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Research Article

Knowledge, Attitudes and Practices of Pregnant Women on Oral Health in the University Hospitals of Ouagadougou, Burkina Faso

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Abstract

Knowledge of the relationship between pregnancy and oral health is a public health issue. The aim of this study was to assess the knowledge, attitudes and practices of pregnant women regarding oral health in the University Hospital Centers (UHC) of Ouagadougou in 2023. This was a descriptive cross-sectional study from July to September 2023. Data were collected prospectively, and knowledge, attitude and practice scores were generated. A total of 400 pregnant women were included. The [25-34] age group was the most represented at 54%, and 56.3% of women were in their 3rd trimester of pregnancy. The majority had a secondary level school and didn't have a treating dentist. More than half (51.2%) of the respondents had poor overall knowledge of the relationship between oral health and pregnancy, 76.3% had poor attitudes and 79.5% poor practices, resulting in a poor overall KAP level for their oral health (60.5%). There was a significant variation in KAP level according to level of education (p= 0.015) and according to the information received on oral health and its implications for pregnancy (p = 0.028). Pregnant women's knowledge, attitudes and practices regarding their oral health are inadequate. Most women were unaware of the potential consequences of oral health neglect on pregnancy and their unborn child. Efforts must be made to educate them about oral health, with a focus on prevention.

Keywords

Oral Health, Pregnancy, Knowledge, Attitudes, Practices, KAP

1. Introduction

Various physiological changes occur in the body of a pregnant woman, whether general or related to the oral cavity [1]. The oral cavity may undergo transient or irreversible changes, as well as modifications considered pathological [2]. During pregnancy, the incidence of oral diseases in general and periodontal diseases in particular is higher [3].

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Pregnancy and oral health are linked by complex biological, behavioral and social relationships. Pregnancy can have repercussions on oral health, and conversely, certain oral diseases can have adverse effects on the outcome of pregnancy [4].

Good oral health and the control of oral diseases protect a woman's health and quality of life before and during pregnancy [5]. It is now recognized that pregnancy is a period in a woman's life when the need for oral health care and prevention is heightened [6]. It is an ideal time to give the mother all the advice she needs before the birth of her baby [7]. Despite the increased need for care and prevention during pregnancy, recent studies have shown that the use of oral health care by pregnant women is only equivalent to, or even lower than, that of non-pregnant women of the same age [8, 9].

Perceived oral health is an essential element in the use of oral health care. Pregnancy is a transitory physiological state, during which the perception of oral health problems, whether pregnancy-related or not, will be modulated by a modified personal, family and social environment.

Knowledge of the relationship between pregnancy and oral health is therefore a public health issue. While there is a great deal of data on oral diseases in pregnant women in certain African countries [10-12] in Burkina Faso, epidemiological data on women's knowledge, attitudes and practices regarding oral health during pregnancy have not yet been described in the literature. It therefore seems important to explore this topic in order to obtain factual data that can justify educational and lifestyle interventions to improve the oral health of pregnant women. The objectives of this study were to evaluate the knowledge, attitudes and practices of pregnant women on oral health during pregnancy in the University Hospital Centers (UHC) of Ouagadougou in 2023.

2. Methods

2.1. Setting, Type and Period of Study

The study was carried out in three University Hospitals (UHC) in the city of Ouagadougou: Yalgado OUEDRAOGO UHC (UHC-YO), UHC of Bogodogo (UHC-B) and UHC of Tengandogo (UHC-T).

This was a descriptive cross-sectional study from July 1er to September 15 2023.

2.2. Study Population

All pregnant women attending the gynecology-obstetrics departments of Ouagadougou's teaching hospitals were included. Pregnant women at least 18 years of age, whose pregnancy had been confirmed by an immunological pregnancy test (IPT), who were attending an outpatient consultation at one of the selected centers, and who had given their consent, were included.

2.3. Sample Size and Sampling

The sample size was calculated with open Epi Version 3.01 software according to the SCHAWART formula, using a confidence level of 95%, a standard deviation of 0.5 and a margin of error of 5%. The resulting sample size was:

$$n = 0.50x (1-0.50) x (1.962/0.052) =384$$

The total sample size was 400 women, distributed among the three University Hospitals of Ouagadougou.

The number of participants to be included per UHC was calculated in proportion to the attendance rate of each UHC (Table 1). Participants were selected using the simple random selection technique, based on the daily consultation lists in each hospital, until the required number of people was reached.

Table 1. *Sampling technique.*

Structure	Number of consultations 2021*	Weight of UHC	Number of participants
UHC Yalgado Ouédraogo	2069	53,6%	214
UHC Bogodogo	1530	39.7%	159
UHC Tengandogo	258	6.7%	27
Total	3857	100%	400

* Source: Statistical yearbook 2021 of the Ministry of Health and Public Hygiene

2.4. Data Collection Techniques and Tools

The questionnaire designed for data collection had two sections:

The first section consisted of a total of 08 questions, all relating to socio-demographic and clinical data.

The second section of the questionnaire focused on pregnant women's knowledge, attitudes and practices regarding

their oral health. For better understanding, we have divided this section into two parts:

Part I: Oral health knowledge during pregnancy. It consisted of 09 questions.

Second part: oral health attitudes and practices during pregnancy; divided into 12 questions, 07 for attitudes and 05 for practices.

Data were collected using a tablet or smartphone, through direct interviews with pregnant women attending outpatient clinics in the selected departments. At first contact, all pregnant women who agreed to take part in the study were given an explanation of the aim, procedure, advantages and disadvantages of participating. An informed consent form was submitted to the volunteers for reading, after which each was free to sign.

We collected the data after pre-testing the questionnaire. This pre-test was carried out on 10 pregnant women. At the end of the pre-test, we reformulated any ambiguous questions or concepts, and improved our dexterity in dealing with pregnant women. This pre-test enabled us to validate our tools and define an average time per respondent before official collection.

2.5. Data Processing and Analysis

The analysis consisted of a detailed description of the variables collected. Means and standard deviations were calculated for normally distributed quantitative variables, and a semi-interquartile range (IQR) for those with a non-normal distribution, with precision on the range of values. Frequencies and counts were calculated for all categorical variables of interest.

Partial scores were generated for knowledge (0 to 9), attitude (0 to 7) and practice (0 to 5). Thus, for each answer (considered as such on the basis of the majority of literature data we consulted), we assigned a score equal to 1 for a correct answer and 0 for a false answer or abstention. The overall KAP score was calculated by adding up the partial scores and used as an indication of the overall KAP level.

All respondents were classified according to whether they were above the median calculated for each score in good knowledge / attitude / practice or below in poor knowledge / attitude / practice.

The chi-square test and Fisher's exact test were used for comparisons between the two groups. The threshold of statistical significance was set at $p< 0.05$.

2.6. Ethical and Deontological Aspects

This study has been authorized by the Health Research Ethics Committee (deliberation no. 2023-7-187 of June 05, 2023). Authorizations have been obtained from the heads of the selected university hospitals.

Written consent was required from each pregnant woman prior to participation in the study. Participant anonymity and data confidentiality were respected.

Participants were offered pregnancy-related oral hygiene advice and reassured that data was collected anonymously.

3. Results

3.1. Socio-Demographic Characteristics

A total of 400 pregnant women were interviewed, including 214 at UHC-YO, 159 at UHC-B and 27 at UHC-T.

The age range (25-34) was 54.0%, and 56.3% of women were in their 3rd trimester of pregnancy. Married women accounted for 91.5%, and 48% of women had at least one child. Table 2 shows the socio-demographic characteristics of our study population.

Table 2. *Socio-demographic characteristics.*

Variables/ modalities	Number (n=400)	Percentage (%)
Age		
[18-24]	105	26,3
[25-34]	216	54
[35-44]	78	19,5
[45-51]	1	0,3
Parity		
0	102	25,5
1	106	26,5
More than one	192	48
Gestational age (WA)		

Variables/ modalities	Number (n=400)	Percentage (%)
<12	39	9,8
[12-28]	136	34
≥28	225	56,3
Marital status		
Single	31	7,8
Divorced/separated	3	0,8
Married / common-law	366	91,5
Study level		
Out of school	102	25,5
Primary	60	15
Secondary	170	42,5
Superior	68	17
Socio-professional category		
Tradeswoman/independent	169	42,3
Student	45	11,3
Housewife	125	31,3
Employee	61	15,3
Do you have a treating dentist?		
No	389	97,3
Yes	11	2,8
Since you've been pregnant, has anyone talked to you about oral health and its implications for pregnancy?		
No	369	92,3
Yes	31	7,8
Who gave you the information?		
Dental surgeon	1	3,2
TV show	2	6,5
Waiter	1	3,2
Gynecologist	5	16,1
Doctor	3	9,7
Midwife	19	61,3

3.2. Knowledge of the Relationship Between Oral Health and Pregnancy

Overall knowledge of the relationship between oral health and pregnancy was poor for 51.2% of respondents.

Table 3. *Knowledge of the relationship between oral health and pregnancy.*

Variables/modalities	Number (n=400)	Percentage (%)
Does pregnancy have an impact on the oral environment?		

Variables/modalities	Number (n=400)	Percentage (%)
Poor knowledge (no)	259	64,8
Good knowledge (yes)	141	35,3
Can pregnancy contribute to tooth gnawing (dental erosion)?		
Poor knowledge (no)	322	80,5
Good knowledge (yes)	78	19,5
Do pregnancy hormones provoke to gum bleeding?		
Poor knowledge (yes)	277	69,3
Good knowledge (no)	123	30,8
Can hormonal changes increase the risk of tooth decay during pregnancy?		
Poor knowledge (no)	319	79,8
Good knowledge (yes)	81	20,3
Can oral health influence pregnancy?		
Poor knowledge (no)	219	54,8
Good knowledge (yes)	181	45,3
Can poor oral hygiene have an impact on the course of pregnancy and lead to adverse outcomes (pre-eclampsia, low birth weight, premature delivery, stillbirth)?		
Poor knowledge (no)	275	68,8
Good knowledge (yes)	125	31,3
Is it possible to consult your dentist throughout your pregnancy?		
Poor knowledge (no)	99	24,8
Good knowledge (yes)	301	75,3
Is it possible to have dental extractions while pregnant?		
Poor knowledge (no)	315	78,8
Good knowledge (yes)	85	21,3
Global knowledge		
Poor knowledge	205	51,2
Good knowledge	195	48,8

3.3. Oral Health Attitudes During Pregnancy

Seventy-six-point three percent (76.3%) of participants had poor attitudes to oral health and pregnancy.

Table 4. *Attitudes about the relationship between oral health and pregnancy.*

Variables/modalities	Number (n=400)	Percentage (%)
Do you think you should consult a doctor if you feel pain in your mouth?		
Bad attitude (no)	9	2,3
Good attitude (yes)	391	97,8
Do you think you should brush your teeth morning and night for good oral hygiene?		
Bad attitude (no)	4	1

Variables/modalities	Number (n=400)	Percentage (%)
Good attitude (yes)	396	99
Do you think that, in addition to a toothbrush, you need to use other materials for good oral hygiene?		
Bad attitude (no)	168	42
Good attitude (yes)	232	58
Do you think it's necessary to change your oral hygiene habits during pregnancy?		
Bad attitude (no)	182	45,5
Good attitude (yes)	218	54,5
Do you think it's necessary to change your eating habits during pregnancy?		
Bad attitude (no)	80	20
Good attitude (yes)	320	80
Do you think it's normal to lose a tooth during pregnancy?		
Bad attitude (yes)	364	91
Good attitude (no)	36	9
Do you think it's necessary to have a regular dentist during pregnancy?		
Bad attitude (no)	185	46,3
Good attitude (yes)	215	53,8
Global attitudes		
Bad attitude	305	76,6
A good attitude	95	23,8

3.4. Oral Health Practices During Pregnancy

The percentage of poor oral health practices is 79.5%.

Table 5. *Oral health practices during pregnancy.*

Variables/modalities	Number (n=400)	Percentage (%)
What do you do if you feel pain in your mouth?		
Bad practice (other)	215	53,8
Good practice (consult dentist)	185	46,3
How often do you brush your teeth?		
Bad practice (other)	55	13,8
Good practice (at least twice)	345	86,3
In addition to your toothbrush, do you use any other equipment to clean your teeth?		
Bad practice (no)	301	75,3
Good practice (yes)	99	24,8
Have you changed your oral hygiene habits?		
Bad practice (no)	328	82
Good practice (yes)	72	18

Variables/modalities	Number (n=400)	Percentage (%)
Have you or will you consult a dentist during pregnancy?		
Bad practice (no)	385	96,3
Good practice (yes)	15	3,8
Global practices		
Bad practice	318	79,5
Good practice	82	20,5

Scores for knowledge, attitudes, practices and overall level Knowledge Attitudes Practices (KAP)

Figure 1 shows the distribution of different KAP scores. Each box represents the first quartile, the second quartile and the third quartile, from bottom to top.

Of the 400 women who took part in the survey, the knowledge score for pregnant women was 2 points out of a total of 8. The extremes were 0 and 8, and 50.0% of women surveyed had a score between 1 and 4.

For attitudes, the median score was 5 points out of a total of 7, with extremes ranging from 1 to 7. Half (50.0%) of respondents scored between 4 and 5.

For practices, the extremes were 0 and 5. The median was 2 points out of a total of 5, and 50% scored between 1 and 2.

The median KAP score was 9 points out of a total of 17, and the extrema were 2 and 17; 50.0% of participants had a score between 7 and 11.

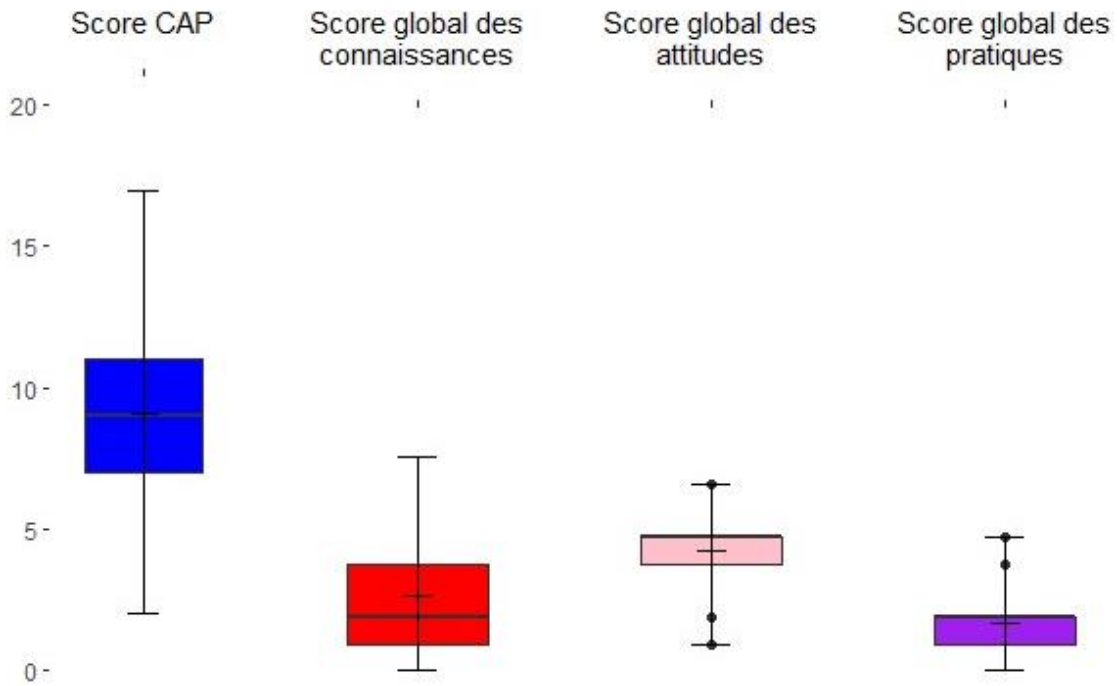

Figure 1. *Distribution of Knowledge, Attitudes, Practices and Knowledge Attitudes Practice (KAP) scores.*

The majority of pregnant women had a poor overall KAP level for oral health (60.5%).

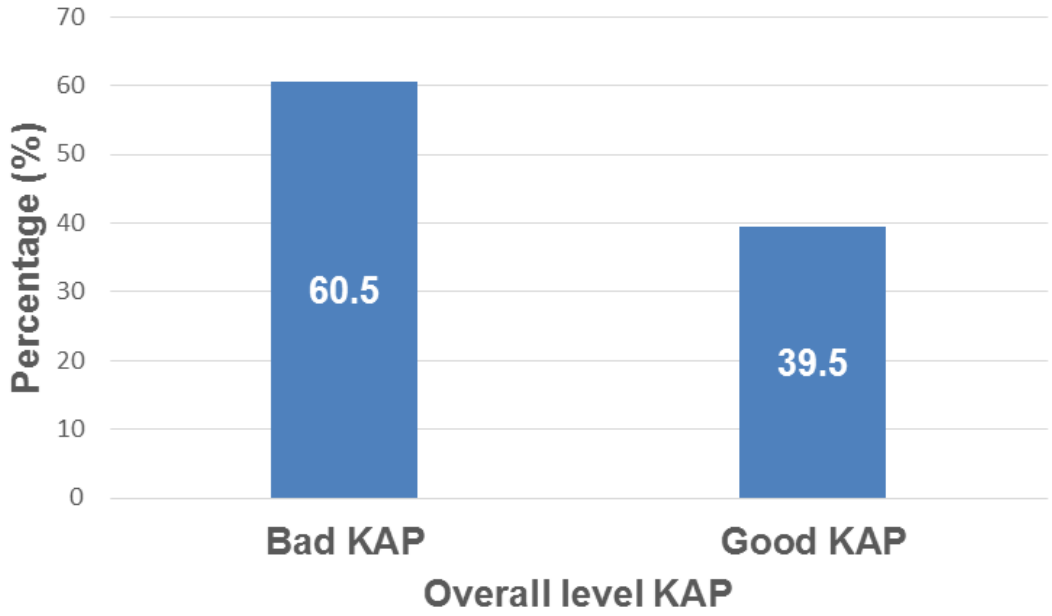

Figure 2. *Overall level of Knowledge Attitudes Practices (KAP).*

Overall Level of Knowledge Attitudes Practices (KAP) and Socio-Demographic Characteristics.

Table 6 shows the distribution of the overall KAP level according to characteristics. There was a significant variation in KAP level according to level of education (p = 0.015) and according to the information received on oral health and its implications for pregnancy (p = 0.028).

Table 6. *Overall level of Knowledge Attitudes Practices (KAP) according to socio-demographic characteristics.*

Variables/modalities	**Overall level KAP**		**p-value**
	Poor KAP n= 400 (%)	**Good KAP n= 400 (%)**	
Age			
[18 à24]	71 (29,3)	34 (21,5)	
[25 à34]	130 (53,7)	86 (54,4)	0,129
[35 à44]	40 (16,5)	38 (24,1)	
[45 à51]	1 (0,4)	0 (0)	
Parity			
0	67 (27,7)	35 (22,2)	0,455
1	63 (26)	43 (27,2)	
Gestational age (SA)			
≤12	20 (8,3)	19 (12)	0,459
(12-24)	83 (34,3)	53 (33,5)	
≥24	139 (57,4)	86 (54,4)	
Marital status			
Single	21 (8,7)	10 (6,3)	0,672
Divorced/separated	2 (0,8)	1 (0,6)	
Married / common-law	219 (90,5)	147 (93)	

Variables/modalities	Overall level KAP		p-value
	Poor KAP n= 400 (%)	Good KAP n= 400 (%)	
Study level			
Out of school	69 (28,5)	33 (20,9)	
Primary	31 (12,8)	29 (18,4)	0,015
Secondary	110 (45,5)	60 (38,0)	
Superior	32 (13,2)	36 (22,8)	
Socio-professional category			
Tradeswoman/independent	95 (39,2)	74 (46,8)	
Student	23 (9,5)	22 (13,9)	0,114
Housewife	86 (35,5)	39 (24,7)	
Employee	38 (15,7)	23 (14,6)	
Do you have a primary care dentist?			
No	237 (97,9)	152 (96,2)	0,301
Yes	5 (2,1)	6 (3,8)	
Since you've been pregnant, has anyone talked to you about oral health and its implications for pregnancy?			
No	229 (94,6)	140 (88,6)	0,028
Yes	13 (5,4)	18 (11,4)	

4. Discussion

This study highlighted the knowledge, attitudes and practices of pregnant women in relation to oral health and a healthy pregnancy.

4.1. Knowledge of the Relationship Between Oral Health and Pregnancy

More than half of pregnant women had poor overall knowledge of the relationship between oral health and pregnancy (51.2%). They had poor knowledge of common oral conditions during pregnancy, notably dental erosion (80.5%), periodontal disease (69.3%) and tooth decay (79.8%). Our results are considerably lower than those of Ibrahim et *al.* in Sudan, who found that 88% of pregnant women had poor knowledge of the relationship between oral health and pregnancy [13]. Also, Gupta et *al.* found that only 18.2% of women in their study were aware of an association between oral health and pregnancy [14]. Amit et *al.* in India, also reported that 22% of women thought pregnancy predisposed to dental or gum problems [15]. In the study by Togoo et *al*, the majority of pregnant women were unaware of the development of gestational gingivitis, its causes, effects, treatment and preventive measures [16].

Increased hormone levels during pregnancy are a systemic factor that increases the host's susceptibilitý to develop periodontal disease in the presence of dental plaque and thus pathogenic bacteria [17]. Periodontal disease, including gingivitis and periodontitis, has been associated with pregnancy [18]. Hormonal fluctuations during pregnancy increase blood flow to the gum tissue, leading to secondary inflammation of the gum tissue due to the presence of plaque. The inflammatory response to bacterial plaque can be exacerbated, leading to gingival edema and spontaneous bleeding [19]. Pregnancy affects the periodontium through gingival inflammation, the most common manifestation, with prevalence ranging from 30% to 100% [20]. Pregnancy in itself does not cause gingivitis, but aggravates it by increasing capillary permeability, which is a predisposing factor due to increased circulating estrogen levels. In the absence of appropriate and immediate care, gingivitis in pregnancy can progress to periodontitis, a multifactorial chronic infectious disease inducing an immuno-inflammatory response that can lead to tooth mobility and ultimately to the loss of the dental organ itself [21].

Periodontal disease is classically synonymous with the presence of periodontal pockets corresponding to the distance between the height of the free edge of the gingiva and the epithelial attachment [22]. There is a consensus that probing depth increases as pregnancy progresses. In most cases, however, these alterations are reversible by the end of preg-

nancy or 45 days after delivery [18].

Pregnant women are also predisposed to the development of dental caries. Indeed, there is an increase in appetite in pregnant women with frequent consumption of cariogenic foods [23]. They tend to eat smaller but more numerous meals, to avoid nausea, vomiting and hypoglycemia. They may also consume large quantities of snacks and sugary drinks to satisfy their pregnancy cravings. Carbohydrates metabolized by cariogenic bacteria release acids that lead to enamel demineralization. Hormonal influences also cause dry mouth, disrupting the buffering effect of saliva. Routine oral hygiene practices become irregular. Morning vomiting and reflux increase the incidence of caries. [3]. If left untreated, they can progress to deeper damage to the dental pulp known as pulpitis, commonly referred to as "toothache". If left untreated, pulpitis evolves spontaneously into necrosis and dental abscess. An untreated dental abscess (especially during pregnancy) is a public health issue, responsible for a more or less low-noise inflammatory syndrome (synthesis of inflammatory mediators) that can result in premature delivery through uterine stimulation by these mediators [24].

The etiology of dental erosion is multifactorial, and mainly linked to contemporary lifestyle changes. Unusual eating habits may develop during pregnancy under the influence of hormonal changes [25]. Vomiting, especially during the first trimester, can lead to additional erosion due to acid attack [26]. There is also an increase in reflux during pregnancy, responsible for erosive lesions [27].

In the present study, 54.8% of women stated that oral health could not influence pregnancy. Indeed, 68.8% were unaware of the obstetrical complications that oral health conditions could cause, including pre-eclampsia, prematurity, hypotonia and stillbirth. These results are superior to those of Julien et *al.* in Nigeria, who found that 39.3% of women thought that there were no obstetrical complications linked to oral health. [28].

However, the bidirectional relationship between pregnancy and oral health has long been established by numerous studies. Some studies suggest that periodontal infection is a modest risk factor for several adverse pregnancy outcomes [4]. With regard to the association between adverse pregnancy outcomes and periodontitis, it is important to note that at least 6 systematic reviews with meta-analyses have found a high positive association between preterm birth, low birth weight and pre-eclampsia with periodontitis [29]. Periodontal disease can be considered one of the risk factors for prematurity and low birth weight, as not only does the presence of the disease lead to an increase in inflammatory mediators, but the elimination of the disease reduces negative pregnancy outcomes [30]. Pre-eclampsia appears to be associated with periodontitis. In fact, a higher consensus (all prospective studies indicate a higher risk in women with periodontitis) could be established despite the usual significant heterogeneity [31].

Oral health is necessary for overall health [32]. That's why it's important to adopt good preventive measures such as screening and prenatal consultation and care.

The possibility of consulting a dental surgeon throughout pregnancy was unknown to 24.8% of respondents, and 78.8% felt that dental treatment, including tooth extraction, was impossible during pregnancy. Our results are similar to those of Catherine et *al*. who found 19.1% of women unaware of the possibility of consultation and 75% unaware of the impossibility of dental treatment during pregnancy. [32].

There is a great deal of information, myth and reality surrounding oral health care during pregnancy. There is no formal prohibition on oral health care for pregnant women; however, the practitioner may choose a particular procedure or medication (local anaesthetic, antibiotic) in relation to the patient's condition. [28]. Certain precautions need to be taken. These include: stress, the use of ionizing radiation, anesthesia, filling materials, drug prescriptions, the presence of concomitant pathologies, and the most appropriate time to perform dental treatment.

Stress and anxiety are minimized by establishing a good practitioner-patient relationship. Dialogue is essential to instill confidence in the mother-to-be. It will aim to explain our gestures and their harmlessness to the fetus [28]. Overall, the treatment of pregnant women should not differ from that of other patients. Only certain precautions need to be taken. For this, you need to contact your obstetrician to find out when is the right time to intervene. The first trimester should be reserved for clinical assessment. Any procedure other than an emergency will be postponed until the second trimester of pregnancy. During the third trimester, only emergency treatment is given.

4.2. Pregnant Women's Attitudes and Practices Regarding Oral Health and Pregnancy

The majority of respondents had poor overall attitudes to oral pathologies (76.3%).

At least twice-daily brushing was deemed necessary by 99% of participants, although 42% were unaware of the usefulness of other materials (in addition to the toothbrush) for good oral hygiene.

Similarly, 79.5% of participants had a poor level of practice. In fact, 53.8% did not go to the dentist in the event of mouth pain, and 96.3% did not include this consultation in their prenatal care. According to Julien et *al.*, 76.6% of the participants in their study felt they could skip a visit to the specialist. Although there is an oral health component in all prenatal care protocols, the uptake of care remains low, even when necessary. The lack of information on the subject, as well as the low availability of oral health care due to the under-equipment of public health centers and the high cost of such care in private centers in the city of Ouagadougou, could justify this practice.

According to Catherine et *al.* 47% of pregnant women were seen by a dentist. Interestingly, the reasons why they did not wish to see a dentist were the absence of dental symptoms (42.7%), lack of time (25%) or lack of information about the feasibility of dental treatment during pregnancy (14%) [32].

Nevertheless, 86.2% of respondents brushed at least twice a day. These recommendations are widely advocated by oral hygiene awareness campaigns and commercials. Julien et *al*. found that almost half (49.1%) of pregnant women did not brush twice a day [28] and Llena et *al*. found 20.1%. [33].

To maintain good oral health, it's recommended to brush your teeth twice a day using a suitable toothbrush. Indeed, infrequent tooth brushing is thought to be associated with severe forms of periodontal disease [34]. Tooth brushing should be combined with interdental cleaning once every 24 hours [35, 36]. The use of interdental bosses as a complement to brushing would reduce plaque and gingivitis more effectively than brushing alone [37]. Whatever the medical device used, qualitative mastery of brushing techniques is essential for optimum effectiveness. Patient education in good brushing practices is an essential factor. We also need to provide better education for our pregnant women, to make them more assiduous when it comes to their oral health.

4.3. Relationship Between Overall Level of Knowledge Attitudes Practices (KAP) and Socio-demographic Data

In this study, the overall KAP score was 60.5% poor. There was a significant difference between participants with good KAP and those with poor KAP, depending on level of education and information received about oral health and its implications for pregnancy.

In fact, better-educated women were more knowledgeable about oral health than less-educated or uneducated women. Communication measures need to be adapted for pregnant women.

Ibrahim et al in Sudan found a significant difference between women's level of education and their knowledge and practices [13]; as did Adeneyi et *al*. for knowledge, attitudes and practices [38]. Tang et *al*. found that the level of oral health PAC was mainly affected by education level ($p<0.05$), and the main source of oral health knowledge acquisition by pregnant women was the media, advice from medical staff and the experience of relatives and friends [39]. Adeyeni et *al*. also reported that the relationship between level of oral health knowledge and level of education ($p = 0.079$) was not statistically significant [38].

On the other hand, George et *al*. found that only 10% of women had received information about the importance of perinatal oral health; the main source of information being oral health promotion materials such as leaflets and brochures, rather than antenatal care providers. Indeed, less than half the women surveyed were aware of the potential adverse effects of poor oral health during pregnancy, which may explain why 20% of women did not consider oral health a priority [40].

In our context, most pregnant women would only present for consultation in the context of extreme pain, an emergency or a complication. Among women with a poor KAP score, 94.6% had not received any information about oral health and its implications for pregnancy. There is no real policy on oral health promotion and pregnancy. Also, the culture of prevention in the context of health in general is not present in our context, because, unlike the Western health system, there is no social security.

Pregnancy is a "teachable moment" when women are motivated to adopt healthy behavior. Women and families need to hear from a variety of sources about the importance and safety of dental care during pregnancy. In addition, obstetric providers could contribute by broaching the subject with their pregnant patients. Recent publications indicate that behavioral and educational interventions during pregnancy can improve oral health. These interventions are most effective if carried out not only at the beginning of pregnancy, but also throughout pregnancy [41, 42]. Also, various health promotion interventions should be carried out during pregnancy to motivate and educate pregnant women about the importance of good oral health.

Limits

This study has a number of limitations. It focused solely on pregnant women attending antenatal clinics in the gynecology departments of Ouagadougou's three university hospitals, which represent the highest referral level in the health pyramid. These are generally cases with particular clinical features. Nonetheless, the information obtained from our study could guide the appropriate interventions to be deployed in terms of oral health awareness and prevention campaigns for pregnant women.

5. Conclusion

The present study examined the relationship between pregnancy and oral health, revealing a lack of awareness and inadequate practices among pregnant women within the University Hospital Centers (UHC) of Ouagadougou. It showed that pregnant women's knowledge of oral health attitudes and practices was poor. Most women were unaware of the potential consequences of oral health neglect on pregnancy and their unborn child, underscoring the public health significance of this issue and the urgent need for educational interventions.

Our findings emphasize that pregnancy is a "teachable moment" when women are most motivated to adopt healthy behaviors. Yet, this opportunity is often missed due to the existing gaps in knowledge and practices. The data underscore the critical need for creative, consistent, comprehensive, and accessible communication strategies to promote oral health among women. These strategies should be designed to cater to various educational levels, ensuring inclusivity and effectiveness.

Reflecting on the implications of our study, future research should endeavor to identify the most effective methods to disseminate oral health information among pregnant women, examining the impact of these interventions on changing attitudes and practices. Additionally, exploring the role of

healthcare professionals in providing oral health education could offer insights into improving prenatal care protocols. This research paves the way for a broader investigation into preventive measures and educational programs tailored to the needs of pregnant women, ultimately aiming to enhance oral health outcomes for both mothers and their children.

Abbreviations

UHC: University Hospital Centers

Author Contributions

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Conflicts of Interest

The authors declare no conflicts of interest.

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