




Original Research

Oral health-related knowledge and practices among a cohort of pregnant Portuguese women



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ABSTRACT

Objectives: To assess the level of knowledge and attitudes regarding prenatal and infant oral health in a sample of pregnant women from Coimbra, Portugal.

Methods: A self-applied questionnaire was administered to randomly selected pregnant women who attended prenatal check-ups at two public health institutions in Coimbra. Collected data included sociodemographic information, oral health knowledge and practices in pregnancy, and knowledge on oral health in children. All ethical requirements were met. Statistical analysis was conducted using descriptive and inferential methods. Variables were tested for independence using a chi-square test with a 95% confidence interval.

Results: A total of 120 women enrolled in the study. Although 68.9% of participants brushed their teeth twice daily, 36.4% reported not using floss, with a statistically significant association with age ($p=0.004$). Half of the respondents had not attended a dental appointment before pregnancy, and 59.2% believed pregnancy could be harmful to oral health. Findings showed limited knowledge of the possible consequences of gingivitis and periodontitis to the course of pregnancy and the importance of diet in oral health. Moreover, a low level of understanding was noted regarding the existence and prevention of early childhood caries.

Conclusions: Oral health-related knowledge and practices of surveyed women were in general deficient. Considering pregnancy is a period of particular interest for acquiring knowledge and good oral health practices, which are decisive for both the expectant mother and the child, our results highlight an urgent need to implement prenatal oral health care programs in this study population. (Rev Port Estomatol Med Dent Cir Maxilofac. 2021;62(4):229-236)

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Conhecimentos e práticas relacionadas à saúde bucal em uma coorte de gestantes portuguesas

R E S U M O

Palavras-chave:

Cárie dentária
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de saúde oral
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Saúde oral
Odontopediatria
Periodontite
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Medicina dentária preventiva

Objetivos: Avaliar os conhecimentos e atitudes relativos à saúde oral na gravidez e na infância de uma amostra de grávidas de Coimbra, Portugal.

Métodos: Um questionário auto-aplicável foi administrado a uma amostra aleatória de grávidas em seguimento pré-natal em duas instituições de saúde públicas de Coimbra. Colheram-se dados sociodemográficos e referentes aos conhecimentos e práticas de saúde oral na gravidez e relativos ao bebé. Todos os requisitos éticos foram cumpridos. Procedeu-se a análise estatística descritiva e inferencial dos resultados. Verificou-se a independência das variáveis através do teste de qui-quadrado para um intervalo de confiança de 95%.

Resultados: A amostra incluiu 120 grávidas. Apesar de 68.9% das participantes ter revelado realizar escovagem bi-diária, 36.4% não usava fio dentário, verificando-se uma associação estatisticamente significativa deste hábito com a idade ($p=0.004$). Metade das inquiridas não visitou o médico dentista antes da gravidez e 59.2% considerava que a gravidez era potencialmente danosa para a saúde oral. Foram evidenciadas algumas lacunas no conhecimento relativamente às possíveis consequências de gengivite ou periodontite no desfecho da gravidez e acerca da importância da dieta para a saúde oral. Destacou-se também falta de informação no que respeita à cárie precoce de infância e à sua prevenção.

Conclusões: Em geral, as grávidas apresentaram conhecimentos e comportamentos de saúde oral insuficientes. Atendendo a que a gravidez constitui uma fase de particular interesse para a aquisição de conhecimentos e modificações comportamentais decisivos para a gestante e bebé, os presentes resultados suportam a necessidade de implementar programas de saúde oral pré-natal nesta população. (Rev Port Estomatol Med Dent Cir Maxilofac. 2021;62(4):229-236)

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Introduction

During pregnancy, a woman experiences oral and systemic changes, including behavioral, organic, and physiological alterations at various levels (e.g., endocrine, cardiovascular, respiratory, immunological, and neurological).¹⁻³ Some of these changes can lead to a greater susceptibility to specific oral pathologies, both in terms of soft and hard tissues.⁴⁻⁶ However, inadequate attention to oral health during pregnancy is commonly reported. Poor attention to oral health often leaves pregnant women susceptible to oral problems, such as pain, and increased levels of anxiety largely related to adverse pregnancy outcomes.^{2,7-9} Moreover, cumulative evidence has associated periodontal diseases in pregnant women with adverse pregnancy outcomes, including preeclampsia, gestational diabetes, preterm birth, and low birth weight.¹⁰⁻¹³ Research has further shown that the mother's oral condition and behaviors significantly influence the offspring's oral health outcomes, particularly the risk of experiencing early childhood caries (ECC).^{10,15-16}

Considering the inherent oral implications of pregnancy and the potential systemic consequences, timely monitoring and early intervention are extremely important. Therefore, monitoring oral health in pregnant women should be an integral part of the approach to their general healthcare.^{4,5,7,17-19} During the prenatal period, pregnant women show greater interest and receptivity in acquiring information and changing

their health habits and practices.^{4,5} Oral health education covering the prevention of oral diseases and demonstrating correct practices can then be provided. In addition, periodic consultations should be encouraged, as they bring important benefits for both pregnant women and their children.^{4,16,18,20,21}

Previous studies have found evidence of knowledge gaps and misconceptions among expectant mothers concerning: oral hygiene habits, the incidence of various oral pathologies, dental treatment, and poor oral health and its impact on the course of pregnancy and ECC.^{17,18,21-27} Multiple barriers to accessing oral healthcare during pregnancy have also been identified in several countries.^{8,9} To our knowledge, available data among pregnant women in Portugal is limited, as the few published studies involved small sample sizes and did not fully record the participants' knowledge of the impact of maternal oral health and behavior on children's oral health.^{28,29} Accordingly, the present study aims to assess the effect of maternal knowledge and practices on prenatal and infant oral health, with a survey of pregnant women followed in two Portuguese public health institutions.

Material and methods

This cross-sectional survey was performed using a convenience sample of pregnant women attending pre-scheduled

consultations for routine prenatal follow-up at a public maternity practice and a family health facility in Coimbra, Central Portugal. A total of 120 pregnant women were eligible to enroll in the study: 82 from the public maternity system, 19 from the family health facility, and 19 from individual contacts of the researchers. All women agreed to participate in this study. Data collection occurred over two consecutive months on randomly selected days.

The research fully complied with the ethical requirements of the 1964 Helsinki declaration and its later amendments. Required authorizations were obtained from both institutions prior to commencing the study. After giving written informed consent, each participant was asked to complete a self-reported questionnaire. Exclusion criteria included non-Portuguese speakers and unwillingness to participate. The questionnaire, based on previously published surveys,^{22,23,25} consisted of 29 closed-answer questions covering sociodemographic information, oral health knowledge and practices in pregnancy, and the pregnant woman's knowledge of oral health in children.

The results of the questionnaires were entered into Microsoft Excel® 2011 for subsequent statistical treatment using IBM SPSS Statistics 21. A descriptive analysis was performed, and the independence of the variables was checked with the chi-square test (χ^2) under a 95% confidence interval ($p < 0.05$).

Results

The sociodemographic profile of the sample is shown in Table 1. Approximately half of the respondents (52.5%) were aged between 31 and 35 years old, 71.7% had attended higher education, 64.0% were married, and 71.7% lived in urban areas (Table 1). This was the first pregnancy of most women, and 52.5% were in the last trimester of pregnancy (Table 1).

Concerning attitudes and behaviors of pregnant women regarding their oral health, 68.9% reported brushing twice a day, and 36.4% said they did not use dental floss as an additional measure (Table 2). As a group, pregnant women below 25 years stood out due to their low use of dental floss, with a statistically significant association ($p = 0.004$; $\chi^2 = 14.329$) between using dental floss and age (Table 2).

When asked about the frequency of dental appointments and prior history of dental caries, 43.2% of respondents confirmed they regularly attended annual consultations, and most (87.3%) said they had previously had caries lesions treated (Table 2). About 60.8% of the respondents rated their current oral health status as "Good", while 31.7% rated it as "Acceptable" and 7.5% as "Excellent". However, only 49.2% of the pregnant women had undergone dental appointments before their current pregnancy (Table 2).

Regarding the oral health-related knowledge of pregnant women, most participants (83.3%) responded positively when asked about the possibility/need to undergo dental treatment during pregnancy (Table 3). Nonetheless, over half of the respondents (59.2%) agreed that pregnancy could be harmful to their oral health, with a statistically significant association to their age groups ($p = 0.010$; $\chi^2 = 17.165$) and level of education ($p = 0.037$; $\chi^2 = 15.965$) (Table 3).

When asked, "Do you think that caries is a communicable disease?", 69.2% of women gave a negative response and 20.8% did not have an opinion (Table 3). Similarly, 58.3% stated they were unaware that gingivitis or periodontitis could contribute to premature birth and low birth weight (Table 3).

Most pregnant women showed a lack of knowledge of the importance of diet in oral health, with 71.8% stating they did not know the importance of diet to their oral health. A statistically significant association was found between the response to this question and the frequency of regular dental appointments ($p = 0.035$; $\chi^2 = 14.328$) (Table 3).

Regarding ECC, 43.3% of participants reported they were unaware of the existence of this disease. A statistically significant association was found between this variable and both the level of education ($p = 0.034$; $\chi^2 = 14.283$) and the environment where they lived (rural/urban) ($p = 0.015$; $\chi^2 = 8.501$); the latter association was also found when considering only women in first pregnancies ($p = 0.027$; $\chi^2 = 7.340$) (Table 4). When asked about the relationship between caries and nocturnal breastfeeding, 37.5% of respondents stated they did not know whether they were related and 46.7% thought they were unrelated (Table 4).

Table 1. Sociodemographic characterization of the sample.

Variable	Frequency (n=120)	Percentage (%)
Age (years)		
≤ 25	9	7.5
26 – 30	24	20.0
31 – 35	63	52.5
> 35	24	20.0
Education		
None	0	0.0
Primary – 1 st Cycle ^a	1	0.8
Primary – 2 nd Cycle ^b	0	0.0
Lower Secondary ^c	2	1.7
Upper Secondary ^d	31	25.8
Higher Education ^e	86	71.7
Marital status		
Single	33	27.0
Married	77	64.0
Divorced	2	2.0
Civil partnership	7	6.0
"I prefer not to say"	1	1.0
Place of residence		
Rural	32	26.6
Urban	86	71.7
"I prefer not to say"	2	1.7
Number of children prior to this pregnancy		
0	88	73.3
≥ 1	32	26.7
Trimester of pregnancy		
1 st	14	11.7
2 nd	43	35.8
3 rd	63	52.5

^a Primary – 1st Cycle (up to 4 years of schooling)

^b Primary – 2nd Cycle (up to 6 years of schooling)

^c Lower Secondary (up to 9 years of schooling)

^d Upper Secondary (up to 12 years of schooling)

^e Higher Education (university level)

Table 2. Attitudes and practices of the pregnant woman regarding oral health.

Question	Total sample	Frequency % (n)				p-value*
		Sociodemographic variables				
		Age (years)				
		≤ 25	26 – 30	31 – 35	> 35	
How many times do you brush your teeth per day?						
1	6.7 (8)	11.1 (1)	12.5 (3)	4.8 (3)	4.3 (1)	0.410
2	68.9 (82)	66.7 (6)	75.0 (18)	71.4 (45)	56.5 (13)	
≥ 3	24.4 (29)	22.2 (2)	12.5 (3)	23.8 (15)	39.2 (9)	
Do you use dental floss?						
Yes	63.6 (75)	11.1 (1)	75.0 (18)	61.3 (38)	78.3 (18)	0.004*
No	36.4 (43)	88.9 (8)	25.0 (6)	38.7 (24)	21.7 (5)	
Approximately how often do you see your dentist?						
More than once a year	34.8 (41)	44.5 (4)	41.7 (10)	26.2 (16)	45.8 (11)	0.002*
Once a year	43.2 (51)	11.1 (1)	25.0 (6)	52.5 (32)	50.0 (12)	
When I have a problem	21.2 (25)	33.3 (3)	33.3 (8)	21.3 (13)	4.2 (1)	
I have never seen a dentist	0.8 (1)	11.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	
Have you had / do you have dental caries?						
Yes, treated	87.3 (103)	77.8 (7)	86.4 (19)	88.9 (56)	87.5 (21)	0.663
No	8.5 (10)	22.2 (2)	9.1 (2)	7.9 (5)	4.2 (1)	
Yes, untreated	4.2 (5)	0.0 (0)	4.5 (1)	3.2 (2)	8.3 (2)	
Did you visit the dentist before becoming pregnant?						
Yes	49.2 (58)	33.3 (3)	58.3 (14)	45.2 (28)	56.5 (13)	0.656
No	50.8 (60)	66.7 (6)	41.7 (10)	54.8 (34)	43.5 (10)	

* Chi-square test (χ^2) under a 95% confidence interval ($p < 0.05$)

The majority of participants (84.0%) considered that the appropriate time to start oral hygiene is before or as soon as the first teeth erupt (Table 4). However, only 35.9% of expectant mothers considered the first dental appointment should occur before or as soon as the child's first teeth erupt. Some participants stated the child's first dental visit should occur only when all primary teeth are visible (40.2%), when there is a problem (4.3%), or when the child has permanent teeth (3.4%) (Table 4). A statistically significant association was found between this variable and age ($p = 0.033$; $\chi^2 = 27.287$). Most respondents (90.0%) recognized the importance of treating injuries to primary teeth (Table 4).

Discussion

The present study aimed to assess the effect of maternal knowledge and practices on prenatal and infant oral health, with a survey of pregnant women followed in two Portuguese public health institutions.

From the results, most pregnant women reported tooth-brushing twice daily. Previous studies have reported a correlation between this practice and higher levels of education,^{7,23,25,30} and indeed, most of this study's sample reported having attended higher education (71.7%). However, 36.4% of participants said they did not floss, which is consistent with findings from a previous report among expectant women in Portugal.²⁹ Most notably for this study, those under 25 years old were more likely not to use floss, thus highlighting the importance of hygienic instruction and motivation.

Although only a minority reported never having gone to a dental consultation, half the respondents had not visited the dentist before becoming pregnant. The latter finding is, unfortunately, in line with previously reported practices.^{8,9,29} This negligence happens despite the known established effect of prenatal oral health care on preventing adverse birth outcomes and ECC onset.^{11,16} Nonetheless, most participants stated they would undergo dental treatment during pregnancy if needed. While these results may reveal that the women surveyed were aware that dental treatment during pregnancy was safe, another possible explanation is the misconception, supported by over half of the participants, that pregnancy can be potentially harmful to their oral health. This result is consistent with previous findings from another cohort followed in the same public maternity practice, where the persistence of myths about the effects of pregnancy on oral health was also reported, particularly an increased tendency for dental demineralization and tooth loss.²⁸

Additional knowledge gaps were identified, as more than half of the pregnant women were unaware that gingivitis or periodontitis could contribute to premature birth and low birth weight, corroborating the findings of previous international surveys.^{17,31} Insufficient knowledge regarding the importance of diet in oral health was found among most respondents, despite dietary factors being fundamental to the etiology of multiple oral pathologies, both for pregnant women and children.^{21,32,33}

Lamentably, it was evident that a high proportion of the cohort was not familiar with ECC. Similar to earlier reports, most participants in this study also said that caries was not commu-

Table 3. Knowledge of the pregnant woman regarding oral health.

Question	Total sample	Frequency % (n)									
		Sociodemographic variables									
		Age (years)				p-value*	Education				p-value*
≤ 25	26 – 30	31 – 35	> 35	Group I ^a	Group II ^b		Group III ^c	Group IV ^d			
Would you consider dental treatment during pregnancy, if necessary?											
Yes	83.3 (100)	55.6 (5)	79.3 (19)	85.8 (54)	91.7 (22)	0.218	100.0 (1)	50.0 (1)	83.8 (26)	83.7 (72)	0.312
No	10.9 (13)	33.3 (3)	12.5 (3)	7.9 (5)	8.3 (2)		0.0 (0)	0.0 (0)	9.7 (3)	11.6 (10)	
Don't know	5.8 (7)	11.1 (1)	8.2 (2)	6.3 (4)	0.0 (0)		0.0 (0)	50.0 (1)	6.5 (2)	4.7 (4)	
Do you believe that pregnancy can be harmful to your oral health?											
Yes	59.2 (71)	33.3 (3)	62.5 (15)	58.7 (37)	66.7 (16)	0.010*	100.0 (1)	0.0 (0)	41.9 (13)	66.3 (57)	0.037*
No	32.5 (39)	22.2 (2)	33.3 (8)	34.9 (22)	29.2 (7)		0.0 (0)	50.0 (1)	38.7 (12)	30.2 (26)	
Don't know	8.3 (10)	44.4 (4)	4.2 (1)	6.3 (4)	4.2 (1)		0.0 (0)	50.0 (1)	19.4 (6)	3.5 (3)	
Do you think that caries is a communicable disease?											
Yes	10.0 (12)	11.2 (1)	12.5 (3)	7.9 (5)	12.5 (3)	0.211	0.0 (0)	0.0 (0)	12.9 (4)	9.3 (8)	0.833
No	69.2 (83)	44.4 (4)	62.5 (15)	79.4 (50)	58.3 (14)		100.0 (1)	50.0 (1)	71.0 (22)	68.6 (59)	
Don't know	20.8 (25)	44.4 (4)	25.0 (6)	12.7 (8)	29.2 (7)		0.0 (0)	50.0 (1)	16.1 (5)	22.1 (19)	
Are you aware that gum disease can contribute to prematurity and low birth weight?											
Yes	16.7 (20)	11.2 (1)	25.0 (6)	14.3 (9)	16.7 (4)	0.055	0.0 (0)	0.0 (0)	16.1 (5)	17.4 (15)	0.140
No	58.3 (70)	44.4 (4)	58.3 (14)	68.4 (43)	37.5 (9)		0.0 (0)	0.0 (0)	58.1 (18)	60.5 (52)	
Don't know	25.0 (30)	44.4 (4)	16.7 (4)	17.5 (11)	45.8 (11)		100.0 (1)	100.0 (2)	25.8 (8)	22.1 (19)	

Question	Total sample	Frequency % (n)				p-value*
		Other variables				
		> 1 / year	Annually	When I have a problem	Never	
How important is your diet to your oral health?						
Not very important	2.6 (3)	0.0 (0)	3.9 (2)	4.2 (1)	0.0 (0)	0.035*
Somewhat important	25.6 (30)	12.2 (5)	25.5 (13)	45.8 (11)	100.0 (1)	
Don't know	71.8 (84)	87.8 (36)	70.6 (36)	50.0 (12)	0.0 (0)	

* Chi-square test (χ^2) under a 95% confidence interval ($p < 0.05$)

^a Group I: Primary – 1st Cycle (up to 4 years of schooling)

^b Group II: Lower Secondary (up to 9 years of schooling)

^c Group III: Upper Secondary (up to 12 years of schooling)

^d Group IV: Higher Education (university level)

nicable or did not know whether it was. This finding possibly reveals an unawareness that early acquisition of Mutans Streptococci is a key risk factor for developing ECC.^{14-16,29,34,35} The fact that mother-to-child (or caregiver-to-child) transmission constitutes the major pathway for Mutans Streptococci initial acquisition underlines the importance of education and prenatal oral health care in reducing maternal carriage of Mutans Streptococci and limiting saliva-sharing activities, as highlighted by recent studies.^{14-16,33}

A substantial number of pregnant women stated that nocturnal breastfeeding was not associated with the etiology of ECC. In fact, although multiple studies have explored the potential impact of prolonged and *ad libitum* breastfeeding on ECC's development, recent evidence from a systematic review suggests that breastfeeding does not increase ECC risk.^{21,36}

Regarding perinatal oral health care, most pregnant women recognized the importance of treating primary teeth and stated their intention to establish toothbrushing habits before or as soon as the first teeth erupted, a finding in line with those of Ferreira et al.²⁹ Nonetheless, while one-third of the

sample intended that their child first visited the dentist as soon as teeth erupted, a large proportion of participants reported an intention to visit the dentist only when all of the child's primary teeth were present. Another concerning finding is that a non-negligible share of participants stated they did not know when the first dental appointment should occur. Such lack of knowledge reduces the likelihood of establishing a dental home during the child's first year of life, a crucial recommendation for establishing oral health preventive and/or curative strategies.^{4,33,37,38}

This research presented some limitations. Firstly, there are known possible drawbacks of questionnaire-based studies: nonresponses, misconceptions, and socially desirable answers. Another limitation is related to the nature of the cohort, particularly the asymmetric distribution of sociodemographic characteristics. Despite recognizing that the present sample cannot be considered representative of all pregnant women in Portugal, to the best of our knowledge, this study involved a considerably larger sample than the few published surveys among Portuguese cohorts.^{28,29}

Table 4. Knowledge of the pregnant woman regarding the child's oral health.

Question	Frequency % (n)											
	Total sample	Sociodemographic variables									1 st Pregnancy – Area of residence ^f	
		Education					Area of residence ^e					
		Group I ^a	Group II ^b	Group III ^c	Group IV ^d	p-value*	Rural	Urban	p-value*	Rural		Urban
Do you know what early childhood caries is?												
Yes	45.8 (55)	0.0 (0)	0.0 (0)	45.2 (14)	47.7 (41)		65.6 (21)	38.5 (33)		68.4 (13)	35.3 (24)	
No	43.3 (52)	0.0 (0)	50.0 (1)	38.7 (12)	45.3 (39)	0.034*	21.9 (7)	51.1 (44)	0.015*	21.1 (4)	54.4 (37)	0.027*
Don't know	10.9 (13)	100.0 (1)	50.0 (1)	16.1 (5)	7.0 (6)		12.5 (4)	10.4 (9)		10.5 (2)	10.3 (7)	
Do you think that nocturnal breastfeeding may be associated with dental caries in children?												
Yes	15.8 (19)	0.0 (0)	0.0 (0)	19.4 (6)	15.1 (13)		18,7 (6)	15.1 (13)		15.9 (3)	11.8 (8)	
No	46.7 (56)	0.0 (0)	50.0 (1)	48.4 (15)	46.5 (40)	0.919	43.8 (14)	47.7 (41)	0.889	47.3 (9)	50.0 (34)	0.932
Don't know	37.5 (45)	100.0 (1)	50.0 (1)	32.2 (10)	38.4 (33)		37.5 (12)	37.2 (32)		36.8 (7)	38.2 (26)	
When do you think you should start the child's oral hygiene?												
Before the first teeth erupt	26.9 (32)	0.0 (0)	0.0 (0)	19.4 (6)	30.6 (26)		21.9 (7)	28.2 (24)		26.3 (5)	26.9 (18)	
As soon as the first teeth erupt	57.1 (68)	0.0 (0)	50.0 (1)	54.8 (17)	58.8 (50)	0.074	53.1 (17)	58.8 (50)	0.496	36.8 (7)	61.1 (41)	0.062
Only when all primary teeth are visible	10.1 (12)	100.0 (1)	50.0 (1)	19.4 (6)	4.7 (4)		15.6 (5)	8.3 (7)		21.1 (4)	6.0 (4)	
Don't know	5.9 (7)	0.0 (0)	0.0 (0)	6.4 (2)	5.9 (5)		9.4 (3)	4.7 (4)		15.8 (3)	6.0 (4)	
Question	Frequency % (n)											
	Total sample	Sociodemographic variables									p-value*	
		Age (years)										
		≤ 25	26 – 30	31 – 35	> 35							
When do you think it is appropriate for your child to have his/her first dental visit?												
Before the first teeth erupt	1.7 (2)	0.0 (0)	0.0 (0)	0.0 (0)	3.2 (2)	0.0 (0)						
As soon as the first teeth erupt	34.2 (40)	11.1 (1)	25.0 (6)	41.9 (26)	31.8 (7)							
Only when all primary teeth are visible	40.2 (47)	55.6 (5)	58.4 (14)	32.3 (20)	36.4 (8)							
Only when the child starts to have permanent teeth	3.4 (4)	11.1 (1)	0.0 (0)	4.8 (3)	0.0 (0)						0.033*	
When there is a problem	4.3 (5)	22.2 (2)	8.3 (2)	1.6 (1)	0.0 (0)							
Don't know	16.2 (19)	0.0 (0)	8.3 (2)	16.2 (10)	31.8 (7)							
Do you consider it important to treat your child's primary teeth if they develop cavities?												
Yes	90.0 (108)	77.8 (7)	87.5 (21)	92.1 (58)								
Don't know	10.0 (12)	22.2 (2)	12.5 (3)	7.9 (5)							0.621	

* Chi-square test (χ^2) under a 95% confidence interval ($p < 0.05$)

^a Group I: Primary – 1st Cycle (up to 4 years of schooling)

^b Group II: Lower Secondary (up to 9 years of schooling)

^c Group III: Upper Secondary (up to 12 years of schooling)

^d Group IV: Higher Education (university level)

^e n = 118. Two participants did not answer this question.

^f n = 88

Even though our results generally reflect those found in the international literature,^{7,17,19,21-27,30,39} such a comprehensive characterization of oral health-related knowledge and the practices of expectant mothers has not been reported for Portuguese cohorts. This work enabled the identification of important gaps and illustrated the urgent need for prenatal education and promotion of oral health in Portugal.

Conclusions

Most pregnant women taking part in this study believed pregnancy could be harmful to their oral condition, and a significant proportion did not seek prenatal oral health care. Surveyed women also lacked knowledge of the potential impact of their periodontal status on gestation and were unaware of

the existence of ECC and the need for its prevention, particularly regarding concepts such as vertical transmission and the establishment of a dental home. This study population showed a clear demand for the implementation of educational programs aimed at increasing awareness and understanding on these matters.

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Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed their work center protocols on access to patient data and for its publication.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Conflict of interest

The authors have no conflicts of interest to declare.

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