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RESEARCH ARTICLE



Oral healthcare in maternal health services: a cross-country comparative analysis in 10 European countries

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ABSTRACT

Introduction and aim: Despite associations between oral and systemic health, little attention has been paid to oral care during pregnancy across Europe. This study aims to map the coverage and delivery of maternal oral healthcare across different European countries.

Materials and methods: This qualitative, cross-country comparative study examines how ten European health systems – Denmark, England, Estonia, France, Hungary, Ireland, the Netherlands, Norway, Portugal, and Sweden – govern, finance, and deliver maternal oral healthcare. Using a template created by the authors, data were collected between September 2024 and January 2025, from members of the EU-funded PRUDENT and DELIVER consortia. After comparative analysis, the data were sent to all participants for validation.

Results: Thematic analysis of participant answers revealed the following findings: (1) England provides more ample oral healthcare coverage for pregnant women; Estonia, France, Ireland, and Portugal offer partial reimbursement; and Denmark, the Netherlands, Norway, and Sweden don't have a specific maternal coverage. (2) Geographic and socioeconomic disparities persist. (3) Only England and Estonia were identified as having quality evaluation tools, and England, France, Hungary, Ireland, and Portugal have targeted oral health promotion initiatives for pregnant or postpartum women.

Discussion: The findings of this study suggest a missed opportunity for oral health prevention. Reconsideration of financing models, integration of oral screenings into prenatal care, expansion of training for healthcare professionals, and establishment of quality assurance frameworks are needed.

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Oral health; pregnancy; oral healthcare; maternal healthcare

Introduction

Despite the well-documented associations between oral diseases and systemic health, little attention has been paid to oral health during pregnancy. Pregnant women are especially vulnerable to oral conditions such as gingivitis, periodontitis, and tooth decay, due to hormonal changes and dietary shifts (Naseem et al., 2016; Silva de Araujo Figueiredo et al., 2017). Left unaddressed, these conditions can worsen during pregnancy and are associated with an increased risk of preterm birth, low birth weight, and early transmission of oral microbiome to the child, potentially causing an intergenerational impact (Azevedo et al., 2023; Padilla-Cáceres et al., 2023; Rio et al., 2020). While oral health encompasses far more than dental caries, evidence indicates that maternal caries during pregnancy is a significant clinical risk indicator for Early Childhood caries (ECC), illustrating one example of the dual benefit of prenatal oral health care in

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improving maternal outcomes and supporting intergenerational oral health (Thearawiboon & Rojanaworarit, 2024).

Oral diseases are among the most prevalent non-communicable diseases worldwide, imposing significant functional limitations, social stigma, lost productivity, and financial and emotional burdens on families and health systems (Peres et al., 2019). However, in most European health systems, dental services are rarely integrated into systemic health pathways, and access remains heavily conditioned by the ability of the patient to pay (World Economic Forum, 2024). On average, only one-third of the total costs of oral healthcare are covered by government schemes or compulsory insurance across the European Union (OECD, 2024). This lack of a funding model reinforces the perception of oral care as optional and may contribute to placing pregnant women, particularly those with limited financial means, at a disadvantage. These exclusions are shaped not only by economic reasons but also by low oral health literacy, lack of professional guidance, cultural rules, and geographic disparities (OECD, 2024; Connexion France, 2023; Vamos et al., 2019). The result is a possible pattern of unmet needs that reinforces health inequities across generations. Beyond oral diseases, oral health reflects and influences overall health and well-being.

Previous research has examined select aspects of maternal oral health, such as individual barriers to care and the clinical implications of poor oral health during pregnancy (Frey-Furtado et al., 2025; Yenen & Ataçağ, 2019). However, there is a lack of cross-country analysis regarding how European health systems finance and organise these services. A comparative overview is essential to understanding the range of current approaches and to informing future health system and policy decisions. Improving access to oral healthcare for pregnant women can improve health literacy, reduce adverse birth outcomes, and strengthen the oral health of women and their families, resulting in sustainable and intergenerational health benefits. This study aims to map the coverage and delivery of maternal oral healthcare across different European countries.

Materials and methods

Study design

This cross-country comparative study maps the integration of oral healthcare into maternal health services. Data collection and analysis focus on understanding the level of integration of oral healthcare into primary care for maternal health. A comparative document analysis approach was applied. Data were extracted by members of the EU-funded PRUDENT (Prioritization, incentives and Resource use for sUsustainable DENTistry) consortium and EU-funded DELIVER (DELiberative ImproVEment of oRal care quality) consortium through a template with guiding questions.

Data collection tool

A structured template was developed to collect standardised and comparable data across selected European countries and was reviewed by an expert from the Netherlands. The template was divided into five key sections to address the study's objectives:

1. **Maternal Health Services:** Information on maternal healthcare processes, access criteria, disparities, and regulations.
2. **Oral Healthcare Services:** Insights into the integration of oral healthcare into maternal health systems, accessibility differences, and state-level policies.
3. **Oral Health Promotion:** Details on initiatives targeting oral health awareness for pregnant and postpartum women and the role of policies in shaping these programs.
4. **Guidelines:** Descriptions of national or regional guidelines for oral healthcare during pregnancy and their enforcement mechanisms.
5. **Other Services:** Information on the inclusion of additional maternal health services (e.g. psychological, nutritional, or physiotherapy appointments) and their accessibility.

Validation and data collection

The template was initially pre-tested in Portugal in June 2024, and modifications were made based on the feedback received. The revised version was then shared with all consortium members of the PRUDENT and DELIVER projects.

The consortium members – recognised public health experts representing ten European countries (Denmark, England, Estonia, France, Hungary, Ireland, the Netherlands, Norway, Portugal, and Sweden) – were invited to complete the template between September 2024 and January 2025. They were encouraged to draw on their professional expertise and, when possible, to consult national health authorities, regulatory agencies, and relevant policy documents to inform their responses.

In total, the group included nine academic experts (from Denmark, England, Estonia, France, Hungary, Ireland, Norway, Portugal, and Sweden) and one institutional representative (from the Netherlands), with one respondent per country. To ensure ethical and data protection standards, participants' names were not collected; only their institutional affiliations were recorded.

Analysis and cross-validation

We organised the questionnaire responses into a structured Excel matrix to facilitate cross-country comparison. Responses were categorised thematically to enable systematic analysis by topic across all countries. Where available, we searched for supporting documents or references to enhance the reliability of the reported information.

Due to the high heterogeneity of responses, a formal qualitative coding framework was not suitable; instead, responses were grouped according to key thematic dimensions to ensure consistency and comparability across cases. The final data synthesis was shared with all participants for validation.

Informed consent and ethical approval

Ethical approval was obtained from the Ethics Committee for Health of the Faculty of Dental Medicine, University of Porto (Ref. 29/2024). The Data Protection Office reviewed the study protocol and confirmed that no data protection authorisation or additional legal requirements were needed, as no personal data was collected. Participants were contacted by email, which explicitly stated that participation was voluntary and carried no associated risks or costs. Written informed consent was obtained from all participants. The study was conducted in accordance with the Declaration of Helsinki.

Results

Integration of oral healthcare in maternal health services

Table 1 shows the extent of oral health coverage in the context of maternal care as reported by study participants. Maternal health services are provided free of charge across all ten countries. However, oral healthcare remains differently integrated into primary care, ranging from 'full' coverage in England to no specific coverage in the Netherlands, Denmark, Norway, and Sweden.

Among the studied countries, only England offers more ample oral healthcare coverage for pregnant women. Through public bodies financed by the government, the state covers the cost of oral healthcare for pregnant women and new mothers in England via the National Health Service (NHS) (NHS Business Services Authority, 2025).

Partial coverage is available in Estonia, France, Ireland, and Portugal, although with differing reimbursement levels and restrictions. For example, Portugal's Dentist voucher program allows 5 to 6 treatments that can be conducted in 3 or more appointments, while in France, the Statutory Health Insurance (SHI) fully covers one dental visit for pregnant women in primary care. Aside from the complimentary dental visits available during pregnancy-related primary care, pregnant women receive the same level of coverage as the general population, with public health funds covering 60% of oral health care costs (AlloDocteurs, 2024; L'Assurance Maladie, 2025; Bartet, 2020). In Estonia, pregnant women and mothers

Table 1. Comparative overview of maternal care and oral health coverage cost sharing in selected european countries.

Country	Maternal care	Oral health coverage	Patient cost sharing
Denmark	Free	None (No maternity-specific benefi. Adult dental care is private; only <21 years covered).	Standard adult subsidy applies; no extra coverage
England	Free	Full – 100% NHS coverage under MatEx: all dental exams, preventive, restorative, emergency care from pregnancy to 12 months post-partum.	0 % (no copay)
Estonia	Free	EHIF benefit: up to € 105/year for pregnant women (pregnancy up to 12months post-partum).	Minimum 12.5% copay
France	Free	EBD (preventive exam) from the 4th month of pregnancy to 6 months postpartum: 60 % AMO + 40 % AMC (100 % AMO if CSS or no complementary plan) – mandatory third-party payment. Some dental treatments from the 6th month of pregnancy to 12 days postpartum: 100 % AMO.	0% during the exam and treatment windows; outside those periods routine adult care = 60 %AMO/40% copay
Hungary	Free	NEAK covers 100% provider fees (exams, fillings, periodontal, extractions) for pregnant women (pregnancy to 90 days post-partum); no coverage of lab/material (crowns, dentures, etc.)	0% for provider fees; 100% lab/material OOP
Ireland	Free	No maternity-specific benefit. Medical card holders (DTSS): Free exam (1/year), scale & polish (1/year), fillings (2/year), extractions, anterior root canal and dentures (prior approval required); PRSI contributors (DTBS): Free exam (1/ year) + €42 subsidy toward scale/periodontal treatment (max €15 co-pay for scale & polish). Others: No public coverage (100% OOP).	DTSS: 0% (covered treatments are free); DTBS: 0% for exam; max €15 for scale & polish, 100% OOP for other treatments. Others: 100% OOP.
Netherlands	Free	None (No maternity-specific benefit. Adult dental care is excluded from basic insurance; voluntary supplementary plans available).	100% OOP (standard adult rules)
Norway	Free	None (No maternity-specific benefi)	100% OOP (standard adult rules)
Portugal	Free	Dentist vouchers cover all preventive/restorative/basic curative care for pregnant women until 60days postpartum; issued by SNS at primary care center.	0% (covered by voucher up to 3 vouchers or dental clinics in primary care centers), 100% (others)
Sweden	Free	No maternity-specific benefit; general age-based allowance applies. (<20years: Free dental care; 20–23 years: 600 SEK per year with general dental care allowance; >24years: 300SEK per year with general dental care allowance).	

OOP: Out-of-pocket; MatEx: maternity exemption certificate; EHIF: Estonian Health Insurance Fund; NEAK: National Health Insurance Fund; DTSS: Dental Treatment Services Scheme; PRSI: Pay Related Social Insurance; DTBS: Dental Treatment Benefits Scheme; EBD: Examen bucco-dentaire (preventive dental examination); AMC: Assurance Maladie Complémentaire (voluntary/complementary health insurance); AMO: Assurance Maladie Obligatoire (mandatory Social Health Insurance); CSS: Complémentaire santé solidarité (means-tested supplementary cover for low-income residents); SNS: Serviço Nacional de Saúde (Portuguese NHS); SEK: Swedish krona.

of children up to one year old are eligible for enhanced dental care reimbursement, which exceeds the standard annual amount (60€). Since only private clinics operate in Estonia, the Estonian Health Insurance Fund (EHIF) benefits for pregnant women and young mothers by covering up to 105€ per year, with the patient paying at least 12.5% (Estonian Health Insurance Fund & Tervisekassa, 2025; European Observatory on Health Systems & Policies, 2022).

Hungary offers publicly funded dental care for individuals with valid public health insurance. Pregnant women in Hungary are assigned a public health nurse, known as a ‘védőnő’, who coordinates referrals for essential screening tests as part of the standard care protocol (UNHCR, 2024). In contrast, Ireland does not have an integrated oral healthcare service for maternal health, providing only basic coverage under the Dental Treatment Services Scheme (DTSS) and the Dental Treatment Benefits Scheme (DTBS) (Department of Health, 2019; Health Service Executive, 2025). Similarly, the Netherlands, Denmark, Norway, and Sweden do not include specifically dedicated oral health programmes for pregnant women. However, in Norway, there are some conditions/situations where the National Insurance scheme may cover some of the cost of treatment via Helfo (Helsenorge, 2025).

Geographical disparities in access to oral healthcare

Geographical disparities impact access to oral healthcare in maternal services (Table 2). Urban areas typically have a better offer of dental practices and healthcare facilities, while rural regions struggle with recruiting and retaining dental professionals (Winkelmann et al., 2022). This results in longer waiting times and reduced availability of NHS dental services in rural England (British Dental

Table 2. Geographical disparities in access to oral healthcare.

Country	Urban–rural differences	Initiatives
Denmark	Not specified	—
England	Urban areas have better access; rural areas face longer waits	—
Estonia	Urban–rural disparities	EHIF and Dental Association initiatives; midwife education Initiatives in rural areas with mobile health services such as a regional perinatal network – the “1000 jours” program that is intended to help identify maternal needs and support the adaptation of the follow up.
France	Lower accessibility in rural areas	
Hungary	Marked disparities between regions	—
Ireland	Not specified	—
Netherlands	Not specified	—
Norway	Generally good accessibility	—
Portugal	Dental vouchers generally good; Primary health centres with disparities	—
Sweden	Shortages in rural regions	—

EHIF: Estonian Health Insurance Fund;—: no information.

Association, 2022, 2024). Estonia faces similar access differences; however, efforts by the Estonian Dental Association and EHIF seek to enhance maternal oral health coverage and educate midwives about oral health. France also exhibits geographical disparities, with lower accessibility in some regions (Connexion France, 2023; Observatoire National de la Démographie des Professions de santé, 2021).

Hungary displays significant regional disparities, with Budapest having a high concentration of dentists compared to Nógrád (Sztrilich et al., 2025). Specialised services, such as maxillofacial and oral surgery, are limited across various countries. Additionally, Sweden faces a shortage of dentists in rural settings, particularly in the northern regions (Dental Tribune International, 2021). In Portugal, dental vouchers are available nationally through contracts with private dentists; however, dental clinics in primary care are only accessible in certain areas, with only nearly 100 dentists currently employed in the public sector (Serviço Nacional de Saúde, 2023). Conversely, Norway reports generally good accessibility.

Quality evaluation

Quality evaluation mechanisms differ among countries. In England, the Care Quality Commission (CQC) independently oversees health and social care services, assessing dental practices (Care Quality Commission, 2016, 2022; Stankiewicz & Wilson, 2021). The Estonian Health Insurance Fund (Tervisekassa/EHIF) employs several mechanisms to ensure service quality (Estonian Health Insurance Fund & Tervisekassa, 2024).

No formal national quality assessment frameworks for oral health services were identified by the participants in Denmark, France, Hungary, Ireland, the Netherlands, Norway, Portugal, or Sweden.

Oral health promotion initiatives

Efforts to promote oral health within maternal healthcare frameworks vary across countries, with seven countries reporting oral health promotion programs, as illustrated in Table 3. In England, initiatives such as *Start4Life*, *Better Births*, and *Delivering Better Oral Health* focus on improving maternal and infant health, including oral healthcare (British Dental Association, 2021; King’s College London, 2025). Estonia promotes oral health education through the Suukool program, an initiative funded by the EHIF that provides oral health information for children and families, including a dedicated section on pregnancy and dental health (Eesti Hambaarstide & Tervisekassa, 2009).

France has implemented the *1000 Jours* program, which includes health promotion efforts for pregnant women and young children, though oral health is not a central focus. In Hungary, the National Public Health Centre, in collaboration with the Ministry of the Interior, deploys mobile screening units that provide general health screenings, including dental check-ups, although these are not explicitly targeted at pregnant women (Karácsony et al., 2023).

Table 3. Oral health promotion initiatives.

Country	Initiatives	Focus/details
England	Start4Life, Better Births, Delivering Better Oral Health	Start4Life program offers pregnancy and parenting advice for healthy development. Delivering Better Oral Health provides a toolkit for dental teams to enhance oral health and maternal care, emphasizing fluoride, nutrition, and tobacco cessation. Better Births aims to improve maternity care with integrated health services.
Estonia	Integration of oral health education in midwife training via “suukool”	Is a nationwide project funded by the EHIF to promote oral health among children and young people.
France	1000 Jours program	Focuses on maternal and infant health, covering nutrition, mental health, and well-being, with oral health included as part of general health.
Hungary	Mobile screening units by the National Public Health Center	Mobile units provide general health screenings, including dental check-ups, to improve access to healthcare services, particularly for underserved populations.
Ireland	SMILE AGUS SLÁINTE program	Aims to deliver equitable, prevention-focused, life-course oral healthcare to all in Ireland, integrating dental services into primary care and prioritising vulnerable populations. The policy embeds oral healthcare during pregnancy, by promoting early screening, safe treatment across trimesters, and coordinated referral pathways within antenatal services.
Portugal	Programa Nacional de Promoção de Saúde Oral	This national program integrates oral health initiatives into public health strategies, including maternal and infant care. It focuses on preventive measures, education, and access to dental services.
Netherlands	Project GigaGaaf!	The project initiated a new referral mechanism at the national and public consultation service: all parents of 6-month-old babies were referred to the dentist or oral hygienist.
Norway	None	—
Sweden	None	—
Denmark	Not specified	—

Not specified: means the stakeholder didn't answer;—: no information.

Ireland's national oral health policy, Smile agus Sláinte, provides a framework for oral healthcare, including for children and vulnerable groups, and the Netherlands promotes oral health in babies through the project GigaGaaf! (Ivoren, 2024; UMCG et al., 2014; Verlinden et al., 2024). Portugal's *Programa Nacional de Promoção de Saúde Oral* includes broader oral health promotion initiatives (Serviço Nacional de Saúde, 2025). Conversely, no specific oral health promotion programs were identified in Norway or Sweden.

Clinical guidelines

The availability of guidelines for elective treatments and oral health promotion varies across Europe. England follows the *Delivering Better Oral Health* toolkit and Scottish Dental Clinical Effectiveness Programme (SDCEP) guidelines for the prevention and treatment of periodontal diseases in primary care (Curtin et al., 2022; Public Health, Department of Health and Social Care, NHS England, & Health Improvement, 2021; NHS Education for Scotland, 2024; Scottish Dental Clinical Effectiveness Programme, 2024). France includes oral health recommendations within its maternal health strategies, including *Prise en charge des problèmes dentaires pendant la grossesse*, preventive caries strategies, and guidelines on the use of dental amalgam during pregnancy (Réseau Français Des Centres Régionaux de Pharmacovigilance, 2018). Estonia has specific recommendations for providing dental care to pregnant women, including guidelines on chair positioning and safe prescriptions. Hungary provides small informational booklets for pregnant women detailing oral health advice for each trimester.

No established guidelines for elective dental treatments during pregnancy were identified by the participants in Ireland, the Netherlands, Norway, Portugal or Sweden.

Discussion

This study maps how ten European countries integrate oral healthcare within the context of maternal health services. While maternal care is universally provided at no cost, the inclusion of oral healthcare differs in terms of coverage, financing, and delivery. Some systems incorporate oral health into routine prenatal care through public programs or targeted benefits. Others rely on partial reimbursement or limit access to those with specific insurance eligibility. In several countries, there are no dedicated provisions

for maternal oral health, and pregnant women receive the same dental coverage as the general adult population.

Financial barriers and health implications

The analysis highlights the absence of a standardised model for integrating oral healthcare into maternal health services across Europe. Oral health financing is a significant challenge globally, mainly due to its exclusion from essential healthcare services in many health policies (World Economic Forum, 2024). Unlike general healthcare, which is often publicly funded, dental care is predominantly financed through private means, with individuals frequently paying out of pocket. For instance, according to the OECD (2024), private sources account for 70% of dental care spending, compared to 26% for general healthcare. This disparity stems from the perception that oral health is a private concern rather than a public good, leading to lower policy priority compared to diseases like cancer or diabetes (World Economic Forum, 2024). Consequently, dental care financing is often separate from other healthcare funding, neglecting the societal benefits of improved oral health (World Economic Forum, 2024).

This variability in financing mechanisms poses significant challenges to equitable access to oral healthcare for pregnant women. In countries where dental care is predominantly financed through private means, individuals often pay out-of-pocket, which can lead to reduced healthcare use among vulnerable populations (Peres & Heilmann, 2015). The heavy reliance on OOP payments creates substantial barriers to access. Pregnant women in countries like Denmark and Sweden must bear the cost of dental care as regular adults. Given the documented association between poor oral health and increased risk of adverse pregnancy outcomes, including preeclampsia and preterm birth, there is an opportunity for preventive care and cost-saving interventions in maternal health (Yenen & Ataçağ, 2019).

Partial coverage models, observed in countries like Estonia, France, Ireland, and Portugal, offer some relief but remain insufficient for comprehensive maternal oral healthcare. For example, while a positive step toward integration, Portugal's Dentist Voucher program does not fully address the financial barriers pregnant women face. In contrast, England's full coverage model under the NHS exemplifies, in theory, how public financing can reduce economic barriers. However, recent research by the BBC has shown that 91% of practices in England cannot take on new adult patients on the NHS, and 79% are unable to take on new child patients (British Dental Association, 2022), therefore, while coverage is nominally 100%, in practice a large proportion of pregnant women cannot secure an NHS dentist appointment due to capacity constraints. In many other settings, such schemes can't expand because there aren't enough trained professionals to meet demand - a workforce shortage that limits program reach.

Geographic disparities and systemic challenges

The data collected highlights urban-rural disparities in access to dental services. According to the participants, countries such as Hungary, Estonia, and Sweden face shortages of dental professionals in rural areas, leading to wait times and reduced service availability longer. Conversely, Norway demonstrates better accessibility despite lacking dedicated maternal oral health services. The ongoing efforts by the Estonian Dental Association and the Estonian Health Insurance Fund (EHIF) to educate midwives about oral health underscore the potential for expanding the scope of other healthcare professionals in addressing these disparities. Such initiatives demonstrate how incorporating dental education into the training of non-dental healthcare workers can be a strategy for increasing access to preventive care, particularly in underserved areas. With 69% of the world's dentists serving only 27% of the global population, workforce models must adjust to prevent oversupply in certain regions and address undersupply in others (Glick & Williams, 2021). The strategy should focus on prevention – where these groups can collaborate – to ensure minimal treatment needs, while simultaneously training more dentists in underserved areas and increasing auxiliary personnel, such as dental hygienists (FDI World Dental Federation, 2023). Moreover, the oral health sector must encourage greater collaboration with other healthcare disciplines (FDI World Dental Federation, 2023).

Quality and policy gaps

There is an inconsistency in the quality evaluation mechanisms for oral healthcare. England employs a structured oversight system through the Care Quality Commission (CQC), ensuring pregnant women receive evidence-based oral healthcare. In contrast, while Estonia utilises benchmarking tools to monitor care quality, national frameworks remain underdeveloped in other countries. This absence of formal evaluation structures signifies a gap in policy enforcement and quality assurance (American Dental Association, 2019; Righolt et al., 2019). Moreover, in Portugal, there is a lack of data collection to understand the determinants of oral health-care use: to date, the Directorate-General of Health has not published a separate utilization rate of the 'dentist voucher' for pregnant women in 2024 (Diário de Notícias, 2024).

Moreover, the lack of standardised guidelines for maternal oral health across several countries contributes to inconsistent care. The reluctance of some dentists to treat pregnant women due to liability concerns or lack of training further exacerbates this issue (Frey-Furtado et al., 2025). Establishing standardised, evidence-based guidelines on pregnancy-safe dental treatments could address these barriers, improve the quality of care and provide medium-term financial benefits (Antoniadou et al., 2024).

Policy implications

Promoting oral health should be a fundamental component of maternal health policies. Pregnancy and the postpartum period are times when women have more frequent contact with the healthcare system, providing an important opportunity to integrate oral health care and counselling into routine maternal services. Investing in preventive oral care is substantially more cost-effective than treating advanced disease and its pregnancy-related complications: in the United States, improved maternal oral health reduces medical costs by \$1,500 to \$2,400 per pregnancy (World Economic Forum, 2024). Mothers can also instill good habits based on their attitudes and beliefs, having an intergenerational impact (Shetty et al., 2016). However, adopting a preventive approach necessitates identifying practical methods for implementation, all while considering workforce limitations, budget constraints, and public acceptance.

A possible strategy to improve early detection of potential issues is to incorporate maternal oral health screenings into regular prenatal visits or to establish regular referrals to a dentist (general practitioner and midwife). Nonetheless, it is crucial to tackle the logistical and financial challenges that accompany this integration. Policymakers and healthcare associations need to identify strategies tailored to their specific populations, adapting their plans to address the demographic, economic, and systemic challenges they face, and develop adequate standards. Offering training and incentives to midwives, nurses, and primary care physicians can enable them to communicate oral health education to their patients effectively. Moreover, it is crucial to reinforce workforce policies by strategically allocating resources to mitigate disparities, particularly in rural areas. Lastly, ongoing monitoring and evaluation of progress cannot be overlooked. Implementing national quality assurance frameworks that define clear standards will facilitate enforcement and accountability, ultimately enhancing the effectiveness of oral healthcare.

Limitation and future perspectives

This study has some limitations. The primary data source consisted of stakeholder input, which, while informative, may be subject to inaccuracies or incomplete knowledge. Despite being encouraged to consult institutional documents and other sources, contributors may have overlooked relevant policies, misinterpreted national guidelines, or lacked access to current data. As such, the reliability of certain responses cannot be fully guaranteed. Moreover, some reported information may already be outdated or regionally variable. Additionally, while the study highlights existing policy gaps, it does not assess the effectiveness of current integration efforts in improving maternal and infant health outcomes.

Further studies should investigate the cost-effectiveness of integrating oral healthcare within maternal services, with a focus on its impact on maternal and neonatal outcomes. Exploring alternative financing mechanisms to reduce OOP costs is also essential. Assessing the role of midwives and primary healthcare providers in delivering oral health education to pregnant women, as well as examining workforce distribution challenges, particularly in rural areas, and evaluating policies that can enhance the recruitment and retention of

dental professionals are crucial steps forward. These future research directions will provide deeper insights into improving maternal oral health policies and accessibility across different healthcare systems.

Conclusions

Our article highlights a critical gap in maternal health services: the varying integration and financing of maternal oral healthcare across European countries. These differences result in uneven access, impose out-of-pocket costs on pregnant women, and may contribute to broader health inequities. No country has comprehensively addressed these challenges. Well-designed maternal oral health programmes have the potential to improve health outcomes without necessarily increasing costs, particularly through more effective use of existing resources. However, policymaking in this area rarely follows a linear or strictly evidence-based trajectory. It is shaped by political, institutional, and budgetary dynamics. As such, rather than advocating for fixed policy models, the emphasis should be on evidence-informed policymaking - developing context-sensitive strategies that reflect system realities while drawing on the best available evidence.

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Author contributions

Conceptualisation: LFF, MLP, PM, SL, OA; Methodology: LFF, MLP, PM, OA; Formal analysis: LFF, MLP, PM; Visualization: LFF; Writing—original draft: LFF; Writing—review and editing: LFF, MLP, PM, SL, OA.

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Data availability statement

The data that support the findings of this study are available from the corresponding author, MLP, upon reasonable request.

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