible mechanism linking periodontal inflammation to systemic effects that may impair fetal growth or trigger premature labor.

Conclusion and global health implications: The present literature review highlights the need for integrating oral health assessments into routine antenatal care. Periodontitis is preventable and treatable, and its management during pregnancy could reduce the risk of PTLBW. Public health programs targeting maternal health in resource-constrained settings should include periodontal screening, education, and timely intervention to improve birth outcomes.

Keywords: Low Birth Weight, Maternal Periodontitis, Pregnancy Outcomes, Preterm Birth, Public Health

INTRODUCTION

Preterm low birth weight (PTLBW) is among the most significant contributors to neonatal morbidity and mortality globally.^[1] These adverse pregnancy outcomes are associated with heightened risks of developmental delays, long-term disabilities, and increased healthcare costs.^[2] The World Health Organization defines low birth weight as a live birth weighing <2500 g

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and very low birth weight as <1500 g.^[3,4] Despite advances in prenatal care, India continues to account for nearly 40% of all low birth weight infants born in developing countries.^[5] Estimates suggest that almost one-third of Indian neonates weigh <2.5 kg at birth, a condition linked with a 20-fold increase in infant mortality, which escalates to 80-fold in infants under 1500 g.^[6,7]

Conventionally, maternal malnutrition, infections, and poor access to healthcare have been implicated in adverse birth outcomes.^[8] However, recent attention has been drawn to maternal oral health, specifically periodontitis, as a potentially modifiable risk factor.^[9,10] Periodontitis is a chronic inflammatory condition that destroys the supporting tissues of the teeth and often progresses silently, causing minimal symptoms until advanced stages.^[11] It has been linked to systemic conditions such as cardiovascular disease, poor glycemic control, and chronic obstructive pulmonary disease.^[11-13] Its possible role in contributing to PTLBW has garnered increasing scientific interest over the past two decades.^[14] The underlying biological plausibility is supported by the theory that systemic dissemination of inflammatory mediators and pathogens from infected periodontal tissues may influence the fetal-placental unit, potentially leading to early labor and restricted fetal growth.^[15]

Several international studies have evaluated this association, yet findings remain inconclusive due to methodological heterogeneity, inconsistent diagnostic criteria, and variations in population demographics. Within the Indian context, the issue is particularly significant given the high prevalence of both periodontal disease and PTLBW.^[16] However, a comprehensive synthesis of Indian evidence examining this relationship has been lacking. Therefore, the present literature review aims to consolidate and critically appraise existing Indian studies that investigate the association between maternal periodontitis and the incidence of PTLBW. By focusing on this modifiable factor, the review also underscores the potential for early intervention strategies in improving maternal and neonatal health outcomes.

METHODS

Search Strategy

A comprehensive search strategy was designed to identify studies that evaluated the association between maternal periodontitis and PTLBW in the Indian population. The review protocol was registered in the PROSPERO database (Reference ID: CRD420251149817). Electronic databases, including PubMed, Google Scholar, and EBSCOhost, were searched for articles published between January 2000 and August 2025. Grey literature was also explored through sources such as OpenGrey and Greylist. In addition, a manual search was conducted in relevant peer-reviewed

journals, including the *Journal of Periodontology*, *Journal of Indian Society of Periodontology*, *International Journal of Periodontology and Implantology*, and *Journal of the American Dental Association*.

Search terms were developed using appropriate Medical Subject Headings and keywords. Boolean operators “AND” and “OR” were used to combine terms such as: “pregnancy,” “periodontitis,” “maternal periodontitis,” “plaque index,” “probing depth,” “clinical attachment level,” “bleeding index,” “gingivitis,” “gingival index,” “preterm birth,” “low birth weight,” “prospective study,” “association,” and “case-control study.” The search was limited to articles published in English.

Studies were included if they met the following criteria: case-control design; publication in English, studies reporting the association between maternal periodontitis and PTLBW; availability in open-access platforms; and reporting outcomes using odds ratios or equivalent statistical measures. Studies were excluded if they were published before 2000, were non-English, or were review articles, editorials, letters to the editor, *in vitro* or animal studies, or were inaccessible through open-access platforms.

Study Selection

The process of identifying eligible studies was carried out in two distinct stages by two independent reviewers. During the initial stage, titles and abstracts were screened against the predefined inclusion and exclusion criteria, and records that did not meet these requirements were discarded. In the subsequent stage, the full texts of the remaining articles were obtained and carefully examined for final eligibility. Any differences of opinion between the reviewers were addressed through discussion, and a third reviewer was consulted if consensus could not be achieved. When essential or unclear information was missing, the corresponding authors were contacted through email for clarification. Ultimately, 17 studies fulfilled all selection criteria and were incorporated into the qualitative synthesis.^[16-32]

Data Extraction

Two reviewers independently extracted relevant information from the included studies using a standardized Microsoft Excel sheet that had been pilot-tested for consistency. Data items recorded comprised the first author's name, year of publication, country where the study was conducted, study design, total number of participants, gestational age criteria, periodontal parameters assessed such as bleeding index (BI), clinical attachment level (CAL), probing depth (PD), and plaque index (PI), and principal findings related to the association between maternal periodontitis and PTLBW outcomes. Extracted data were cross-checked for accuracy and completeness. Any discrepancies were resolved through

mutual agreement or, when required, by consulting a third reviewer. The risk of bias in the included studies was assessed using the Newcastle–Ottawa Scale.^[33]

RESULTS

Synthesis of Evidence

The final synthesis incorporated 17 studies [Figure 1] conducted between 2011 and 2025 across India, Turkey, Mexico, and Greece, enrolling a combined total of more than 7,200 participants.^[16–32] These studies predominantly compared the periodontal status of mothers who delivered PTLBW infants with that of mothers who had term, normal-birth-weight deliveries [Table 1].

Association between periodontitis and PTLBW

Across this enlarged evidence base, most primary studies reported a significant positive association between maternal periodontitis and the risk of PTLBW. Indian case–control investigations consistently demonstrated

higher odds of PTLBW among mothers with periodontitis, for example, Jacob and Nath (2014) documented a 3.5-fold greater risk in mothers with periodontitis compared with periodontally healthy mothers,^[19] while Kumari et al. (2016) recorded more severe community periodontal index of treatment needs (CPITN) scores in women delivering preterm or low birth weight infants.^[20] The large hospital-based survey by Patel et al. (2024) further confirmed significant prevalence differences despite its descriptive design.^[16] Outside India, Temur et al. (2025) observed that Turkish mothers of PLBW infants had significantly higher decayed, missing, and filled teeth (DMFT)/decayed, missing, and filled surfaces (DMFS) scores, plaque and gingival indices, and PDs than controls, although multivariate modeling did not identify any single oral parameter as an independent predictor.^[31] In Mexico, Etthan Zárate-Rodríguez et al. (2024) reported higher mean PD and clinical attachment loss among women with periodontitis, but no statistically significant association with gestational age or birth weight.^[31]

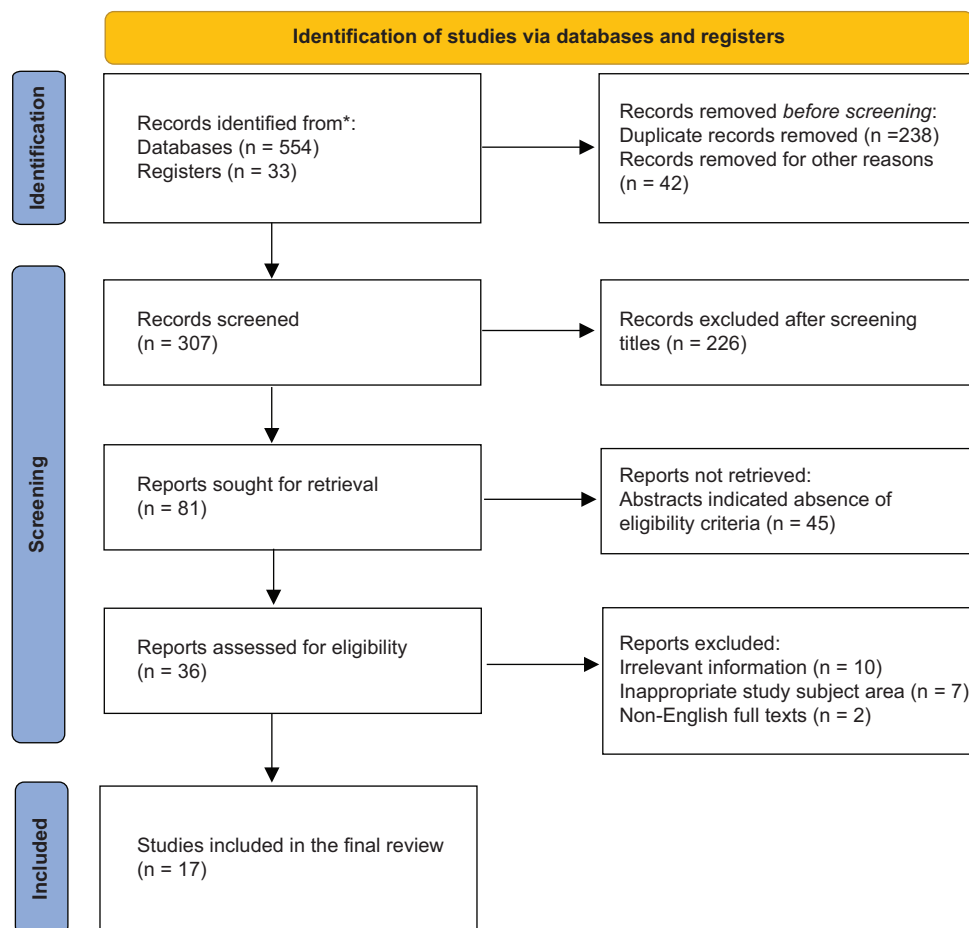


Figure 1: PRISMA flow diagram indicating the selection process of the articles in the present literature review.

Severity of periodontal parameters

Quantitative comparisons consistently revealed worse periodontal indices in PTLBW cases. Mean PD was typically 0.5–0.6 mm greater, and clinical attachment loss was around 2.0–2.5 mm higher in mothers of PTLBW infants. BI and plaque index were also elevated by approximately 20–40% compared with controls. These differences were reported both in earlier Indian studies, such as Sethi et al. (2016)^[21] and Priyanka et al. (2019).^[25] and in newer data from Temur et al. (2025).^[32]

Sociodemographic and other risk modifiers

Several studies highlighted contextual factors influencing outcomes. Vijay et al. (2022) reported that maternal illiteracy was a significant predictor of both poor periodontal status and PTLBW.^[29] Temur et al. (2025) additionally found that reduced gestational weight gain and higher rates of cesarean delivery were more common in the PLBW group, although oral parameters themselves were not independent predictors.^[32] These findings underline the importance of controlling for socioeconomic status, antenatal care utilization, and obstetric variables when evaluating the periodontal–pregnancy relationship.^[1–8]

Implications for antenatal care

Despite some heterogeneity and a few null associations,^[32] the overall body of evidence supports incorporating periodontal assessment into routine prenatal care. Tellapragada et al.^[22] (2016) advocated systematic periodontal screening during antenatal visits because of the strong correlations observed in their cohort,^[22] a recommendation echoed by Patel et al. (2024).^[16] Recognizing periodontitis as a modifiable maternal risk factor underscores the public-health relevance of early diagnosis and timely intervention to reduce the burden of PTLBW and related adverse pregnancy outcomes.

Risk of Bias

Low risk of bias (7–9 score) was observed in studies that clearly defined cases and controls, applied explicit periodontal diagnostic criteria, and appropriately adjusted for key maternal confounders.^[19,22,31] These high-quality studies provide the most reliable evidence supporting an association between maternal periodontitis and adverse pregnancy outcomes. Three investigations showed a moderate risk of bias (6 score) because of incomplete adjustment for confounders or limited detail on control selection, allowing potential residual confounding.^[21,26,28] Smaller or clinic-based studies demonstrated a high risk of bias (≤ 5 score) due to restricted sample sizes, unclear representativeness, or inadequate control of maternal factors, which lowers confidence in their reported associations.^[23,29,30,32]

Overall, the majority of studies achieved low-to-moderate Newcastle–Ottawa Scale scores [Table 2], reflecting generally acceptable definitions of cases/controls and periodontal assessments but frequent shortcomings in comparability for critical maternal variables such as age, socioeconomic status, smoking, and parity. To strengthen causal inference, future research should employ prospective designs with rigorous confounder adjustment and standardized periodontal diagnostic criteria.

Strengths and Limitations

A key strength of this evidence base is the consistency of findings across multiple studies conducted in diverse Indian populations, all employing a case–control design that enables comparative analysis. Furthermore, most studies utilized standard and validated periodontal indices, allowing for meaningful cross-study interpretation. However, there are notable limitations. First, there was variability in diagnostic criteria used for periodontitis, with some studies relying on community Periodontal Index (CPI) alone and others incorporating multiple indices such as CAL and PD, leading to potential heterogeneity. Second, while all studies reported significant associations, few conducted multivariate analyses adjusting for confounders such as maternal age, socioeconomic status, nutritional status, or comorbidities. In addition, publication bias may be present due to the inclusion of only open-access, English-language studies.

Gaps and Future Directions

Despite the growing body of evidence supporting the association between maternal periodontitis and PTLBW, important gaps remain. Most notably, there is a lack of large-scale prospective cohort studies or randomized controlled trials in the Indian context to establish causality. In addition, few studies have explored the temporal relationship between the progression of periodontal disease and pregnancy outcomes or evaluated the effectiveness of periodontal interventions during gestation.

Future research should focus on designing well-powered, longitudinal studies that control for relevant confounders and investigate whether scaling and root planing during pregnancy can reduce the incidence of PTLBW. Integrating oral health promotion into national antenatal programs and assessing its impact on maternal–child outcomes would also be a valuable avenue for public health policy and clinical practice.

DISCUSSION

Interpretation

The findings from this review strongly support an association between maternal periodontitis and PTLBW deliveries in the

Table 1: Descriptive characteristics of included studies.

Author, years of study	Country	Study design	Sample size	Pregnancy duration	Parameters assessed	Conclusion
Mannem and Chava, 2011 ^[17]	India	Case-control	104	Cases: preterm (<37 weeks); Controls: term (≥37 weeks)	PI, BI	Findings suggest maternal periodontal disease may be linked to preterm labor.
Chakki <i>et al.</i> , 2012 ^[18]	India	Case-control	62	Primiparous mothers; term births ≥37 weeks	PI, CPI	Periodontal disease showed a significant association with preterm/low-birth-weight outcomes.
Jacob and Nath, 2014 ^[19]	India	Case-control	340	Cases: birth weight <2.5 kg; Controls: >2.5 kg	BOP, CAL, PD	Periodontitis emerged as a strong, independent risk indicator for low birth weight.
Kumari <i>et al.</i> , 2016 ^[20]	India	Case-control	150	Cases: <2.5 kg before 37 weeks; Controls: ≥2.5 kg at term	PD, BOP, CPITN	Severe periodontal status (CPITN) was more frequent among mothers with preterm LBW infants.
Sethi <i>et al.</i> , 2016 ^[21]	India	Case-control	91	Cases: <37 weeks and <2500 g; Controls: ≥37 weeks and >2500 g	PI, GI, PPD, CAL	Maternal periodontal disease was associated with higher odds of preterm low-birth-weight delivery.
Tellapragada <i>et al.</i> , 2016 ^[22]	India	Case-control	790	Cases: <37 weeks and <2500 g; Controls: ≥37 weeks and >2500 g	CPI	Results support incorporating periodontal infection screening into routine antenatal care.
Keshava <i>et al.</i> , 2014 ^[23]	India	Case-control	60	Cases: <37 weeks and <2500 g; Controls: ≥37 weeks and >2500 g	PD	A clear positive association was observed between maternal periodontitis and LBW.
Lohana <i>et al.</i> , 2017 ^[24]	India	Case-control	300	20–24 weeks' gestation at assessment	PPD, CAL, OHI, PI	Periodontal disease was identified as a potential risk factor for PTLBW.
Priyanka <i>et al.</i> , 2019 ^[25]	India	Case-control	90	Cases: mothers with periodontitis; Controls: periodontally healthy	CAL, GI, PI	Periodontitis was associated with PTLBW; greater disease severity related to lower GA and birth weight.
Vidhale <i>et al.</i> , 2020 ^[26]	India	Case-control	90	Cases: preterm/LBW; Controls: term/normal weight	DI, PBI, CAL, PPD, GR	Significant association noted between maternal periodontal disease and preterm/LBW births.
Balaji <i>et al.</i> , 2021 ^[27]	India	Case-control	330	Cases: preterm (<37 weeks); Controls: term (≥37 weeks)	PD, PI	Reported a bidirectional link between maternal periodontitis and low birth weight.
Sinha <i>et al.</i> , 2022 ^[28]	India	Case-control	150	Cases: <37 weeks and <2500 g; Controls: ≥37 weeks and >2500 g	Russell periodontal index	Periodontal disease may elevate the risk of preterm delivery and LBW.
Vijay <i>et al.</i> , 2022 ^[29]	India	Case-control	100	Cases: CPI=3; Controls: CPI=1–2	CPI, CAL	Maternal illiteracy was highlighted as a contributor to periodontal disease and PTLBW risk.

(Contd...)

Table 1: (Continued).

Author, years of study	Country	Study design	Sample size	Pregnancy duration	Parameters assessed	Conclusion
Anu <i>et al.</i> , 2023 ^[30]	India	Case-control	60	Cases: preterm/LBW; Controls: term/normal weight	CPI	Maternal periodontitis showed a strong association with preterm labor and LBW.
Patel <i>et al.</i> , 2024 ^[16]	India	Hospital-based prevalence study	3,885	Singleton births; examined within 1–2 days postpartum	Pocket depth, BOP, plaque/calculus, gingival recession	Preterm 1.5% and LBW 4.5%; periodontitis present in 0.5% (preterm mothers) and 1.6% (LBW mothers); associations were statistically significant.
Etthan Zárate-Rodríguez <i>et al.</i> , 2024 ^[31]	Mexico	Observational cross-sectional	30	Second-trimester exam; outcomes at delivery	BOP, Biofilm %, PD, CAL	No significant link between periodontitis and GA at delivery or birth weight; PD/CAL higher in the periodontitis group.
Temur <i>et al.</i> , 2025 ^[32]	Turkey	Case-control	100 (50 PLBW; 50 term)	Cases: ≤36 weeks and <2.5 kg; Controls: ≥37 weeks and ≥2.5 kg	DMFT, DMFS, PI, GI, PD, CAL; MPV/PLT, PLR, MLR, NLR, WBC, MPV, PCT	PLBW group had worse oral indices and higher inflammatory markers; oral indices did not independently predict PLBW in regression.

PI: Plaque index, BI: Bleeding index, BOP: Bleeding on probing, CAL: Clinical attachment level, PD: Probing depth, PPD: Periodontal probing depth, GI: Gingival index, CPI: Community periodontal index, CPITN: Community periodontal index of treatment needs, OHI: Oral hygiene index, DI: Debris index, PBI: Papillary bleeding index, GR: Gingival recession, DMFT: Decayed, missing, and filled teeth, DMFS: Decayed, missing, and filled surfaces, MPV: Mean platelet volume, PLT: Platelet count, MPV/PLT: Mean platelet volume to platelet ratio, PLR: Platelet-to-lymphocyte ratio, MLR: Monocyte-to-lymphocyte ratio, NLR: Neutrophil-to-lymphocyte ratio, PCT: Plateletcrit, LBW: Low birth weight, PTLBW/PLBW: Preterm low birth weight

Table 2: Risk of bias in the included studies using the Newcastle Ottawa scale.

Study (year)	Selection (0–4)	Comparability (0–2)	Exposure (0–3)	Total/9	Risk of Bias (Interpretation)
Mannem and Chava, 2011 ^[17]	3	2	2	7	Low risk
Chakki <i>et al.</i> , 2012 ^[18]	2	2	2	6	Moderate risk
Jacob and Nath, 2014 ^[19]	3	2	3	8	Low risk
Kumari <i>et al.</i> 2016 ^[20]	3	2	2	7	Low risk
Sethi <i>et al.</i> , 2016 ^[21]	2	2	2	6	Moderate risk
Tellapragada <i>et al.</i> , 2016 ^[22]	4	2	3	9	Low risk
Keshava <i>et al.</i> , 2014 ^[23]	2	1	2	5	High risk
Lohana <i>et al.</i> , 2017 ^[24]	3	2	2	7	Low risk
Priyanka <i>et al.</i> , 2019 ^[25]	3	2	2	7	Low risk
Vidhale <i>et al.</i> , 2020 ^[26]	2	2	2	6	Moderate risk
Balaji <i>et al.</i> , 2021 ^[27]	3	2	2	7	Low risk
Sinha <i>et al.</i> , 2022 ^[28]	3	1	2	6	Moderate risk
Vijay <i>et al.</i> , 2022 ^[29]	2	1	2	5	High risk
Anu <i>et al.</i> , 2023 ^[30]	2	1	2	5	High risk
Patel <i>et al.</i> , 2024 ^[16]	3	2	2	7	Low risk
Etthan Zárate-Rodríguez <i>et al.</i> , 2024 ^[31]	2	1	2	5	High risk
Temur <i>et al.</i> , 2025 ^[32]	3	2	3	8	Low risk

Indian population. Across all included case-control studies, mothers diagnosed with periodontitis had a significantly higher incidence of delivering infants prematurely and/or with low birth weight compared to mothers with healthy periodontal status.^[16-32] These findings align with earlier hypotheses in global literature that systemic dissemination of inflammatory mediators from periodontal tissues may adversely influence the fetal-placental unit, triggering preterm labor or impairing fetal growth.^[14-16,19]

From a public health standpoint, the evidence underscores the need to consider maternal oral health as an integral component of prenatal care. Periodontitis, although often underrecognized in pregnancy, is both preventable and treatable.^[34] Its potential role as a modifiable risk factor for PTLBW has far-reaching implications, especially in low-resource settings like India, where the burden of both periodontal disease and adverse pregnancy outcomes remains disproportionately high.^[35] Integrating oral health education, screening, and treatment into existing maternal health programs could be a cost-effective intervention to improve birth outcomes and reduce neonatal mortality.^[36]

Implications

The evidence reviewed offers critical insights for practitioners, policymakers, and researchers. For healthcare practitioners, especially obstetricians and primary care providers, the results advocate for routine periodontal assessment during antenatal checkups. Collaboration between dental professionals and maternal health teams can facilitate early diagnosis and timely management of periodontal disease.

For policymakers, the findings highlight an urgent need to revise maternal health guidelines to incorporate oral health assessments as a standard of care. Existing public health frameworks, such as India's Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+A) strategy, could benefit from the inclusion of oral health services. Training of frontline health workers, particularly in rural and underserved areas, to identify signs of periodontal disease may strengthen early referral pathways.

For researchers, the review reveals the paucity of prospective and interventional studies evaluating whether periodontal therapy during pregnancy can alter birth outcomes.^[31] Investigating such causal relationships through well-designed trials would be instrumental in substantiating the clinical and policy relevance of periodontal care during pregnancy.

Pathogenesis and Prevention

Periodontitis may contribute to preterm low birth weight through several interrelated mechanisms. Periodontal pockets harbor Gram-negative anaerobes such as *Porphyromonas gingivalis* and *Fusobacterium nucleatum*.^[37] Routine activities such as chewing or tooth-brushing can introduce these

organisms and their virulence factors into the bloodstream, allowing translocation to the fetoplacental unit.^[38] Circulating bacterial lipopolysaccharides and pro-inflammatory mediators, including prostaglandin E₂, tumor necrosis factor- α , interleukin-1 β , and interleukin-6, can stimulate uterine contractions, weaken fetal membranes, and impair placental perfusion, thereby triggering premature labor or restricting fetal growth.^[39,40] Preventive measures focus on early identification and control of periodontal inflammation before or during pregnancy. Comprehensive strategies include pre-conception or first-trimester periodontal screening, reinforcement of oral hygiene practices such as twice-daily tooth brushing with fluoridated toothpaste and interdental cleaning, timely non-surgical periodontal therapy, preferably in the second trimester, and integration of dental check-ups into routine antenatal visits.^[41] Community-based programs and training of antenatal care providers to recognize periodontal disease can further enhance early referral and management, offering a low-cost and biologically plausible means to reduce the burden of PTLBW deliveries.

Challenges and Recommendations

One of the main challenges encountered during the review was the heterogeneity in periodontal diagnostic criteria used across studies. While some studies employed comprehensive clinical indices such as CAL and PD, others relied solely on simplified tools such as CPI or CPITN. This variability limited direct comparison of disease severity and necessitated careful synthesis of findings. In addition, few studies adequately adjusted for confounding factors such as maternal nutrition, socioeconomic status, or access to prenatal care, which may independently affect birth outcomes.

Another limitation was the restricted inclusion of only English-language and open-access articles, which may have excluded relevant evidence and introduced publication bias. Moreover, the lack of uniformity in statistical reporting (e.g., absence of adjusted odds ratios) posed challenges in pooling data for meta-analytic interpretation.

To improve future literature reviews, we recommend the use of standardized periodontal diagnostic criteria and consistent outcome measures for pregnancy-related variables. Employing validated quality assessment tools, pre-registering systematic review protocols, and encouraging multilingual and inclusive searches will also enhance the comprehensiveness and rigor of evidence synthesis.

CONCLUSION AND GLOBAL HEALTH IMPLICATIONS

Summary

The present literature review synthesizes evidence from 14 case-control studies conducted in India and confirms

a consistent, positive association between maternal periodontitis and the risk of PTLBW. Mothers with clinically diagnosed periodontal disease exhibited significantly worse periodontal parameters and were more likely to deliver infants prematurely or with lower birth weight. The strength and consistency of the association across varied Indian populations underscore the relevance of maternal oral health as an emerging determinant of adverse pregnancy outcomes. Periodontitis, an easily preventable and treatable inflammatory condition, may serve as a modifiable risk factor for PTLBW, with potential to improve neonatal outcomes if addressed proactively through public health interventions.

Call to Action

The findings from this review call for the urgent integration of periodontal care into prenatal and preconceptional health programs. Healthcare practitioners should be trained to screen for and manage periodontal conditions in women of reproductive age. Antenatal care guidelines should be updated to include routine periodontal examinations, and cross-disciplinary collaboration between dental professionals and maternal health providers must be prioritized. For policymakers, the inclusion of oral health in maternal and child health policies can address an often-overlooked contributor to neonatal morbidity. Furthermore, public health researchers should advance this evidence base through prospective and interventional studies that evaluate the impact of periodontal treatment on pregnancy outcomes. Recognizing and addressing maternal periodontitis as a risk factor for PTLBW can enable the general population and clinicians to take a significant step toward reducing preventable neonatal complications and strengthening maternal-child health outcomes, particularly in low- and middle-income countries.

Key Messages

(1) Pregnant women with gum disease are more likely to deliver babies early or with low birth weight. (2) Good oral hygiene during pregnancy is important for both the mother's and the baby's health. (3) Including dental check-ups as part of routine prenatal care can help reduce the risk of complications during childbirth. (4) Health programs should raise awareness about the link between oral health and pregnancy outcomes, especially in low-resource settings like India.

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COMPLIANCE WITH ETHICAL STANDARDS

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