Original Research Article

Factors associated with prenatal dental care from the perspective of dental surgeons

ABSTRACT

Aims: To investigate factors associated with prenatal dental care carried out by Brazilian dentists (DSs).
Study design: Cross-sectional study.
Place and Duration of Study: Dental clinic of the Dentistry school of the Federal University of Alfenas, between January 2022 and June2022.
Methodology:A questionnaire was administered to Brazilian DSs. The sample was selected by convenience and snowball effect from 18 states and the Federal District and were analyzed using Pearson's Chi-square and Likelihood ratio tests ($P < .05$).
Results: Of the 1,696 responses, 586 were excluded and 77.70% represented female DSs. Statistically significant association was observed between gender and year of graduation ($P = .01$), with the majority of the sample being composed of female professionals (graduated between 2014 and 2022). Among who believed that myths and taboos could influence the demand for treatment, 79.50% were female ($P = .01$). Among those who agreed that the COVID-19 pandemic was an aggravating factor in reducing this demand, were also female ($P = .02$). According to lack of guidance/knowledge on the part of pregnant women was one of the main reasons reported by 31.17% of males ($P = .01$). Pregnant women not able to take anesthesia was one of the main beliefs reported by female DSs ($P = .01$).**Conclusion:**There is a need for more information for pregnant patients and professionals, so that the myths and taboos that still exist don't influence the low demand for this type of care.

Keywords: pregnancy; prenatal care; oral health; dental care.

1. INTRODUCTION

Prenatal dental care is recommended by the Ministry of Health through guidelines that support the oral health care organization under the responsibility of the Unified Health System (SUS) [1]. It is through this care that possible complications can be verified, since the orofacial structures and teeth are formed during the intrauterine period. Furthermore, the mother's oral health can interfere with the general health of both mother and infant, with prenatal dental care being essential for the well-being of this binomial [2,3].

Dental care in Brazil has been provided mainly by female professionals. Since the 1970s, the feminization of Dentistry has been significant, with a gradual increase in the interest of women for the profession [4]. In 2020, the Federal Council of Dentistry (CFO) registered more than 71.82% of female dentists, technicians and oral health assistants [5]. Furthermore, these professionals tend to provide a more adequate care for pregnant patients [6].

With the significant increase in dental professionals in recent decades, the Brazilian dental market has undergone changes. There was an increase in popular clinics, establishing care at lower cost to a large number of patients, but with reduced financial return to dental surgeons (DSs), and the big change occurred in 2004, with the creation of the "BrasilSorridente" project, an oral health policy created by SUS. In this way, the number of DSs working in the public service increased by around 50% [7].

Although the number of Dentistry graduates has grown and oral health care for pregnant women is safe when appropriately indicated, there is resistance to this type of care, mainly due to myths, taboos and fears rooted in popular beliefs [8]. Thus, pregnant women, as they are unaware of information and needs of this stage of life, postpone treatment, so that dental demand during pregnancy is low [9, 10, 11].

Another factor that significantly contributed to the low demand for oral treatment was the COVID-19 pandemic. Since it was decreed in 2020, CFO and other competent bodies recommended that care should be provided only in cases of urgency and emergency, as aerosols produced in the office represented potential risks of SARS-CoV-2 transmission. Furthermore, the World Health Organization (WHO) considered the group of pregnant women to be at risk for contamination with the virus [12, 13, 14, 15].

Given the above, the study aimed to investigate factors associated with prenatal dental care from the perspectives of dental surgeons.

2. MATERIAL AND METHODS

2.1 Ethical aspects and study design

This cross-sectional study was approved by the Human Research Ethics Committee of the Federal University of Alfenas-MG (UNIFAL-MG) (CAAE:48237821.4.0000.5142) and carried out after participants agreed and signed the Free and Informed Consent Form (FICF), which was attached to the research instrument.

2.2 Study participants and eligibility criteria

The study was carried out with dental surgeons, public and/or private employees, without distinction of age. Overall, 1696 responses were obtained using the research instrument, from 18 different states and the Federal District. The sample was selected by convenience and snowball effect.

2.3 Research and data collection instrument

Data were collected using a questionnaire (Google Forms) elaborated based on questions such as year of graduation, reasons and beliefs associated with the low demand for dental care during the pandemic and whether myths and taboos influenced this demand. The instrument was sent through Email, WhatsApp and Instagram, as well as through phone calls and face-to-face visits.

2.4 Data analysis

Responses were tabulated in the Microsoft EXCEL 2016 software and analyzed using Pearson's Chi-square and Likelihood ratio tests, with significance level of $P<0.05$, in the Statistical Package for the Social Sciences (IBM-SPSS®) version 20.0.

3. RESULTS AND DISCUSSION

Of the 1696 responses obtained, 586 were excluded from the sample because responses were from professionals who did not provide care to pregnant women or did not agree with FICF, students or duplicates. Thus, the data analyzed corresponded to 1110 Brazilian dental surgeons, public and/or private employees, from 18 different states and the Federal District, 77.70% of whom were female. Table 1 shows the list of professionals participating in the research by Brazilian state and table 2 shows the relationship between sex of professionals and type of service, public and/or private.

Table 1: List of professionals participating in the research by Brazilian state.

State	**Number of professionals who responded to the questionnaire**	%

Bahia (BA)	3	0.27
Ceará (CE)	1	0.09
Distrito Federal (DF)	2	0.18
Goiás (GO)	6	0.54
Maranhão (MA)	2	0.18
Mato Grosso (MT)	2	0.18
Mato Grosso do Sul (MS)	1	0.09
Minas Gerais (MG)	**1052**	94.78
Pará (PA)	1	0.09
Paraná (PR)	2	0.18
Pernambuco (PE)	3	0.27
Piauí (PI)	3	0.27
Rio de Janeiro (RJ)	6	0.54
Rio Grande do Norte (RN)	2	0.18
Rondônia (RO)	1	0.09
Roraima (RR)	1	0.09
Santa Catarina (SC)	2	0.18
São Paulo (SP)	19	1.71
Tocantins (TO)	1	0.09
Total	1110	100

Source: from the author.

Table 2: Relationship between sex of professionals type of service, public and/or private.

		Dental service							
		Public		**Private**		**Public and private**		**Total**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Sex	Masculine	119	10.70	15	1.30	113	10.20	247	22.30
	Female	436	39.30	65	5.90	362	32.60	863	77.70
Total		555	50	80	7.20	475	42.80	1110	100

Source: from the author.

Statistically significant association was observed between sex of professionals and year of graduation (*P* = .01). Most professionals graduated between 2014 and 2022, with predominance of women (51.30%) compared to men (36.60%) who graduated in the same period. However, of the 1110 responses obtained, 11 participants did not respond to this information. Table 3 shows the percentage existing between the periods analyzed and the sex of professionals.

Table 3: Relationship between the periods analyzed and the sex of professionals.

Year of graduation

		Before 1999	%	Between 2000 and 2006	%	Between 2007 and 2013	%	Between 2014 and 2022	%
Sex	Masculine	89	36.60	25	10.30	40	16.50	89	36.60
	Female	173	20.20	121	14.10	123	14.40	439	51.30

Source: from the author.

Among professionals who believed that myths and taboos could influence the demand for dental treatment (88.60%), 79.50% were women (*P* = .01). Among those who agreed that the COVID-19 pandemic was an aggravating factor in reducing this demand (84.30%), 78.95% were also female (*P*=0.02).

When asked about the reasons why there is low treatment adherence and what associated reasons might be, there were several responses, but not all professionals responded to this question. In this way, a semantic grouping was carried out and the lack of guidance/knowledge on the part of pregnant women was the most evident among professionals, when analyzed separately, being mentioned by 22.40% of female dentists and 31.20% of male dentists (*P* = .01). On the other hand, the contraindication of local anesthesia for pregnant women was one of the main beliefs, in isolation, by female professionals (25.70%) compared to male professionals (17.96%) (*P* = .01). Tables 4 and 5 show which were the three reasons and two beliefs most mentioned by dentists, respectively.

Table 4: Three main reasons for low demand for dental treatment mentioned by professional, according to sex.

		Lack of guidance/knowledge on the part of pregnant woman		Popular beliefs		Fear of problems with the fetus	
		N	%	N	%	N	%
Sex	Masculine	77	31.20	15	6.10	8	3.20
	Female	193	22.40	38	4.40	35	4.10

Source: from the author.

Table 5: Two main beliefs highlighted by dentists, according to sex.

		Beliefs			
		Pregnant women can not take anesthesia		Treatment causes problems for the fetus	
		N	%	N	%
Sex	Masculine	37	17.96	33	16.00
	Female	202	25.70	92	11.70

Source: from the author.

Dental care during pregnancy in Brazil, according to study data, is provided mainly by female professionals. CFO registered registrations of more than 60% female dentists in 2018, corroborating the findings, given that from the year 2000 onwards, the number of female graduates, in general, was greater than that of male graduates, especially between the years 2014 and 2022 [16]. Women have stood out in the Brazilian job market, with more than 50% being early-stage entrepreneurs, placing the country in 7th place in the ranking of female entrepreneurship, once again reinforcing the research results [17,18].

According to the latest report from the “SB Brasil” project, which evaluates the oral health conditions of Brazilians, in 2010, the demand for private services (48.95%), in the Southeastern region, was greater than that for public services (41.31%) [19]. This region was the most affected; however, 50% of professionals indicated that they work exclusively in the public

sector, while only 7.20% work exclusively in the private sector, contradicting the report's findings. Furthermore, Kfouri and colleagues [20] reported that females are the majority in the Brazilian public dental service and that users prefer to be treated by female dentists, corroborating the findings of this research.

Although there is a significant increase of Dentistry professionals and care for pregnant women is prescribed in the National Oral Health Policy Guidelines, care for these patients is hampered by myths and taboos, originating from popular culture without scientific foundations [1, 8, 16, 21]. The majority of dental surgeons in this study agreed with the findings that these scientifically unfounded narratives influence the search of pregnant women for dental treatment, mainly due to beliefs about fear of anesthesia and treatment harming the fetus. Furthermore, Martins and colleagues [21] reported that the myth of oral health care causing problems for the fetus is still embedded in popular culture, making dental care difficult.

In addition to beliefs associated with dental care during pregnancy, another factor highlighted by professionals, especially male dentists, was the lack of knowledge/guidance on the part of pregnant women, directly interfering with the low demand for prenatal dental care. Cabral, Santos and Moreira [22] reported that pregnant women are unaware of important aspects related to oral health care during pregnancy, which causes a gap in prenatal dental care and directly contributes to the precarious oral health conditions of this group. Furthermore, Silveira, Abraham and Fernandes [23] elucidated that misinformation prevails among pregnant women about the importance of dental treatment during pregnancy.

Another factor considered aggravating the reduction in demand, especially for female professionals, was the COVID-19 pandemic. Corroborating the opinion of dental surgeons in this study, the Federal Council of Dentistry, in view of the high risk of contamination in the profession, recommended that care should be restricted to urgencies and emergencies. Furthermore, pregnant women were considered by the WHO to be at risk for COVID-19, strengthening the findings that they sought less prenatal dental care as a result of the pandemic [14, 15].

The positive point of this study is related to the fact that it covers a high number of Dentistry professionals who work in the care for pregnant women, mainly in the Southeastern region, especially in the state of Minas Gerais, even though dissemination was limited in terms of accessibility to professionals. However, the research was restricted to the opinions of dental surgeons who responded to the questionnaire, making it necessary to evaluate the opinion of pregnant women regarding their preference for the sex of professionals in future studies.

4. CONCLUSION

In view of results from this study, it could be concluded that female professionals believe that both myths and taboos and the pandemic are more related to the low demand for dental treatment when compared to reports from male professionals. On the other hand, male dentists gave more opinions about the main reason for this decline being the lack of knowledge on the part of pregnant women than female dentists. Thus, the results confirm the need for more information to be presented to pregnant patients, so that they can free themselves from pre-existing fears.

ETHICAL APPROVAL (WHEREEVER APPLICABLE)

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

REFERENCES

1. Ministry of Health. Health Care Secretariat. National Oral Health Policy Guidelines. Brasília, 2004.

2. Harb DA, Carmo WD, Boaventura RM. The importance of dental prenatal care. Revista Cathedral 2020,2(3):145-56.

3. Marginean C, Sasaran V, Marginean CO, Melit LE, Marginean MO. Prenatal diagnosis of cleft lip and cleft lip palate - a case series. Med Ultrason 2018, 20(4): 531-5. https://doi.org/10.11152/mu-1582

4. Costa SM, Durães SJA, Abreu MHNG. Feminization of the Dentistry course at the State University of Montes Claros. Ciênc. Saúde Colectivo 2010,15(1):1865-73. https://doi.org/10.1590/S1413-81232010000700100

5. Federal Council of Dentistry, CFO. International Women's Day: CFO highlights the historical importance of women's struggle in dentistry. 2018.

6. Olivo SM. Dental care for pregnant women: Myths and prejudices on the part of dental surgeons. Federal University of Santa Catarina [online publication]. 2013.

7. Martin ASS, Chisini LA, Martelli S, Sartori LRM, Ramos EC, Demarco FF. Distribution of Dentistry courses and dental surgeons in Brazil: a view of the job market. Revista da ABENO 2018,18(1):63-73. https://doi.org/10.30979/rev.abeno.v18i1.399

8. Aoyama LTA, Aoyama EA, Gomes RR. Dental care for pregnant women: literature review. R Odontol Planal Cent. 2020.

9. Gonçalves PM, Sonza Q. Dental prenatal care at health centers in Passo Fundo/RS. Journal of Oral Investigations 2018,7(2):20-32. https://doi.org/10.18256/2238-510X.2018.v7i2.2727

10. Santos Neto ET, Oliveira AE, Zandonade E, Leal MC. Access to dental care in prenatal care. Ciênc. Saúde Colectivo 2012,17(11):3057-68. https://doi.org/10.1590/S1413-81232012001100022

11. Rocha JS, Arima L, Chibinsk AC, Werneck RI, Moysés SM, Baldani MH. Barriers and facilitators to dental care during pregnancy: a systematic review and meta-synthesis of qualitative studies. Cad. Saúde Pública 2018,34(8):e00130817. https://doi.org/10.1590/0102-311X00130817

12. Ge Z, Yang L, Xia JJ, Fu X, Zhang Y. Possible aerosol transmission of COVID-19 and special precautions in dentistry. J Zhejiang Univ Sci B 2020,21(5):361–68. https://doi.org/10.1631/jzus.B2010010

13. Carletto AF, Santos FF. The role of the family dentist in the Covid-19 pandemic: the Rio de Janeiro scenario. Physis: Revista de Saúde Coletiva 2020,30(3):e300310. https://doi.org/10.1590/S0103-73312020300310

14. Castro P, Matos AP, Werner H, Lopes FP, Tonni G, Araujo Júnior E. COVID-19 and Pregnancy: An Overview. Rev Bras Ginecol Obstet 2020,42(7):420-26. https://doi.org/10.1055/s-0040-1713408

15. Moura ABR, Goes VN, Palmeira JT, Freire JCP, Dias-Ribeiro E. The challenges of dental practice in the face of COVID-19: a literature review. Arch Health Invest 2021,10(9):1403-8. https://doi.org/10.21270/archi.v10i9.535

16. Federal Council of Dentistry, CFO. Statistical Data [webpage]. 2023.

17. Baur G, Cardoso MB, Spiger V, Amante CJ. Entrepreneurial profile of Dentistry students at the Federal University of Santa Catarina. ABENO Magazine 2016;16(2):77-82.

18. BRAZILIAN SUPPORT SERVICE FOR MICRO AND SMALL BUSINESSES. Sebrae in data: female entrepreneurship. Sebrae Pr, 2023.

19. Ministry of Health. National Oral Health Survey. SB Brasil, 2010. Brasília, 2012.

20. Kfouri MG, Moysés ST, Gabardo MCL, Nascimento AC, Rosa SV, Moysés SJ. The feminization of dentistry and the perceptions of public service users about gender issues in oral health. Ciênc. Saúde Colectivo 2019,24(11):4285-96. https://doi.org/10.1590/1413-812320182411.00832018

21. Martins LO, Pinheiro RDPS, Arantes DC, Nascimento LS, Santos Júnior PB. Dental care for pregnant women: perception of the dental surgeon. Rev Pan-Amaz Saude, 2013,4(4):11-8. http://dx.doi.org/10.5123/S2176-62232013000400002

22. Cabral MCB, Santos, TS, Moreira TP. Perception of pregnant women in the Family Health Program in relation to oral health in the city of Ribeirópolis, Sergipe, Brazil. Rev Port Saúde Pública 2013,31(2):160-67. https://doi.org/10.1016/j.rpsp.2013.05.004

23. Silveira, JLGC, Abraham MW, Fernandes CH. Pregnancy and oral health: meaning of oral health care for pregnant women not adhering to treatment. Rev APS 2016,19(4):568-74.