Differences in dental care for pregnant women in the public sector after the creation of Previne Brasil

Giovanna Mendonça Soares[1] , Giovanna Freitas Raso[1] , Isadora Custódio Moreira Santos[1] , Heron Ataide Martins[2] , Ana Beatriz Vieira da Silveira[3] , Daniela Silva Barroso de Oliveira[1] , Daniela Coêlho de Lima[1] , Heloisa de Sousa Gomes[1,*]

[1] School of Dentistry, Federal University of Alfenas (UNIFAL), Alfenas-MG, Brazil.

[2] Faculty of Dentistry, José do Rosário Vellano University (UNIFENAS), Varginha-MG, Brazil.

[3] Bauru School of Dentistry, University of São Paulo (USP), Bauru-SP, Brazil.

Corresponding author:
Heloísa de Sousa Gomes,
Universidade Federal de Alfenas – UNIFAL-MG,
R. Gabriel Monteiro da Silva, 700 - Centro, Alfenas - MG, 37130-001,
Tel. +55 35 98829-5958,
E-mail: hsousagomes@yahoo.com.br

Editor: Dr. Altair A. Del Bel Cury

Received: December 21, 2023
Accepted: February 27, 2024

Aim: To compare performance differences among dental surgeons in the public sector of the state of Minas Gerais regarding prenatal dental care before and after the establishment of Previne Brasil. **Methods:** A cross-sectional study was conducted, gathering data through a structured questionnaire. The sample consisted of dental surgeons working in the public sector of municipalities in MG and utilizing the snowball effect. Data analysis was performed using the IBM-SPSS® version 29.0, employing Pearson's Chi-square statistical test (P<0.05). **Results:** Out of the 28 State Health System (SRS) present in MG. A total of 1696 responses were collected, but after applying the exclusion criteria, 1001 responses remained, specifically related to dental surgeons working in MG public sector. 78.6% comprised professionals who graduated before 2019, while 20.1% graduated after that year. The morning and the second or other gestational trimesters were the most common periods considered optimal for caring for pregnant women. A significant portion of the professionals had not undergone any specific courses or training on this topic, reporting an average satisfaction level of 5.52 regarding the accessibility of information during their education aimed at this audience. **Conclusion:** Variances were observed in the care provided to pregnant women by dental surgeons working in the public sector of Minas Gerais, distinguishing those trained before and after the implementation of Previne Brasil. The debunking of myths and taboos stands as crucial for enhancing the acceptance of prenatal dentistry.

Keywords: Pregnant women. Prenatal care. Public health dentistry.

Introduction

The fundamental care for women's oral health during pregnancy, known as prenatal dental care (PNO), has demonstrated significant advantages for both the oral and overall health of pregnant women[1]. Undoubtedly, pregnancy constitutes a time of immense transformations, encompassing psychological and physiological changes[2,3] that consequently impact oral health. It's common to encounter periodontal and salivary alterations, along with shifts in oral microbiota and cellular metabolism during this phase[4].

Scientific literature certifies that periodontal disease, when present in high-risk pregnancies, serves as an additional predisposing factor for the delivery of premature and/or low birth weight infants[5]. Moreover, there exists substantial scientific evidence indicating that dental caries is prevalent during pregnancy, primarily triggered by alterations in dietary habits, which are frequently observed during this phase[6].

In this scenario of great transformations, it is extremely important to monitor the pregnant woman with the dental surgeon, in which extra assistance in her care is necessary, so that the changes do not negatively interfere with the baby's development[7]. However, there are still many insecurities that affect both pregnant women and dentists. On the part of pregnant women, there are beliefs and myths that dental treatment during pregnancy interferes with the baby's development and, on the part of the professional, there is insecurity of not having the more in-depth knowledge necessary for successful care[1,8].

Hence, dispelling misconceptions that dental care might endanger the health of both mother and baby can enhance pregnant women's commitment to prenatal dental care. In this context, the Dental Surgeon plays an indispensable role in prenatal care. However, it's vital to acknowledge the significance of addressing queries and staying updated on prenatal dental care. This guarantees proper monitoring throughout pregnancy and the safe administration of necessary dental treatments[9].

The Previne Brasil Program stands as the current funding model for Primary Health Care (PHC) under the umbrella of SUS, established by Ordinance N°. 20979 on November 12, 2019. Following the inception of Previne Brasil, financial transfers to municipalities underwent a significant shift. They are now distributed based on four criteria: weighted capitation, payment for performance, incentives for strategic actions, and financial incentives derived from population criteria[10].

The payment-for-performance criterion, the allocated amount is contingent upon achieved outcomes across a set of indicators, one of which pertains to the proportion of pregnant women receiving dental care. This particular indicator is designed to promote pregnant women's accessibility to oral health services within the framework of Primary Health Care (PHC), integrating oral health as a standard component of prenatal care. It assesses the care process for pregnant women, focusing on dental consultations during the prenatal period[10].

Therefore, the aim of this study was to examine whether there exists a distinction in the care provided to pregnant women by dental surgeons working in the public sector in the state of Minas Gerais after the implementation of Previne Brasil.

Methodology

Ethical aspects and study design

Due to ethical and legal considerations concerning research involving human subjects, this study underwent review by the Ethics Committee of the Federal University of Alfenas, Minas Gerais (UNIFAL-MG), with the following CAAE opinion number: 48237821.4.0000.5142. The study conducted is a cross-sectional analytical field survey utilizing both qualitative and quantitative approaches.

Study population and eligibility criteria

The participants in the study are dental surgeons who work in the public sector of municipalities in the state of Minas Gerais. The state is located in the Southeast region, has a territorial area of 586.513.983km² and is made up of 853 municipalities[11]. The state of Minas Gerais has an administrative division into Superintendencies and Regional Health Managements, which aim to ensure management of the State Health System in the regions of the State, ensuring the quality of life of the population, of which: 19 SRS and 9 GRS[12].

Hence, dental surgeons employed within the public sector of Minas Gerais were considered for inclusion without discrimination based on gender, age, year of academic training, or dental specialization. Conversely, individuals who declined to provide consent via the Free and Informed Consent Form, dental surgeons not affiliated with the public sector in Minas Gerais, those practicing in other Brazilian states, dentistry students who have not completed their studies, and duplicate responses were excluded from the study.

Research and data collection instrument

The data collection took place for 11 months, facilitated by a questionnaire administered through Google Forms. An integral component of this process was the attachment of the Free and Informed Consent Form to the questionnaire, and non-compliance with signing this form was established as an exclusion criterion.

The questionnaire encompassed inquiries covering demographic details (such as gender, year of academic training, and dental specialization) and specific aspects of dental care for pregnant women. It delved into participants' knowledge regarding this subject, including understanding of the gestational period and preferred service timings, professional preparation for this service, satisfaction levels with the education received during their academic training, reasons underlying high or low demand for dental prenatal care, as well as the potential impacts of myths and taboos on reducing care-seeking behaviors. The questionnaire was disseminated virtually, through social networks (WhatsApp, Facebook, Instagram and e-mail). Therefore, the sample was selected by convenience and snowball effect.

Data analysis

The data obtained were tabulated and organized using the Excel 2016 program. For statistical analysis, the Statistical Package for the Social Sciences (IBM-SPSS®) version 29.0 software program was used, using Pearson's Chi-square statistical test, with level of statistical significance the value of $P<0.05$.

Results

A total of 1,696 responses were initially collected (n=1.696), and following the application of exclusion criteria, 1.001 valid responses were retained for the study (n=1,001). These responses specifically pertain to dental surgeons employed within the public sector of Minas Gerais (Figure A).
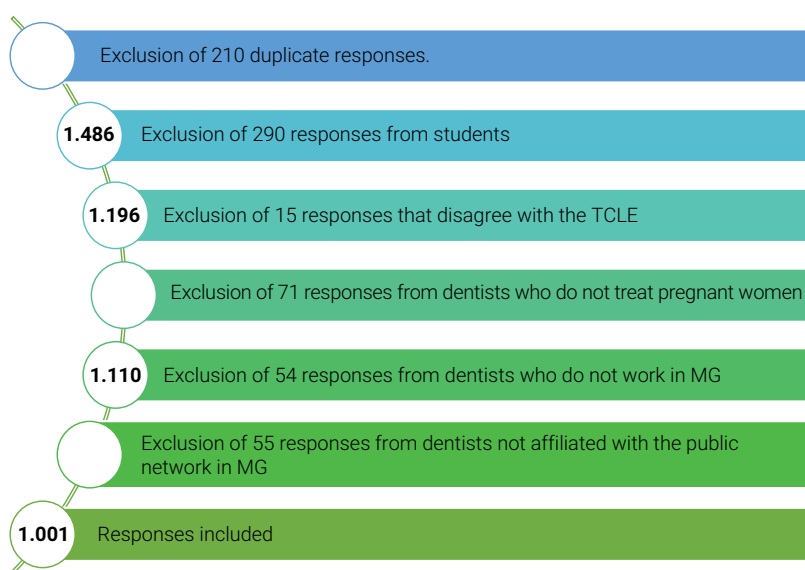

Figure A. Flowchart of responses included in the study.

- Exclusion of 210 duplicate responses.
- **1.486** Exclusion of 290 responses from students
- **1.196** Exclusion of 15 responses that disagree with the TCLE
- Exclusion of 71 responses from dentists who do not treat pregnant women
- **1.110** Exclusion of 54 responses from dentists who do not work in MG
- Exclusion of 55 responses from dentists not affiliated with the public network in MG
- **1.001** Responses included

Out of the 1.001 professionals included in the sample, a significant majority are women (77.6%). Regarding their workplace, 537 dentists (53.6%) practice solely within the public network, while 464 (46.4%) work in both the public and private sectors. In terms of their graduation year, 78.6% completed their training before 2019, while 20.1% were trained between 2019 and 2022. A small fraction of professionals (1.3%) did not provide information about their graduation year. Table 1 provides a breakdown of the characteristics of the dentists included in the study.

Table 1. Characteristics of the dental surgeons included in the study (n = 1.001).

Characteristics	Answers	Percentage
Sex		
Feminine	777	77.6%
Masculine	224	22.4%
Service sector		
Public	537	53.6%
Public and private	464	46.4%
Year of graduation		
Before 2019	787	78.6%
From 2019 to 2022	201	20.1%
No information	13	1.3%

Among professionals trained before 2019, 54.6% favored the morning for caring for pregnant women, while 58.7% of those trained after 2019 expressed the same preference (P=0.342), showing no statistically significant difference. Regarding the gestational trimester, 50.1% of professionals trained before 2019 and 57.7% of those trained after 2019 believed care could be provided during the 2nd or other trimesters. A statistically significant association was found (P=0.005) between the two groups in this regard.

Among professionals trained before 2019, 50.0% work in the public sector, whereas among those trained after 2019, the percentage rises significantly to 69.2% (P<0.01). Regarding dental surgeons trained before the implementation of Previne Brasil, 63.5% did not undergo any course or training on the topic. After the program's implementation, this figure notably increased to 79.6%, demonstrating a statistically significant association (P<0.01).

On a scale of 0 to 10, professionals reported an average satisfaction level of 5.52 regarding the accessibility of information during their graduation. From this perspective, 92.9% of them believe it's crucial to more effectively incorporate this theme into Undergraduate and Postgraduate courses. Among professionals trained before 2019, 24.6% advocate for the addition of mandatory practical classes to the curriculum. Additionally, 12.7% suggest increasing theoretical classes, 11.6% propose implementing extension projects, and 31.9% support the implementation of more than one of these actions. According to professionals trained after 2019, 26.9% support the implementation of practical classes, while 8.4% advocate for an increase in theoretical classes, and 10.9% stress the importance of implementing extension projects. Notably, 35.3% agree that addressing more than one of these actions is necessary, demonstrating a statistically significant association (P<0.01).

Among the various reasons cited for the low demand for dental prenatal care among pregnant women (Fear of treatment; Lack of knowledge/guidance/information on the part of the pregnant woman; Lack of knowledge/guidance/information on the part of the professional; Fear of problems with the fetus; Popular beliefs; Difficulty in mobility), 58.5% of professionals trained before 2019 and 69.6% of those trained after suggest that more than one of these factors contributes to the low care-seeking behavior among women (P=0.126), indicating no statistically significant difference.

Regarding the COVID-19 pandemic, 84.8% of the approached dental surgeons believe that it has had an influence on the decreased demand for dental prenatal care.

Discussion

This study evaluated, from the perspective of dental surgeons in the state public network in Minas Gerais, dental care for pregnant patients.

The study's findings suggest a notable increase in professionals working within the public sector, particularly among those trained after 2019 (20.1%), compared to those trained before 2019 (78.6%). This difference demonstrates a statistically significant association (P<0.01). One study, which focused on students in the final semester of the Dentistry Management and Planning course at the Faculty of Dentistry of the University of São Paulo (FOUSP) in 2014, 2015, and 2016, revealed that these students aspire to pursue specialization and further postgraduate education. Additionally, they also contemplate the potential of joining the public sector[13]. This result reaffirms the desire that recently graduated professionals have to work in the public sector and, often, this decision does not only depend on salary satisfaction, but also on the advantages acquired through employment, such as, for example, fixed monthly salary, 13th salary, paid vacations, sick leave, retirement and, mainly, stability in public employment[14].

The results present in this study also show that a high percentage of dental surgeons (63.5% trained before 2019 and 79.6% trained after 2019) did not receive training or did not take any course aimed at providing this service. Likewise, a survey carried out in 2017 with 260 dental surgeons working in the public network in the city of Belo Horizonte, Minas Gerais, showed that less than a third of professionals reported having received the necessary training to care for pregnant women through from the public network (24.4%) or self-employed (21.7%)[7]. These data highlight the lack of training in the majority of professionals who work in the public network. The admission assessment, based on written tests and title analysis, does not include an essential element for the performance of these professionals: the subjective dimension of their profiles, which influences their attitudes, personal conduct and interpersonal interactions. Therefore, it is common for many professionals working in the public network to face difficulties in adapting to work routines, resulting in lower-than-expected productivity levels and a high incidence of occupational illnesses. These factors ultimately end up harming the quality of care provided to the patient[15].

This reality contributes to the complexity in the implementation of dental prenatal care, because, as already mentioned, offering this type of care demands care and training from the dentist. In the absence of in-depth techniques and studies, the possibility of carrying out procedures without due safety arises, increasing the risk of complications[9].

In this context, the role of the Dentist in prenatal care is of utmost importance. However, it's crucial to acknowledge the significance of addressing doubts and staying updated with knowledge while dealing with this specific audience. This ensures that the monitoring during pregnancy is carried out appropriately and that necessary dental treatments are conducted safely[9].

The importance of integrating this subject from undergraduate studies becomes evident, allowing professionals to ensure success in providing care for pregnant women right from the start. In this study, the average satisfaction rating regarding the knowledge acquired during undergraduate studies about this topic was 5.52. Additionally, 92.9% of professionals deem it crucial to implement this subject more effectively during this initial period. Regarding acceptance of enhancements, the percentages of professionals graduated before and after 2019 (respectively) in favor of implementing practical classes were 24.6% and 26.9%, while for increasing theoretical classes were 12.7% and 8.4%, for considering the implementation of extension projects were 11.6% and 10.9%, and for addressing more than one of these actions were 31.9% and 35.3%, the latter with statistical significance ($P<0.01$).

Differing from this result and other examples cited in the literature, in the study conducted in Belo Horizonte, only 4.8% of dentists considered themselves insecure, while 75.6% received guidance on attending to pregnant women during their undergraduate studies[7]. Another challenge in implementing prenatal care arises from the uncertainty felt by pregnant women about the treatment. Professionals agreed (58.5% trained before 2019 and 69.6% trained after 2019) that it's not just an isolated reason but rather several factors that contribute to this issue.

In a study conducted in Campinas, São Paulo, among a group of 122 pregnant women with a per capita family income below 1 minimum wage, all women in the group underwent prenatal care. Only 6.5% reported facing any difficulty in its completion, citing challenges such as difficulty in accessing consultations at health facilities, lack of time, and resistance in accepting the pregnancy. This contrasts with examples in the literature that cite issues such as lack of knowledge about safe care, absence of interprofessional collaboration, cultural taboos, as well as anxiety and fear[16,17].

In this perspective, for safe care, several considerations must be taken into account. For instance, identifying the most suitable period during pregnancy for procedures, adopting appropriate clinical conduct during patient history-taking, and exercising careful use of medications and local anesthetics. Additionally, the dentist should possess the ability to refer high-risk pregnant women to specialized services[18].

Dental procedures can be performed during any stage of pregnancy if necessary to prevent major complications. However, the second trimester is considered the

most suitable because organogenesis is completed by this time. Although there aren't risks for the fetus in this regard during the third trimester, the discomfort level for the patient is typically higher[19].In this study, professionals regarded the morning as the most suitable time for attending to pregnant women and acknowledged that appointments can be scheduled during the 2nd trimester or later, aligning with scientific consensus. The percentages of professionals trained before and after 2019 (respectively) who considered the morning most appropriate (54.6% and 58.7%) and agreed on appointments during the 2nd or subsequent trimesters (50.1% and 57.7%) were noted, the latter with statistical significance (P=0.005). Among the positive aspects of this study is the high participation rate of dentists (n=1.001) and Health Regional Superintendencies (SRS), as only SRS did not take part in the study among the 28 SRS in the state. Sample losses occurred due to difficulties in obtaining responses from professionals, despite frequent dissemination across all State Health Superintendencies and Regional Health Managements during the data collection period.

Although the vast majority of participants reported not undergoing any course or training, this number is even higher among those more recently graduated. Additionally, professionals graduated after 2019 (35.3%) believe more in the necessity of implementing joint actions regarding dental care for pregnant women during undergraduate studies compared to those graduated before 2019. When approached about the optimal period for conducting prenatal dental care, participants graduated after 2019 provided more suitable responses. They believe, in a higher percentage, that the morning is more appropriate for attending to pregnant women and that appointments can be scheduled during the 2nd trimester or later, with a statistically significant association (P=0.005).

In conclusion, This study's findings suggest disparities in the approach to treating pregnant women among dentists working in the public sector of Minas Gerais before and after the establishment of Previne Brasil. Additionally, when conducted safely, prenatal dental care brings numerous benefits to both the mother and the baby. Therefore, limitations to its implementation should be minimized. It's evident that this subject requires better integration into undergraduate and postgraduate courses, as well as in health promotional activities, to combat the spread of myths and taboos.

Acknowledgments

Conflicts of interest

The authors have no conflict of interests to disclose.

Data availability

Datasets related to this article will be available upon request to the corresponding author.

Author contribution

Giovanna Mendonça Soares: Conceptualization, methodology, visualization; **Giovanna Freitas Raso**: Conceptualization, methodology, software, data curation, writing - original draft, writing - review and editing, visualization; **Isadora Custódio Moreira Santos**: Conceptualization, methodology, data curation, visualization; **Heron Ataíde Martins**: Methodology, visualization; **Ana Beatriz Vieira da Silveira:** Software, writing - review and editing, visualization: **Daniela Silva Barroso de Oliveira:** Conceptualization, methodology, visualization, supervision; **Daniela Coêlho de Lima:** Conceptualization, methodology, writing - review and editing, visualization, supervision. **Heloísa de Sousa Gomes:** Conceptualization, methodology, software, writing - review and editing, visualization, supervision.

The authors declare that all actively participated in the findings of the manuscript and reviewed and approved the final version of the manuscript.

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