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Barriers to Accessing Dental Care During Pregnancy: A Study on Anatomical, Cultural, Financial, and Systemic Influences in Basra

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ABSTRACT

Background: Maintaining optimal oral health during pregnancy is critical, as it directly influences the health outcomes of both mother and fetus. Poor oral hygiene, particularly periodontal disease, is associated with serious maternal and fetal complications, including maternal cardiovascular disease, preterm birth, and low birth weight. Additionally, inadequate maternal dental health increases the risk of early-onset dental caries in children.

Aim: This study investigates the barriers to accessing dental care among pregnant women in Basra.

Methodology: A cross-sectional study was conducted among pregnant women attending antenatal clinics and hospitals in Basra. Data were collected using a structured questionnaire comprising five sections: demographic information, cultural factors, financial factors, systemic barriers, and awareness regarding the safety of dental treatments during pregnancy.

Results: Concerns about the safety of dental care during pregnancy constitute a significant barrier (59% of respondents). Financial constraints represent a major economic challenge in Iraq, and prolonged waiting times (reported by 32% of participants) further hinder access, with women experiencing same-day delays due to the absence of scheduled appointment systems.

Conclusion: To improve dental care access among pregnant women, policymakers should prioritize mandatory health insurance coverage to address financial barriers, integrate dental services into maternal health programs to enhance accessibility and enable early management of pregnancy-related oral conditions, and implement educational initiatives to dispel misconceptions about dental treatment safety during pregnancy

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1. INTRODUCTION

Dental health during pregnancy requires special attention since it can affect maternal health and birth outcomes (1). Maintaining good oral and dental health has several reflections on the general health of the mother and fetus. Poor oral health, when associated with periodontal affections, can lead to cardiovascular diseases in the mother (4). Preterm birth,

low birth weight, and early dental caries are also associated with poor maternal dental health (3). Despite its importance, oral health during pregnancy is often overlooked (3).

This study hypothesizes that in Basra, Iraq, certain factors create barriers to using dental health services. These include cultural norms, financial constraints, and systemic healthcare challenges.

Cultural beliefs about dental treatment during pregnancy are claimed to represent a major barrier, along with fear or misconceptions and traditional gender roles. Misconceptions regarding dental care during pregnancy, particularly concerning safety, are present. According to the American Dental Association, most dental treatments, including fillings, crowns, and routine cleanings, are safe during pregnancy (5, 6). Nevertheless, a limited understanding of oral and dental **anatomy** and the pregnancy-related anatomical changes may reinforce the fear that any intervention on teeth or gingiva which could "harm the baby" or disturb the fetus ,However, other cultural beliefs, such as the perception that dental problems are normal during pregnancy and therefore require no treatment will contribute to the neglect of dental care (6). Fear of dental interventions is another factor that discourages seeking care, and this fear is not limited to pregnant women (7).

Dietary habits in pregnancy have important implications for dental health, highlighting the need for special education programs (1). Many people, including pregnant women, seek traditional remedies as an alternative to medical dental care, which leads to the underutilization of available services (8). The influence of social networks cannot be overlooked, as they shape service utilization and contribute to the myth that dental care is unnecessary (9).

Financial limitations, including the cost of dental care and lack of insurance coverage, further decrease access to these services. Economic challenges and the financial state of families represent an important factor that hinders seeking dental care, especially in the private sector (10). Lack of dental insurance, and health insurance in general, is thought to increase utilization when present.

Systemic challenges within Iraq's healthcare system also play a significant role in limiting access to dental care services. According to the World Health Organization, the healthcare system in Iraq faces many systemic issues (11). Infrastructure deficiencies and a lack of dentists and care providers lead to longer waiting times, which can be frustrating for pregnant women. Additionally, integrating dental care into maternal healthcare programs may require significant effort to become functional.

Finally, social status and level of education are associated with evidence of dental caries in Basra (12).

This study aims to investigate the barriers accessing the dental care among pregnant women in Basra, with emphasis on how these barriers may affect the pregnancy-related anatomical changes in the periodontium and oral tissues, and the impact of cultural, financial, and systemic factors on the utilization of dental services during pregnancy.

The main objectives are to: explore cultural beliefs or misconceptions, assess financial constraints, evaluate the availability of dental care facilities and providers in Basra and to identify logistical barriers, such as waiting times, assess the awareness of safe dental treatments during pregnancy among pregnant women and healthcare providers.

2. PATIENTS AND METHODS

This study is a cross-sectional study involving pregnant women attending antenatal clinics and hospitals in Basra. Pregnant ladies of any stage of pregnancy were included. Women with pre-existing medical conditions unrelated to pregnancy that may affect their dental health or those unable to complete the survey due to language or cognitive barriers were excluded.

A stratified random sampling method was used and identified five of ten health sectors in Basra with one sector from the city center a four from the peripheries. Table 1: Shows the corresponding sample according to health sectors.

Table 1: Antenatal care clinics and corresponding number of respondents

Sector	Number of antenatal care clinics	Number of antenatal care clinics involved	Number of pregnant women interviewed
Sector 1 (city center)	13	3	98
Abul Khaseeb	14	3	96
Qurna	14	3	91
Zubair	18	5	124
Shattel Arab	10	2	62

Total	**471**

A structured questionnaire was developed and validated via reviews by 6 experts from Basra, Baghdad, Mosul and Erbil governorates. The questionnaire was tested in a pilot stage where 13 pregnant ladies were interviewed to confirm feasibility and to determine on time required to achieve each individual interview. The questionnaire covered the following headings:

Demographic Information: Age, education level, employment status, household income, and pregnancy trimester.

Cultural Factors: Beliefs, misconceptions, and attitudes toward dental care during pregnancy.

Financial Factors: Cost-related barriers and household income constraints.

Systemic Barriers: Accessibility to dental care facilities, waiting times, and integration of dental services into maternal healthcare programs.

Awareness: Knowledge of the safety of dental treatments during pregnancy, based on established guidelines.
Data was collected through face-to-face interviews at antenatal care by the researchers during the period Feb -June 2024.

Collected data were fed into SPSS version 26 spreadsheet for tabulation and analysis. Data were summarized using means, SD and frequency and percentages according to their nature. Chi squared test were done and Likert scale analysis was performed. Level of significance was set to 0.05.

Ethical approval will be obtained from Basra Health Directorate. Participants were informed about the purpose of the interviews informed and their anonymity and confidentiality were strictly considered.

3. RESULTS

Four hundred and seventy-one pregnant ladies were interviewed. Their basic characteristics are displayed in Table 2 which shows that the majority of respondents age 20-29 years. Less than a half of them had primary education and approximately 80% were unemployed. Most attendance were in the second trimester.

Table 2: Basic characteristics of the study population

Variable		Frequency (n)	Percentage (%)
Age Group (Years)	**<20**	66	14
	20–29	226	48
	30–39	118	25
	>=40	61	13
Level of Education	**Illiterate**	99	21
	Primary	212	45
	Secondary	108	23
	University and higher	52	11
Employment	**Unemployed**	372	79
	Self-employed	42	9
	Governmental employee	57	12
Trimester	**First**	268	57
	Second	160	34
	Third	42	9

The family and community traditions seemed to play a role in shaping the will of seeking dental care during pregnancy (40%). Gender related norms appeared in 23% of responses. However, the majority (60%) were due to false perception of safety of dental care on the health of the mother and/or the fetus (Table 3).

Table 3: Prevalence of Cultural Barriers to Dental Care

Barrier	Frequency (n)	Percentage (%)
Perception of dental treatment as unsafe	280	59.4
Influence of family/community traditions	190	40.3
Gender norms restricting clinic visits	110	23.3

Unstable income and high cost of dental care attracted women to seek such care in the public services where around 72% of respondents evaluated dental care to be costly. Presence of other requirements that absorb family income might hinder seeking medical care (58%) (Table 4).

Table 4: Prevalence of Financial Barriers to Dental Care

Barrier	Frequency (n)	Percentage (%)
High cost of dental care	340	72.2
Competing financial priorities	275	58.4
Unstable income	220	46.7

Many (55%) respondents claimed that they have difficulty in accessing dental care. Long waiting time appeared to prevent some ladies from seeking dental care while pregnant (32%) (Table 5).

Table 5: Prevalence of Systemic Barriers to Dental Care

Barrier	Frequency (n)	Percentage (%)
Difficulty in accessing dental clinics	260	55.2
Healthcare providers' lack of understanding	200	11.5
Insufficient clinics accepting pregnant women	175	9
Long waiting time	150	31.8

Correctly answered questions about dental care during pregnancy were 46.7% of responses. Around 32% of the sample of women attended dental care clinics at least once over the last 6 months from the time of interview mostly complaining from toothache (19%) (Table 6).

Table 6: Oral Health Knowledge and Practices

Practice/Knowledge Aspect		Frequency (n)	Percentage (%)
Knowledge of oral health during pregnancy		220	46.7
Dental visit in the last 6 months		150	31.8
Reason for last dental visit	Toothache	90	19.1
	Regular check-up	40	8.5
	Others	20	4.2

Table 7 shows the association of cultural, financial, and systemic barriers with demographic characteristics of the study population.

Younger participants (<20 years) seemed to have the highest prevalence of cultural (65%), financial (75%), and systemic (50%) barriers ($p < 0.05$) while older participants (≥40 years) had a relatively lower prevalence of the mentioned barriers. Illiterate and lower educational levels participants were disproportionately affected, with cultural, financial, and systemic barriers reported at 70%, 80%, and 60%, respectively ($p < 0.05$).

Unemployed participants were most affected by all sorts of barriers ($p < 0.01$), possibly due to limited financial resources and reduced access to health services.

First trimester of pregnancy was associated with higher percentages of being subject to barriers of seeking dental care.

Table 7: Factors Associated with Barriers to Dental Care (Bivariate Analysis)

	Variable	Cultural Barriers (%)	Financial Barriers (%)	Systemic Barriers (%)	p-value
Age Group in years	**<20**	65	75	50	0.04
	20–29	55	60	45	0.03
	30–39	50	55	40	0.05
	>=40	40	50	35	0.06
Education Level	**Illiterate**	70	80	60	0.01
	Primary	60	70	50	0.02

	Secondary	50	55	40	0.03
	University and higher	40	45	30	0.04
Employment Status	**Unemployed**	70	80	65	0.01
	Self-employed	50	60	45	0.03
	Governmental employee	40	50	35	0.05
Pregnancy Stage	**First**	65	70	50	0.03
	Second	55	60	45	0.04
	Third	50	55	40	0.05

Of the cultural barriers, age of up to 20 years, illiteracy and unemployment were prominent predictors of lower dental care utilization due to cultural, economic and social determinants with odds ratios of 2.1, 3.2 (95% CI: 2.0–4.5, p = 0.001), and 2.8 respectively.

Systemic barriers including difficulty accessing clinics, long waiting times, and inadequate healthcare provider understanding of pregnant women's needs were significantly associated with lower utilization rates.

Table 8: Multivariate Analysis of Barriers to Dental Care

Barrier Type	**Predictor Variable**	**Odds Ratio (OR)**	**95% Confidence Interval (CI)**	**p-value**
Cultural Barriers	**Age Group <20**	2.1	1.5–3.0	0.01
	Illiterate Education Level	3.2	2.0–4.5	0.001
	Unemployed	2.8	1.8–3.9	0.002
Systemic Barriers	**Difficulty Accessing Clinics**	2.5	1.7–3.5	0.004
	Long Waiting Time	2.0	1.3–2.8	0.02
	Healthcare Provider Understanding	1.8	1.2–2.5	0.03

Responses of participants about the modes r interventions to improve dental care utilization appeared in table 9. Affordability of dental care occupied the highest score of suggestions mentioned by 31.8% of participants.
Improved accessibility to dental clinics was the second most common recommendation, suggested by 25.5% of respondents.

Other recommendations included innovative approaches such as mobile dental services (4.5%), which could bring care to underserved or remote populations.

Table 9: Suggestions to Improve Access to Dental Care

Theme	**Frequency (n)**	**Percentage (%)**	**Example Quote**
Increased affordability	150	31.8	"Make dental care cheaper for everyone."
More accessible clinics	120	25.5	"We need clinics closer to residential areas."
Improved cultural awareness	80	17.0	"Educate families about the importance of dental care."
Enhanced provider training	50	10.6	"Train doctors to understand pregnancy needs."
Other	21	4.5	"Offer mobile dental services."

4. DISCUSSION

In this study a special focus was paid to critical barriers to accessing dental care during pregnancy in Basra including cultural, financial, and systemic factors. It showed a multifaceted situation on which the mentioned factors play determinant roles with misconception about safety of dental care to carry a high proportion (59%). These misconceptions allow pregnancy-related anatomical changes in the oral cavity—such as increased gingival vascularity, edema of the periodontal tissues, and heightened inflammatory response—to progress without professional management, thereby increasing the risk of pregnancy-associated gingivitis and periodontitis. Misconception was also stated to influence seeking medical care by pregnant women by Michalowicz et al., 2008 (13), Russell, S. L et al., 2008 (14) and Durand, R. et al., 2019 (15). There was a belief that dental care during pregnancy can harm the fetus which was not founded as reported by Jahan SS. Et al., 2022 (16).

Financial barriers constitute an economic challenge in Iraq (17) and this corresponds with the result reached by this study where 72% of respondents identified dental care to be deterred by high costs. Cost of dental care is not limited to low-income countries and present a challenge even in the developed world like Canada as confirmed by Thompson et al., 2014 (18). Affordability of dental care was also an issue in America (19). Low income complicates the situation in many instances and it is an issue especially in Iraq (17).

Of the systemic barriers, long waiting time appeared in 32% of responses. Respondents meant that they wait longer within the same day of visit since there is no waiting date to be appointed contrary to other countries. In America the waiting list is longer and may extend to days (19). Difficulty in accessing dental care clinic was reported to be a barrier in 55% of cases reflecting the need to consider this issue which is also an issue in rural areas in USA (19). Limited accessibility and delayed follow-up may worsen pregnancy-related anatomical vulnerabilities such as gingival hyperplasia, periodontal pocket formation, and increased susceptibility to oral infections,Cultural barriers on the other hand were not peculiar to Basra especially the influence of family and gender related patterns of care seeking. Other studies reported similar concerns although unrelated to dental care in particular (20).

Using alternative medicine was reported by fewer respondents. It mirrors the findings by Cruz Martínez et al. (2017) (8). This study had the strength of being comprehensive approach to identify barriers of various categories that might hinder seeking dental care by pregnant ladies. It reached essentially sufficient sample size with careful randomization can enhance generalizability of the results and thus provide hints to policymakers as well as health care providers. Public health interventions are wanted to counteract myths and promote dental care conception as safe. Integration of dental care with maternal health package ta primary health care level can present a modulating intervention.

As for other studies, limitations exist in this study. Recall bias of long past dental care seeking is one of the limitations. The variability of locations reached by the researchers in terms of economic status needs careful explanation of the financial barriers as considered. Longitudinal future studies are required to overcome the fact of being cross-sectional which may impose some limitation. Future research should more precisely quantify how delayed care affects key oral anatomical structures during pregnancy, including the progression of periodontitis, alterations in periodontal ligament integrity, and changes in alveolar bone height.

5. RECOMMENDATIONS

Based on the identified barriers and the analysis presented in this study, it is recommended that policymakers would face multilevel of required interventions. Health insurance is a recommended one approach to counteract financial barriers particularly in low-income locations. Integration of dental care with maternal health package is suggested to skip some systemic barriers including accessibility. Such integration ensures early assessment and management of anatomical alterations associated with pregnancy, including increased gingival vascularity and periodontal tissue sensitivity, thereby reducing the risk of pregnancy-associated gingivitis and periodontitis. Education campaigns are recommended to disseminate proper conception of dental care safety.

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