Oral health status of pregnant and puerperal women in the municipality of Feira de Santana, at three different times between 2005 and 2015*

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Abstract

Objective: to evaluate the oral health condition of pregnant/postpartum women attending public services in the city of Feira de Santana, BA, Brazil, at three different times between 2005 and 2015. **Methods**: this is a study socioeconomic and demographic characteristics, health condition and health care, lifestyle and oral health status of 1,245 participants obtained from a database of three previous investigations: I Intervention Study (2005-2007); II Case-Control Study (2010-2011); III Case-Control Study (2012-2015). **Results**: comparing the three periods, the frequency of gingivitis (24.41% versus 8.90% versus 5.77%; p<0.01) and periodontitis (44.64% vs 9.16% vs 11.55%; p<0.01) was found to decrease; the worst dental conditions regarding the number of teeth present, healthy and extracted and the DMFT index were found in period III compared to period II. **Conclusion**: an improvement was seen in the participants' periodontal condition over time, which coincides with the implementation of policies pertaining to women's health, oral health and income redistribution in this city.

Keywords: Pregnancy; Oral Health; Health Policy.

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Introduction

During pregnancy multiple physiological changes occur in a woman's body. Examples include oral homeostasis modification which in turn results in a large number of alterations,[1] in particular those directly linked to oral hygiene factors, such as dental caries and periodontal diseases.

Pregnant women are more predisposed to dental caries due to frequent consumption of carbohydrates and increased acidity of the mouth because of frequent vomiting. Gingival inflammation, in turn, can be influenced by hormonal changes, poor oral hygiene or not having check-ups with a dental surgeon.[2]

In spite of the oral health of pregnant women not receiving necessary attention, this being attributed to the existence of taboos together with lack of information, attempts have been made to change this scenario in recent decades. Dental education actions aimed at this population group have been supported by national programs, such as the inclusion of dental check-ups as part of prenatal care on the Brazilian Unified Health System (SUS).[3]

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Since the mid 1990s, the Brazilian Ministry of Health has been developing a series of policies to improve the quality of care for pregnant women, in compliance with the principle of the provision of integral care by the Public Health system.[4] Standing out among these policies is the inclusion, in the year 2000, of oral health care teams (OHT) as part of the Family Health Strategy (FHS). Thanks to the SUS National Oral Health Policy, known as Smiling Brazil (Brasil Sorridente), the population also has access to specialized treatment at public Dental Specialty Centers (DSC).[5] The income redistribution programs, strengthened with effect from 2003, have positively impacted improved quality of life of this population group. Nevertheless, it should be pointed out that the various health policies did not begin and were not consolidated at the same time throughout Brazil, but rather this process took place on a state by state basis.

Since the end of the 1990s, the oral health status of pregnant and puerperal women cared for by public health services in the municipality of Feira de Santana, BA, has been investigated by the State University of Feira de Santana Center for Research, Integrated Practice and Multidisciplinary Investigation (NUPPIIM-UEFS). In view of this panorama of health policies and programs and their possible contribution to changing the oral health pattern of these women, the objective of this study was to evaluate the oral health status of pregnant and puerperal women attending public health services in the city of Feira de Santana, Bahia, Brazil, at three different times between 2005 and 2015.

Methods

This study was designed to compare the oral health status of pregnant and postpartum women attending public services the municipality of Feira de Santana, at three different times between 2005 and 2015. The study based itself on a database derived from previous research conducted by NUPPIIM-UEFS intended to investigate the 'Relationship between periodontal disease in pregnant women and premature and/or low weight babies'.

In 2010 Feira de Santana had a population of 556,642 inhabitants, 292,643 of whom were women. The median income of working women in f the municipality aged 16 years or over was R$ 510.00. At that time Feira de Santana had 148 SUS service facilities.[6]

The participants of this study were pregnant and postpartum women who sought care at public health services, primary health care units (PHU) and the Inácia Pinto dos Santos Women's Hospital. These comprised some of the local health facilities providing care via SUS between 2005 and 2015.

Pregnant and postpartum women at the PHUs were invited to participate in the study. Women who were at the Women's Hospital to give birth and who were hospitalized for less than 7 days were also invited to participate.

The sample of women to be studied was comprised of the sum of the samples of rom three studies conducted between 2005 and 2015: I Intervention study 2005-2007 (336 women); II Case-control study 2010-2011 (372 puerperal women), and III Case-control study 2012-2015 (537 puerperal women). All three studies were conducted by the same group of researchers. The eligibility criteria adopted by these

studies have been described in previous publications.[7-9] All participants answered a questionnaire designed to collect the following information: socio-demographic data, gestational history, life habits and oral health-related aspects.

In all three studies, each participant underwent a complete oral clinical examination, performed by a previously trained dental surgeon. Consistency between clinical measurements was calculated using the Kappa interexaminer index,[10] taking the values of 0.78 and 0.88 for interexaminer consistency for probing depth and recession measurements, respectively (with a difference of ±1mm).

The following descriptors were measured in the periodontal examination: probing depth; bleeding on probing index; visible plaque index; and gingival recession. Clinical attachment levels were taken for the entire oral cavity. These measurements were performed at six different locations, for each dental unit; except for the visible plaque index which was only assessed at four sites.

The assessment of the presence of dental caries was based on the DMFT index, the value of which corresponds to the sum of the number of decayed, missing and filled/restored teeth in each individual, according to the World Health Organization (WHO).[11] This assessment was performed only for the 2010-2011 and 2012-2015 study periods.

The participants were also evaluated as to the presence of gingivitis or periodontitis. The definition of periodontitis was based on two categories: presence and severity of the disease.[8,12,13]

If participant oral health status was altered beyond normal limits, they were given guidance referred for appropriate treatment.

Using NUPPIIM-UEFS research databases, original data were gathered from three previous studies on the participants' socio-demographic characteristics, lifestyle, history of general health and dental and periodontal status. When the data sets were complete, i.e. they contained all this information, regardless of the study period, they were selected for a new database built with the aim of unifying the data from each study and allowing the comparative analyses foreseen in the study design.

Diagnosis of presence of periodontitis was based on two criteria. According to criterion 1 (Gomes-Filho),[8,14] participants were diagnosed as having periodontitis when they had at least four teeth, with one or more sites with probing depth greater than 4mm, clinical attachment level greater than or equal to 3mm at the same site and presence of bleeding on probing. According to criterion 2 (Page & Eke[12] and Eke et al.),[13] participants were diagnosed as having periodontitis according to the mild, moderate and severe levels described below:

a) Severe periodontitis - participants who had at least two interproximal sites with clinical attachment level greater than or equal to 6mm, in different teeth, and at least one interproximal site with probing depth equal to or greater than 5mm.

b) Moderate periodontitis - participants who had at least two interproximal sites with clinical attachment level greater than or equal to 4mm, or at least two interproximal sites with probing depth equal to or greater than 5mm, in different teeth.

c) Mild periodontitis - among the remaining participants, those who had at least two interproximal sites with clinical attachment level greater than or equal to 3mm, or at least two sites with probing depth of 4mm (not in the same teeth), or a site with probing depth greater than or equal to 5mm.

After defining which participants had periodontitis, the remaining women were diagnosed as having gengivitis if they had bleeding on probing at least 25% of sites

The DMFT index[11] value corresponded to the sum of the number of permanent decayed, missing and filled teeth of each participant. For each period, this variable was assessed in a continuous manner, obtaining the respective averages and standard deviations, as well as their categorization into three bands: DMFT equal to 0; DMFT of 1 to 3; and DMFT greater than 3.

The period of analysis, from 2005 to 2015, was selected because of the availability of the NUPPIIM-UEFS database, which coincides with the period of deployment/consolidation of national policies on women's health and oral health in the municipality of Feira de Santana. Data collection for the three studies referred to was carried out in three periods: period I, from 2005 to 2007; period II, from 2010 to 2011; and period III, from 2012 to 2015.

We carried out a descriptive analysis of the variables of interest for each of the three selected time periods. Simple frequencies were obtained for continuous variables, while measures of central tendency and dispersion were obtained for categorical variables.

Comparisons were made between the first period (2005-2007) and the two more recent periods (2010-2011 and 2012-2015), as well as between the last two periods, using Pearson's chi-square test for categorical variables and the Mann-Whitney t test, for numerical variables, according to the distribution of these variables having a 5% significance level. Due to the incompleteness of the database of the first period, some characteristics of its respective sample, as well as variables relating to dental caries and diagnosis of the severity levels of periodontitis, were not compared between the three periods evaluated. All analysis was performed using SPSS version 17.0.

The study project was approved by the State University of Feira de Santana Ethics Research Committee (Registration No. 1110707/2015) and all participants signed the Free and Informed Consent form.

Results

The final sample of this study had 1,245 participants and corresponds to the sum of the samples of studies performed during period I (2005-2007); period II (2010-2011) and period III (2012-2015), with participant average age ± standard deviation being 25.24 ± 6.12 years, 23.87 ± 6.67 years and 25.10 ± 6.6 years, for these periods, respectively.

Table 1 shows the characterization of the participants. Comparisons were made between the characteristics of the women from period I and the women from the other two more recent periods (II and III). When comparing the last two periods, the fact that the vast majority of the variables have no significant differences shows homogeneity between the groups investigated.

Almost all the characteristics of participants in period I were found to have statistically significant differences (p <0.05) in relation to the corresponding characteristics of participants in periods II and III. Only age showed no statistically significant difference when comparing the first period (2005-2007) and the last period (2012-2015). However, an increase in the frequency of pregnant and postpartum women in age extreme age ranges - lower than 18 years and greater than 35 years - was noted when comparing the first period to the other two periods (15.8% versus 26.3% versus 20.9%).

In general, there was a greater frequency of women in the first period, when compared to those in the last two periods, when considering family income of up to one minimum wage (75.9% vs 67.3% vs 69.8%), absence of partners (33.3% vs 20.0% vs 20.8%) and failure to have prenatal examinations (89.8% vs 1.4% vs 1.1%). With respect to household density, there was a higher percentage of households with four or more people among the participants of the more recent periods, when compared to those from the period 2005-2007 (43.0% vs 66.7% vs 67.2%); the same growth was found for the frequency of women with hypertension (6.0% vs 14.6% vs 15.1%) and urinary tract infection (21.7% vs 33.5% vs 32.8%).

Table 2 shows the distribution of the variables related to the periodontal status of women in two more recent periods (II and III). Women assessed in period III (2012-2015) had a lower average number of teeth with probing depth ≥4mm when compared to those from period II, with statistically significant difference (p < 0.05). Median clinical attachment levels and median probing depth increased in the most recent period. With regard to gingival inflammation, the worst situation was also found among participants of the last period, as the average gingival bleeding percentage was higher.

The participants were classified by diagnosis of periodontitis and gingivitis according to criterion 1 for all three study periods (Table 3). Comparison between participants from the first period (2005-2007) and participants from the two more recent periods (2010-2011 and 2012-2015) showed an improvement in periodontal status over the years, as evidenced by the reduction of frequencies of gingivitis (24.4% versus 8.9% versus 5.8%; p<0.01) and periodontitis (44.6% versus 9.2% versus 11.6%; p<0.01), with statistically significant differences.

Women from the last two periods were also classified by diagnosis of periodontitis, according to two different criteria, and were compared with each other (Table 4). Periodontitis frequency increased approximately threefold in relation to criterion 1. When women were classified according to criterion 2, and reclassified as to gingivitis, there was approximately a threefold decrease in the occurrence of this condition. No statistically significant difference was observed between gingivitis and periodontitis when comparing periods II and III.

Table 3 also shows the distribution of participants regarding the level of severity of periodontitis,

Table 1 – Number (N) and percentage (%) of socio-demographic characteristics related to general health conditions and oral health habits among participants (n=1,245), according to the three study periods. Feira de Santana, Bahia, 2016

Socio-demographic characteristics	Period I (2005-2007) N=336		Period II 2010-2011 N=372			Period III 2012-2015 N=537		pᵃ
	N	%	N	%		N	%	
Age (in years)								
18-35	283	84.23	274	73.66	<0.01	425	79.14	0.06
<18 e >35	53	15.77	98	26.34		112	20.86	
Maternal skin color								
White	–	–	40	10.93	–	463	9.57	–
Not white	–	–	326	89.07		49	90.43	
Education level (in years of study)								
>4	–	–	322	87.27	–	444	85.39	–
≤4	–	–	47	12.73		76	14.61	
Family income (in monthly minimum wages)								
>1	81	24.11	119	32.69	–	154	30.20	0.05
≤1	255	75.89	245	67.31		356	69.80	
Marital status								
With a partner	224	66.67	296	80.00	<0.01	423	79.21	<0.01
Without a partner	112	33.33	74	20.00		111	20.79	
Household density (number of people)								
<4	180	56.97	120	33.33	<0.01	155	32.84	<0.01
≥4	136	43.03	240	66.67		317	67.16	
Smoking in pregnancy								
No	–	–	359	96.77	–	482	95.44	–
Yes	–	–	12	3.23		23	4.56	
Alcohol in pregnancy								
No	–	–	329	88.68	–	440	85.27	–
Yes	–	–	42	11.32		76	14.73	
Consultation with the dental surgeon during pregnancy								
Yes	–	–	104	28.03	–	186	35.03	–
No	–	–	267	71.97		345	64.97	
Dental surgeon guidance on oral health								
Yes	–	–	68	18.33	–	119	27.10	–
No	–	–	303	81.67		320	72.90	
Brushing frequency								
> once a day	–	–	368	98.92	–	523	97.40	–
≤ once a day	–	–	4	1.08		14	2.60	
Use of floss								
Yes	–	–	125	33.70	–	196	36.70	–
No	–	–	246	66.30		338	63.30	

Table 1 – Number (N) and percentage (%) of socio-demographic characteristics related to general health conditions and oral health habits among participants (n=1,245), according to the three study periods. Feira de Santana, Bahia, 2016

Socio-demographic characteristics	Period I (2005-2007)		Period II 2010-2011			Period III 2012-2015			p[a]
	N=336		N=372			N=537			
	N	%	N	%		N	%		
Arterial hypertension									
No	316	94.05	316	85.40	<0.01	439	84.91		<0.01
Yes	20	5.95	54	14.60		78	15.09		
Diabetes									
No	–	–	368	99.73	–	507	98.64		–
Yes	–	–	1	0.27		7	1.36		
Urinary tract infection									
No	262	77.98	246	66.49	<0.01	346	67.18		<0.01
Yes	73	21.72	124	33.51		169	32.82		
Prenatal care									
Yes	33	9.85	366	98.65	<0.01	524	98.87		<0.01
No	302	89.85	05	1.35		06	1.13		

a) P: ≤0.05 significance level
Note:
/n = data not available in the original database, to enable differences to be calculated.

according to criterion 2, for period II and period III. Statistically significant difference was only found for the frequency of mild periodontitis, which occurred more in the last period (1.9% versus 5.6%; p<0.01). Moderate periodontitis was the most frequent among the levels of severity assessed; however, this showed no statistically significant difference between the women from the last two periods.

With respect to dental status (Table 4), the worst situations (mean ± standard deviation) were found in the group of women assessed in period III, with statistically significant difference (p < 0.05): the lowest average quantity of teeth present (27.2 ± 4.1), the lowest average number of healthy teeth (22.8 ± 6.2), the highest mean number of teeth extracted (3.4 ± 4.2) and the highest DMFT (7.6 ± 6.0). Still in relation to dental status, women from period II showed a greater need for single prostheses (crown) and extraction when compared to those from period III (0.2 ± 0.7 and 0.2 ± 0.8, respectively).

When analyzing DMFT by category in Figure 1, a greater percentage of individuals with DMFT >3 in period III can be seen in relation to the period II (72.4% vs 56.1%; p<0.001); a statistically significant difference (p<0.001) can also be seen between the remaining categories for both periods. The percentage composition of this index shows that the 'decayed teeth' component decreased and the 'missing teeth' component increased in the most recent period (Figure 2, A/B).

Discussion

According to the principal findings, there was an improvement in periodontal status over the total period studied (2005-2015), coinciding with the emergence and consolidation of policies on women's health and oral health in the municipality of Feira de Santana. However, positive findings were not identified with regard to dental status. This indicates the curative model of care,[15] still in force in public dental services, as well as an historical build-up due to lower access to dental treatment. These findings are corroborated by a descriptive study on the caries experience carried out in 2005 among adolescents and adults residing in the municipality of Salvador, capital of the state of Bahia, located 110km from the municipality of Feira de Santana.[16]

Table 2 – Average, standard deviation (SD), median and interquartile range (IQR) of the variables related to periodontal status (n=909), for the periods 2010-2011 and 2012-2015, Feira de Santana, Bahia, 2016

Variables Periodontal status	Period II (2010-2011) N=372 Median ± DP Median [IQ]	Period III (2012-2015) N=537 Median ± DP Median [IQ]	pª
Visible plaque index	14.71 ± 54.05 5.23 [0.00;16.7]	9.47 ± 15.13 5.00 [2.78;10.00]	0.07
Gingival bleeding index	7.05 ± 11.63 1.92 [0.00;8.33]	8.98 ± 12.1 5.50 [2.00;11.00]	0.02
Average probing depth	1.87 ± 1.33 1.60 [1.38;2.14]	1.83 ± 0.56 1.80 [1.50;2.10]	0.57
Average clinical attachment level	2.05 ± 2.40 1.65 [1.38;2.20]	2.04 ± 1.32 1.82 [1.58;2.26]	0.96
Number of teeth with clinical attachment level 1 and 2	16.19 ± 9.14 18.00 [8.00;24.00]	17.12 ± 6.33 17.00 [13.00;22.00]	0.09
Number of teeth with clinical attachment level 3 and 4	8.04 ± 7.22 6.00 [2.00;14.00]	7.14 ± 4.93 6.00 [3.50;10.0]	0.04
Number of teeth with clinical attachment level ≥ 5	0.98 ± 2.30 0.00 [0.00;1.00]	1.01 ± 2.16 0.00 [0.00;1.00]	0.87
Number of teeth probing depth ≥4mm	4.19 ± 8.71 0.00 [0.00;5.00]	1.32 ± 2.75 0.00 [0.00;2.00]	<0.01

a) P: ≤0.05 significance level.

Table 3 – Number (N) and percentage (%) of participant periodontal status (n=1,245), according to the study periods, Feira de Santana, Bahia, 2016

Periodontal status	Period I (2005-2007) N=336		Period II 2010-2011 N=371		Period III 2012-2015 N=537		pª
	N	%	N	%	N	%	
Diagnosis of periodontal status							
Without gingivitis/periodontitis	104	30.95	304	81.94	444	82.68	
Gingivitis	82	24.41	33	8.90	31	5.77	<0.01
Periodontitis	150	44.64	34	9.16	62	11.55	<0.01
Diagnosis of periodontitis							
Without gingivitis/periodontitis	–	–	216	58.22	313	58.29	
Gingivitis			12	3.23	8	1.49	0.09
Periodontitis	–	–	143	38.55	216	40.22	0.61
Diagnosis of periodontal status and level of periodontitis severity							
Without gingivitis/periodontitis	–	–	216	58.22	313	58.29	
Gingivitis	–	–	12	3.24	8	1.49	0.09
Mild periodontitis	–	–	7	1.89	30	5.59	<0.01
Moderate periodontitis	–	–	119	32.07	169	31.47	0.96
Severe periodontitis	–	–	17	4.58	17	3.16	0.23

a) P: ≤0.05 significance level.

Table 4 – Average, standard deviation (SD), median and interquartile range (IQR) of the variables related to periodontal status (n=909), for the periods 2010-2011 and 2012-2015, Feira de Santana, Bahia, 2016

Dental status variables	Period II (2010-2011) N=372 Median ± DP Median [IQ]	Period III (2012-2015) N=537 Median ± DP Median [IQ]	p[a]
Number of teeth	29.48 ± 3.57 31.00 [28.00;32.00]	27.23 ± 4.13 28.00 [26.00;30.00]	<0.01
Number of decayed teeth	2.05 ± 2.91 1.00 [0.00;3.00]	2.23 ± 3.08 1.00 [0.00;3.00]	0.41
Number of missing teeth	1.93 ± 3.14 0.00 [0.00;3.00]	3.39 ± 4.20 2.00 [0.00;5.00]	<0.01
Number of filled teeth	1.76 ± 3.07 0.00 [0.00;3.00]	2.11 ± 3.25 0.00 [0.00;3.00]	0.13
DMFT index[b]	5.70 ± 5.14 5.00 [1.00;9.00]	7.65 ± 6.05 7.00 [3.00;11.00]	<0.01
Needing filling	1.57 ± 2.36 0.00 [0.00;2.00]	1.95 ± 3.10 1.00 [0.00;3.00]	0.05
Needing crown	0.15 ± 0.66 0.00 [0.00;0.00]	0.03 ± 0.22 0.00 [0.00;0.00]	<0.01
Needing pulp treatment / filling	0.43 ± 0.95 0.00 [0.00;1.00]	0.40 ± 0.93 0.00 [0.00;0.00]	0.61
Need ing extraction	0.24 ± 0.83 0.00 [0.00;0.00]	0.03 ± 0.30 0.00 [0.00;0.00]	<0.01
Number of healthy teeth	25.66 ± 6.11 27.00 [23.00;31.00]	22.85 ± 6.22 24.00 [19.00;28.00]	<0.01

a) P: ≤0.05 significance level
b) DMFT: sum of the number of permanent decayed, missing and filled teeth.
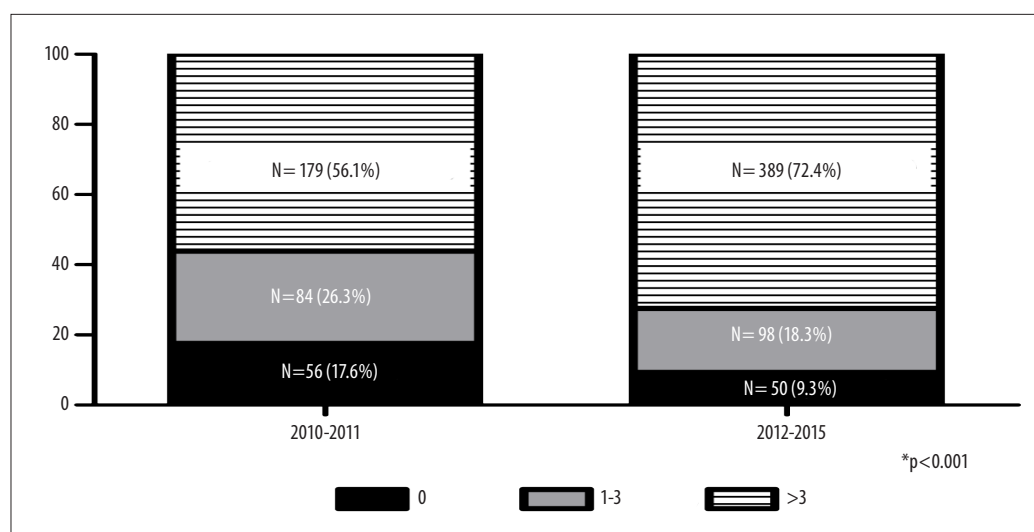
a) DMFT: sum of the number of permanent decayed, missing and filled teeth.

Figure 1 – Categorization of the DMFT index[a] for the periods 2010-2011 and 2012-2015, Feira de Santana, Bahia, 2016
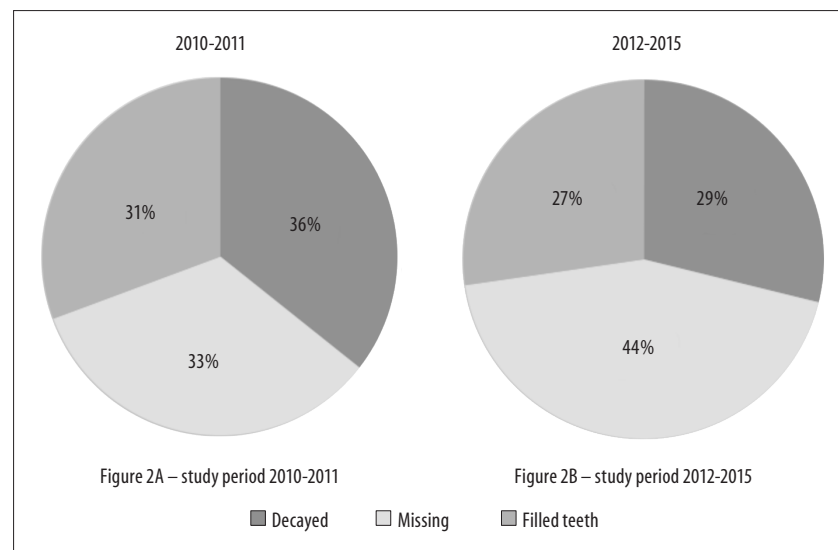
a) DMFT: sum of the number of permanent decayed, missing and filled teeth.

Figure 2 – Categorization of DMFT Percentile for the periods 2010-2011 and 2012-2015. Feira de Santana, Bahia, 2016

When compared with each other, the remaining characteristics of participants from the more recent periods (2010-2011 and 2012-2015) showed homogeneity between groups, since the majority of the variables showed no difference between groups; however, they did differ from the characteristics of the women from the first period investigated (2005-2007).

The changes observed in the characterization of this population group can be explained by the facilitated access of women to health actions, such as the Integral Care for Women Program (PAISM) and the Program for Humanization of Prenatal and Birth Care (PNHP).[17] These changes can also be a result of the strengthening of federal government social programs, as reflected in increased household density and family income.

The Family Health Program (FHP) was implanted at national level in 1994, with the main goal of reorganizing Primary Care practice in Brazil;[18] renamed as the Family Health Strategy (FHS) in 2006, it prioritizes preventive and health recovery actions. The inclusion of the Oral Health teams (OHT) in the FHS occurred in 2000 as an attempt to improve morbidity rates and make access to oral health less unequal.[19]

It is worth mentioning that the emergence of these programs occurred in different periods in the various units of the federation (states). In the municipality of Feira de Santana, the first FHP team was established in the year of 2000; and the first Oral Health team in 2004.[20]

The dental surgeon, as a member of a multidisciplinary team, joined other professionals in the implementation of preventive actions for the most diverse groups,[21] in particular care for pregnant women, given the close relationship between the gestational period and changes in oral health status.[22,23]

Income redistribution strategies were also created, in particular the federal government's Bolsa Família Program and the benefits granted to families living in poverty or extreme poverty, with variable increases in the benefit for those families comprising pregnant women, nursing mothers, children and adolescents.[24,25]

However, not all the improvements in the indicators of oral health are solely due to public services. In the period studied there was an expansion in both the supply of health services and also affordable private dental plans, reiterating the inequalities in access to services, even in the context of the expansion of public dental care.[26]

With regard to this evaluation of periodontal status, two criteria for the classification of periodontitis were employed during data collection. One of them, proposed by Page & Eke[12] and Eke et al.,[13] aims to

assess population-based measures of periodontal disease morbidity, in addition to allowing stratification of periodontitis according to its level of severity. The other criterion, proposed by Gomes-Filho,[14] has been indicated for research intended to estimate the association between two diseases, due to its good specificity which is attributed to a combination of three clinical descriptors.[8]

Although the first criterion mentioned in the previous paragraph reflects more faithfully the frequency of periodontitis in the female population group, the second criterion[8] reaffirms the trend toward reduction in the occurrence of periodontal disease when comparing the three study periods. It is also important to highlight that full periodontal clinical examination was performed, involving six sites in each tooth, because partial examinations which are commonly employed in population-based studies tend to increase the likelihood of misclassification of disease.[12]

When analyzing the caries experience in this study's sample, in general average participant DMFT indices are below those obtained at national level for adults.[27] DMFT was chosen because it expresses the history of disease over time, taking into account the outcomes of decayed, missing and filled teeth. It is an index widely used in epidemiological surveys, to evaluate the experience of dental caries in populations.[11]

The increased rates of DMFT observed were due more to the 'missing teeth' and 'filled teeth' components, which represent treatment, rather than the 'decayed teeth' component, which reflects disease incidence. These findings are consistent with data observed in 2005 among adolescents and adults in the municipality of Salvador, where the DMFT index was 3.1 for the 19-19 age range, with emphasis on the 'decayed' component, while for the 35-44 age group DMFT was 14.1, with a relevant participation (60%) of the 'missing' component.[15]

On the one hand, the predominance of tooth loss in caries experience (approximately 44% of the DMFT index) may represent historical suppressed demand, on the other hand it contributes to the discussion about the persistent practice of mutilation as the best form of dental treatment,[28] and historic accumulation due to lower access to this treatment via the health service.

Despite the emergence of health policies, specifically the Family Health Strategy, access to health services is still precarious. In Feira de Santana, oral health teams working as part of FHS only began in 2004, with just 11 teams. The number of OHT increased gradually to just 39 teams in 201519, this being insufficient to provide adequate dental care coverage to the population.

The number of Dental Specialty Centers (DSC) created under the SUS Smiling Brazil (Brasil Sorridente) National Oral Health Policy is also not capable of meeting the population's needs. This fragile level of care contributes to lack of solving and worsening of oral health problems,[28] compelling Primary Care professionals to work from the perspective of the curative model of care, thus perpetuating edentulism arising from practices involving mutilation.

Despite the findings indicating improved periodontal status in relation to the initial period of the study, occurrence of the diseases investigated remains high, inspite of knowledge of the effect of both periodontitis and dental caries on the stomatognathic system and alteration in chewing ability, speech and digestion, which in turn has repercussions on self-esteem, job performance and social relationships. The importance of controlling these diseases is also reinforced by the fact of previous studies having demonstrated the association between periodontitis and systemic diseases and conditions, such as premature birth and low weight at birth.[29-30]

Authors' contributions

Trindade SC contributed to the design of the study, data analysis, interpretation and discussion of the results and to writing the manuscript. Gomes Filho IS participated in the design of the study, interpretation and discussion of the results and writing the manuscript. Barreto JAR participated in obtaining data, discussion of the results and writing the manuscript. Barreto Neto LO participated in obtaining data and discussion of the results. Passos-Soares JS, Vianna MIP, Azevedo ACO, Genovese WJ, Cruz SS and Barreto ML participated in the discussion of the results and contributed to drafting the manuscript. All authors approved the final version and declared themselves to be responsible for all aspects of the study, ensuring its accuracy and integrity.

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