DENTAL CARIES AND NUTRITION AMONG PREGNANT WOMEN IN SABIYA REGION, KINGDOM OF SAUDI ARABIA- 2017 RESEARCHER

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ABSTRACT

To measure dental caries and nutrition among pregnant women in Sabya Region, 2017. **Methods:** A descriptive analytical study was designed to collect data from pregnant women visiting a PHC in sabya region, Saudi Arabia from November to April 2018. **Results:** The participants from pregnant women were approached with the questionnaire and respond. Out of 400 of participant, Majority of women were aged from 18-45 years (95.3%). Toothbrush is the most common tool used by participants to clean their teeth (89.5%). Only (25%) assumed that they have healthy teeth, (33%) had carries with no pain and (23%) had healthy teeth but prefer to visit a dentist. About (37.5%) received Iron + folic acid, (20%) had folic acid only and (15%) had multivitamins. From participants there are groups eating sweets frequently (43.5%). The main source of information come from dentist 76 (19%) followed by family member 70 (17.5%). The main reasons for visiting dental clinic were other reasons 125 (31.3%), feeling pain 125 (31%) and dental carries 85 (21.3%). The most common cause women didn't like to visit dentist was no need 319 (79.8%) and 31 (7.8%) because they worry and nervous from dentist. No significant relation between age and dental carries or gum disease (p = 0.3 - 0.1, respectively). Carries and unhealthy gum prevalence increase with women by increasing numbers of pregnancy also most common in housewife women than others (p= 0.05, 0.001,0.002) respectively. **Conclusion:** The present study demonstrates the dental caries is slightly common among pregnant women in PHC. More efforts and educational programs are needed to increase the awareness of importance of healthy diet during pregnancy.

KEYWORDS: Teeth, caries, gum, pregnant, women.

INTRODUCTION

The healthy future of society depends on the health of the children of today and their mothers, who are guardians of that future.[1] Since the old wives' tale "the loss of tooth for every pregnancy," oral health during pregnancy has long been a focus of interest.[2] Pregnancy is a one of a kind minute in a lady'slife.[3] During pregnancy, loads of physiological changes happen in body accordingly of expanded generation of estrogen and progesterone that may impact the oral health status. These hormonal alterations during pregnancy tend to increase the incidence of dental diseases like gingivitis and contribute to low salivary pH also can lead to increased incidence of dental caries.[4] The predominance rate of gingivitis among pregnancy ranges from 30% to 100%. Despite the fact that there is little confirmation that pregnancy builds the danger of dental caries, a few reviews have recommended that expansion in caries might be due to the effect of changes in eating habit and oral cleaning High prevalence of dental caries of 74%[5] and 99.9%[6] has been reported among pregnant women.

Pregnancy considered as a basic period that includes physiological and mental changes. These changes may force the women to disregard their general and oral wellbeing. ☐7☐ There is a positive relationship between oral medical issues like periodontitis and unfriendly pregnancy results like (preterm birth and eclampsia) and the great oral wellbeing can decrease the danger of these results.[8]

In a similar setting, a few elements are known to be related with children oral wellbeing status, including maternal oral wellbeing information and status, instruction, occupation and age.[9-10]

Saudi Arabia is known for high predominance of caries.[11-12] Children as young as 71 months have high rates of extreme caries.[13-14] Caries avoidance programs expect to control advancing elements.[15] and fortify defensive elements.[16]

Oral health knowledge projects are savvy techniques that can diminish infection chance through adjusting social and dietary variables.[17] These projects intend to enhance knowledge of oral medical problems, and depend on the presumption that appropriate oral health hones happen when individuals have sufficient information.[17] Many reviews have examined the

pertinence of this model among pregnant ladies in a few nations with various societies.[18-19], and comparative reviews have been led among pregnant ladies in a few districts of Saudi Arabia.[20-21]

A few reviews have demonstrated that instruction of pregnant ladies and young mother can together increase the improvement of dental caries. Through appraisal of oral health of pregnant ladies or new mothers and assessment of their insight on the oral care, a dental specialist or hygienist can evaluate the danger of dental caries, and to find a way to avoid disease that affect the teeth.[22]

Healthy food regimen is a fundamental part of the procedure that lead to improvement of oral and teeth health. Oral care, right nourishment decisions and good dieting propensies must start before pregnancy. Great dietary and oral cleanliness should be kept among the whole pregnancy.[23]

Pregnancy and early time of adolescent life is an extraordinary open door for children to learn about dental care and dietary patterns, which later will add to their oral wellbeing.[24] Youngster's first visit to a dental specialist's office should be not more than 1 year, however most parents hold up until the childern has the majority of his or her teeth problems, generally it is at 2 to 3 years old.[25] Dental caries and large portion of bad habit, like, thumb sucking may cause a problem with teeth. Inadequate oral care at early phases of life builds the danger of caries in the later time of life.[26]

Analysis of the epidemiological situation is the cornerstone of a successful preparation of the preventive program. It is important to know the oral health status of pregnant women in order to recommend strong preventive measures.

Dentist can be vital in improving prenatal outcome and maternal or dental health through screening, referral, and education of pregnant women. It is important to understand that a healthy oral examination is the most important objective in planning dental care for pregnant women.[27]

RATIONALE OF THE STUDY

World Health Organization characterizes(WHO) oral health as "being free of mouth and facial injury, oral and throat tumor and different sicknesses and disarranges that influence the

mouth and oral cavity." Oral health is fundamental to the health and well‑being of both the pregnant mother and her child.[28-29] The Pregnancy Risk Assessment Monitoring System announced that only 23‑43% of the pregnant ladies get dental care among pregnancy. The rate is a half to 66% of the pregnant in the United States (67%).[30] There is an identification observe among the ladies among pregnancy and after delivery concerning the gingival condition additionally it was watched that current gingival issues are irritated among pregnancy.

[31]In light of the clinical perceptions, the predominance of periodontal illnesses (PD) among pregnancy differs from 20% in a few reviews to 100% in others. In spite of a general diminishment in dental caries in all ages,[32-33] considers demonstrate that it stays high among pregnancy and roughly 40‑90% of the pregnant ladies experience the ill effects of dental caries in many countries.[34-35] Therefore, these reviews go for portraying the dental caries status among the Sabya pregnant women in Saudi Arabia. In many cases, there is deficient data about whether information of oral and dental health problems depend on the many practices that done by Saudi pregnant women.

Aim OF THE STUDY

To measure dental caries and nutrition among pregnant women who follow in PHCC in Sabya Region, 2017.

OBJECTIVE

1. To measure dental caries and nutrition, among pregnant women in Sabya Region, 2017'.
2. To assess the knowledge of pregnant women about the importance of dental hygiene
3. To determine oral hygiene practices of these women
4. To evaluate socio-demographic and nutritional habit during pregnancy.

RESEARCH QUESTIONS

- What is the prevalence of dental caries among pregnant women in Sabya city, 2017?
- What are the knowledge of pregnant women about the importance of dental hygiene?
- What are the oral hygiene practices of these women?
- What are the nutritional habit during pregnancy?

LITREREATURE REVIEW

A cross sectional study conducted by Sara *M El-khateeb*., 2015, in this study determine the prevalence of dental caries among young women in Central Western Region of Saudi Arabia, the study showed that among 419 patients the mean DMFT was 9.2, caries prevalence was 85.6%, and 56.5% of patients had missing teeth.[38]

Balqis. Gaffar, 2014 a cross sectional study assessed the association between oral health knowledge and practices of pregnant Saudi women selected from visitors to a government hospital in Dammam, Saudi Arabia in 2014. Women answered questions on oral health knowledge during pregnancy and knowledge of infant oral health. Most women (> 70%) knew that dental caries in children can be prevented, that pregnancy affects oral health and that dental treatment during pregnancy can negatively affect infants. Most women (> 80%) performed oral hygiene procedures but only 18% regularly visited the dentist. In a regression analysis, oral health knowledge was not significantly associated with reported oral hygiene practices. Women who visited the dentist regularly were more likely to know how to prevent caries in children, and that dental treatment during pregnancy and infant health were associated.[39]

Ramandeep Singh Gambhir., 2015 this study regarding oral health knowledge and awareness among pregnant women in India: A systematic review.

The systematic review revealed from seven studies that very few subjects (17.1% and 37.5%) felt the need for visiting a dentist during pregnancy in two studies.

Also the review showed that pregnant women had poor knowledge and awareness regarding oral health.[35] Therefore, there is an urgent need for education and motivation of expectant mothers regarding oral health through various health promotion interventions.

Clement C Azodo1, Oral health in pregnancy. This cross- sectional study was conducted among pregnant women attending the antenatal clinic (ANC) of a large university teaching hospital in Benin City, Nigeria, using interviewer-administered questionnaire as data collection tool. Descriptive and regression statistics were performed on data collected using SPSS version 17.0. P <0.05 was considered statistically significant. Results: A total of 410 pregnant women with a mean age of 29.6 ± 5.3 years participated in this study. Of the participants, 94(22.9%) exhibited adequate overall oral health knowledge. The significant

determinants of oral health knowledge were ever received oral health information and receipt of oral health advice in pregnancy. About two-thirds (61.5%) of the participants held erroneous oral health believes. The erroneous oral health belief was significantly higher among the unmarried, multiparous, illiterate, and nonprofessional indigenous participants. Educational attainment emerged as the only significant predictor of good oral health belief.

CONCLUSION

Data from this study revealed that exposure to oral health information exerted a significant positive impact on oral health knowledge but not on belief of the studied pregnant women. Exploration of the quality and mode of receipt of oral health information among pregnant women is recommended[40]

Larissa *et al*., 2011 in a cross sectional study conducted in Costa primary healthcare unit in the south-central zone of Manaus, Amazonas among 50 pregnant women, to assess the prevalence of dental caries, they used the DMFT Index, and for gingivitis, we used the Plaque Index and Gingival Bleeding Index. The study showed that one hundred percent of the population presented with caries; the mean DMFT score was 10.0, and the M component (missing teeth) was predominant (4.28). Among the pregnant women examined, 62% presented with moderate gingival inflammation, and 64% presented with at least some plaque.[36]

Oral Health Status and Treatment Needs among Pregnant Women of Raichur District, India conducted by Ritu Gupta. A Population based cross-sectional study showed that, the mean age of the pregnant women in the study was 21.8 (2.12) years. The prevalence of caries and periodontal diseases was 62.7% and 95%, respectively. The mean DT, MT, FT, and DMFT were 2.06, 0.03, 0.04 and 2.13, respectively. The mean OHI-S was 2.87.[37]

Santhosh *et al*., 2013., among 206 pregnant women attending a maternity hospital in Udaipur city, India. The overall caries prevalence was 87%. Mean caries experience differed significantly among women in various trimesters, it was found to be 3.59 and 3.00 in 1st and 2nd trimester subjects respectively while it was greatest (4.13) among those in 3rd trimester.[39]

METHODOLOGY

Study design

A descriptive analytical study cross sectional design was conducted in Sabya city (Kingdom Saudi Arabia) among 400 pregnant women who followed at ANC in PHCC.

Study site

The study was conducted in Sabya city, KSA.

Sabya is a city found in Jazan, Saudi Arabia. It is located 17.15 altitude and 42.63 longitudes and it is situated at elevation 36 meters above sea level. Sabya has a population of 54,108 making it the 2nd biggest city in Jazan.

Study population

Pregnant women attending Sabya primary health care centers comprised the population from which the study sample will be selected.

Table 1: Sample distribuation among PHCC in sabya city.

PHC	Population	Sample
1- Sabya center	350	
2- Al-zabara	110	
3- Al-khaldia	142	
4- Salhba	173	

SELECTION CRITERIA

Inclusion criteria

1. Pregnant women who attends primary health care centers in Sabya Region and are willing to participate in the study.
2. Healthy women who had no mental and physical disability that would prevent them from accessing dental services.
3. Women at the 2nd, 3rd trimester of pregnancy.

Exclusion criteria

1. Pregnant women who attends primary health care centers in Sabya Region and are not willing to participate in the study.
2. Pregnant women who had mental and physical disability that would not prevent them from accessing dental services.
3. Women at the first trimester of pregnancy.

SAMPLE SIZE AND SAMPLING TECHNIQUE

Sample Size

The sample size was collected according to the following formula: $n = z^2 (QP) / d2$

Where: n = sample size

z = standard deviation = 1.96 P = probability = 50% = 0.5 Q = 1-P = 1-0.5 =0.5

d = margin error of 95% = 5%

$n = (1.96)^2 \times (0.5 \times 0.5) / (5\%)^2 = 384$, considering the non-response rate the sample size increased to be **400** pregnant women.

Sample Technique

400 Pregnant women was randomly selected from the pregnant women who attends health care center during the clinic day working hours from 8 am to 1 pm through multistage sampling using two strata; first one strata for all section in Sabya Region and the second strata was health care centers in each section, one health care centers was randomly selected from each section.

Data instruments

For the clinical examination, a modified WHO assessment form (1997) will be used. Variables that are not relevant to the present study was excluded A structured questionnaire translated into Arabic language was administered s to the pregnant women.

The questionnaire consisted of (1) socio-demographic factors (age, education, and occupation/profession); (2) Perceived oral health (dental caries, periodontal disease); (3) oral health habits (tooth brushing, other oral hygiene aids, and dental visits); (4) knowledge concerning tooth brushing, and oral diseases; and (5) instructions relating to oral health care. Data was collected in two ways using:

1. A structured, administered questionnaire: The participants was interviewed about their age, level of education, occupation, number of children, history of pregnancy, oral habits etc.

2. A data capture sheet for a Clinical oral examination using modified WHO Oral Health Assessment 1997 Guidelines (Appendix 2). Demographic variables, DMFT, periodontal disease and oral mucosal lesions will be recorded.[39]

The questionnaire was designed in English language, but translated to Arabic language. Preparation of the final draft after the piloted and tested for reliability, consistency and

validity. The questionnaire was printed and used for the major study.

DATA COLLECTION

Cross Infection Control Measures

Two plastic boxes with different colors for instruments will be provided. One box was for transporting sterile instruments only and was sterilized if contaminated. A new set of sterile instruments was used for each subject. Gloves was changed before the examination on every subject and facemasks was changed every hour. Used probes, mirrors, and other instruments was collected in a separate container and, cleaned, washed and autoclaved at the end of the working day. A clinical waste bag was utilized for the disposal of used gloves, facemask, wipes and clinical sheets.

Clinical Examination and documentation

Intra-oral: hard and soft tissues examination

The WHO Oral health survey guidelines and criteria (dmft/DMFT, CPITN) was used. The oral examination was carried out without prior cleaning or drying of the teeth, using a plane mirror and dental curved probe, no radiographic examination was performed. The oral examinations was carried out in two different places, the referral clinics and ultrasound clinics. The pregnant women was seated in chairs the oral examination was carried out under the natural light.

Definition status and treatment need-DMFT: Codes and criteria

- Sound crowns

A crown was recorded as sound if it showed no evidence of treated or untreated clinical caries. In addition, a crown with the following defects was also coded as sound: white or chalky spots, discoloured or rough spots that are not soft to touch with the metal CPI probe, stained pits or fissures in the enamel that did not have visual signs of undermined enamel, or softening of the floor or walls detectable with CPI probe, dark, shiny, hard, pitted areas of enamel in a tooth showing signs of moderate to severe fluorosis, lesions that, on the basis of distribution or history, appeared to be due to abrasion.[41-42]

1- Decayed crown

Caries was recorded as present when a lesion in a pit or fissure, or on a smooth tooth surface, had an unmistakable cavity, undermined enamel, or a detectable softened floor or wall. A tooth with a temporary filling, or one which is sealed (code 6) but also decayed was also

included in this category. The CPI probe was used to confirm visual evidence of caries on the occlusal, buccal and lingual surfaces. Where any doubt existed, caries is not recorded as being present.[41-42]

2- Filled crown, with decay

A crown was considered filled, with decay, if it had one or more permanent restorations and one or more areas that were decayed.[41-42]

3- Filled crown, no decay

A crown was considered filled, without decay, when one or more permanent restorations will be present and there is no caries anywhere on the crown. A tooth that has been crowned because of previous decay will be recorded in this category. A tooth that had been crowned for other reasons (e.g. a bridge abutment), was coded as (7).

4- Missing tooth, as a result of caries

This code was used for teeth that had been extracted because of caries and was recorded under coronal status.[41-42]

5 -Tooth missing, for any other reason

This code was used for teeth judged to be absent congenitally, or extracted for orthodontic reasons, periodontal disease, trauma,[41-42]

6- Fissure sealant This code will be used for teeth in which a fissure sealant had been placed on the occlusal surface. If a tooth with sealant had decay it was coded as (1).

7- Bridge abutment, crown, and veneer

This code was used under coronal status to indicate that a tooth formed part of a fixed bridge i.e. is a bridge abutment. It was used for crowns placed for reasons other than for caries and for veneers or laminate covering the labial surface of a tooth on which there was no evidence of caries or a restoration. Missing teeth replaced by bridge pontics was coded 4 or 5 under coronal status.[41-42]

8- Unerrupted crown

This code was used for a tooth space with an unerupted permanent tooth. Teeth scored as unerupted was excluded from all calculation concerning dental caries.

This category does not include congenitally missing teeth, or teeth lost as a result of trauma, etc.[41-42]

9- Not recorded

This code was used for any tooth that could not be examined for any reason.

Data analysis

Data were gathered categorized and coded then entered into the computer. The data were be captured in SPSS. Basic descriptive statistic was done using the spss environment. The database was imported into social package of statistical analyses (SPSS) for windows to perform complex statistical analyses. Descriptive statistics was used to describe the demographic factors. odds ratio and the independent t-test was used to determine relation between the scale variables of the sample.

Ethical considerations

- Official approval was obtained from Research Committee Board in the University.
- Permission to do the research was obtained from Director of Health in Sabya city.
- Written informed consent to carry out clinical interviews was obtained from pregnant women.
- Informed verbal consent was obtained from all participant.
- Oral health education and a demonstration of how to brush teeth was conducted after the examinations(helping by dentist to get more benefit for p
- Participants was free to withdraw from the study at any time.

RESULTS

The first section of the questioner was about demographics of participants (from question 1 to question 4). Out of 400 participants, Majority of women were aged from 18-45 years (95.3%) and had (2- 4 times) of pregnancy. Around 49.9% of pregnant women they have high level of education and on other side 46.3% house wife.

Data in table 2 is showed in details for every variable in frequency and percentages.

Table 2: Socio-demographics data in numbers and percentages among pregnant women attending Sabya primary health care centers, Saudi Arabia.

	No	%
Age (years)		
Less than 18	1	0.3
18-45	381	95.3
More than 45	18	4.6
Pregnancy number		
1	106	26.5
2-4	211	52.8
>4	110	20.9
Education level		
Illiterate	14	3.5
Qur'an school	5	1.3
Primary	43	10.8
Intermediate	32	8
Secondary	83	20.8
University	199	49.9
Post graduate	23	5.9
Occupation		
Student	67	16.8
House wife	185	46.3
Labor	37	9.3
Teacher	46	11.5
Other	65	16.3

Assess Dental hygiene and use of dental brush

The questions from 5 to 14 assess total dental hygiene and use of dental brush between participants. Tooth brush is the most frequent tool for cleaning teeth between women (89.5%).

Most of women brush their teeth in the morning (44.8%) and (41.2%) before sleep. (42%) brush their teeth to get fresh breath and (32.3%) for cleaning purpose. Have caries with no pain (33%) is highest percentage between women when asked to evaluate their teeth's health condition, however (25%) of them evaluate their teeth as healthy. In the other hand, (55%) claimed that they have a healthy gum and (24.3%) had unhealthy gum. From participants who answered yes to gum problems, (15.5%) suffer from bleeding and (10.5%) had a gum pain. while 63.3% they don't have any change in the gum.

Table 3: Asses Dental hygiene and use of dental brush among pregnant women attending Sabya primary health care centers, Saudi Arabia.

	No	%
What do you frequently use for cleaning your teeth?		
Toothbrush	358	89.5
Meswak	36	9
Other	6	1.5
How many times you brush your teeth?		
Once	122	30.5
Twice	181	45.3
More than 2	88	22
Never	9	2.2
When you usually brush your teeth?		
Morning	179	44.8
Before each meal	2	0.5
After each meal	54	13.5
Before sleep	165	41.2
Why you brush your teeth?		
Cleaning	129	32.3
Fresh breath	168	42
Prevent from Caries	73	18.2
Prevent Gum disease	12	3
I don't know	18	4.5
What other methods do you use for cleaning your teeth?		
Dental floss	91	22.8
Tooth picks	119	29.8
Mouth wash	115	28.7
None	75	18.7
How do you evaluate your teeth's health condition?		
Healthy	100	25
Healthy but I prefer to visit a dentist	93	23.2
Have caries with no pain	132	33
Have a pain	59	14.8
I don't know	16	4
How do you evaluate your gum's health condition?		
Healthy	220	55
Unhealthy	97	24.3
I don't know	83	20.7
Do you notice any changes in your gum's health condition?		
Yes	126	31.5
No	274	68.5
If yes, please clarify		
Swelling	32	8
Bleeding	62	15.5
Pain	42	10.5

Ulcer	11	2.8
None	253	63.3

Nutritional habits between participants

In this section we discuss the attitude of pregnant women towards their diet along the day. Having sweaty meals and drinks varies between participants but highest percentages went to had only once/day (28.5%) followed by twice/day (23%). Regarding vegetables and fruits most of women had only once/per day for each (61.5%) and (56%), respectively. Women had vitamins classified as follow: (37.5%) received Iron + folic acid, (20%) had folic acid only and (15%) had multivitamins however, (25.7%) didn't take anything.

43% received calcium among the duration of pregnancy 17.2% during 2nd trimester, 14.3% in the third trimester and 3% started before conception while 57% did not receive calcium supplement.

Table 4: Asses Nutritional habits among pregnant women attending Sabya primary health care centers, Saudi Arabia.

	No	%
How many times per day you have sweaty meals and drinks?		
Never	42	10.5
One	114	28.5
Twice	92	23
More than 2	74	18.5
Every few days	78	19.5
How many meals do you eat per day?		
Once	25	6.3
Twice	131	32.7
3 times	202	50.5
More than 3	42	10.5
Do you have any snacks between meals?		
Yes	265	66.2
No	135	33.8
How many times do you eat vegetables per day?		
Once	264	61.5
Twice	56	14
3 times	10	2.5
More than 3	11	2.8
Never	77	19.2
How many times do you eat fruits per day?		
Once	224	56
Twice	50	12.5
3 times	8	2
More than 3	12	3

Never	106	26.5
How many times do you drink milk per day?		
Once	216	54
Twice	65	16.2
3 times	19	4.8
More than 3	20	5
Never	80	20
Do you use the following vitamins?		
Multivitamins	60	15
Iron + folic acid	150	37.5
Folic acid only	82	20.5
Iv vitamin	5	1.3
Nothing	103	25.7
Do use calcium tablets during pregnancy?		
Yes	172	43
No	228	57
In which period if your pregnancy?		
First trimester	37	9.3
Second trimester	69	17.2
Third trimester	59	14.8
Before pregnancy	12	3
None	223	55.7

Knowledge of dental care routine

The following questions assess the knowledge of participants about dental care routine. Although (50.7%) thought that the person have to visit dentist every 6 months while 17.8% only if there is pain. only (15.3%) follow that advice and most of them visit the dentist when there is a pain (63.7%). From participants' opinion eating sweets frequently (43.5%) and dirty teeth (53.5%) are the main cause of dental carries and gum diseases, respectively. While 15.5% related to gum disease b/c of eating sweat frequently.

Table 5: Perception and Knowledge of dental care among pregnant women attending Sabya primary health care centers, Saudi Arabia.

	No	%
How many times do you think that person have to visit a dentist?		
Every 6 months	203	50.7
Every 1 year	39	9.8
When there is a pain	71	17.8
Never	87	21.7
How many times do you visit a dentist?		
Every 6 months	61	15.3
Every 1 year	30	7.5
When there is a pain	255	63.7
Never	54	13.5
In your opinion, what cause dental caries?		
Dirty teeth	136	34
Eating sweets frequently	174	43.5
Other	37	9.3
I don't know	53	13.2
In your opinion, what cause gum diseases?		
Dirty teeth	214	53.5
Eating sweets frequently	62	15.5
Other	43	10.8
I don't know	81	20.2

Source of information of dental and gum care

The figure below shows that the majority of participants had no body to receive an advice for their teeth and gum care 167 (41.8%). The main source of information come from dentist 76 (19%) followed by family member 70 (17.5%), TV came in the 3rd source information 38 (9.5%). Other source of information like assist, GP, midwife, nurse and teacher represent small percentage. Figure 1.
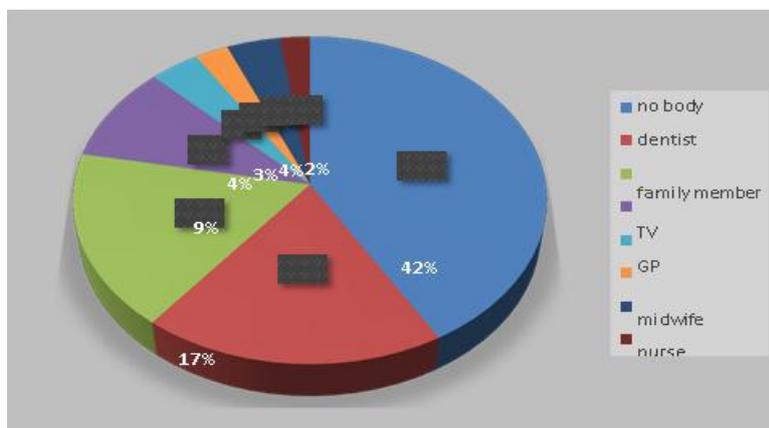

Figure 1: Source of knowledge of dental and gum care among pregnant women attending Sabya primary health care centers, Saudi Arabia.

Reasons behind visiting or not of dental clinic

Results showed that (79.8%) of women visited dentist during pregnancy while (20.2%) not. The main Reasons for visiting dental clinic were other reason 125 (31.3%), feeling pain 125 (31%) and dental carries 85 (21.3%). In other hand, women didn't visit dentist during pregnancy had different reasons. The most common one that they said was no need 319 (79.8%), 31 (7.8%) because they worry and nervous from dentist, 20 (5%) because of their laziness and 18 (4.5%) due to expensive treatment.

Table 6: Number and frequency of pregnant women who visit dentist from patients attending Sabya primary health care centers, Saudi Arabia.

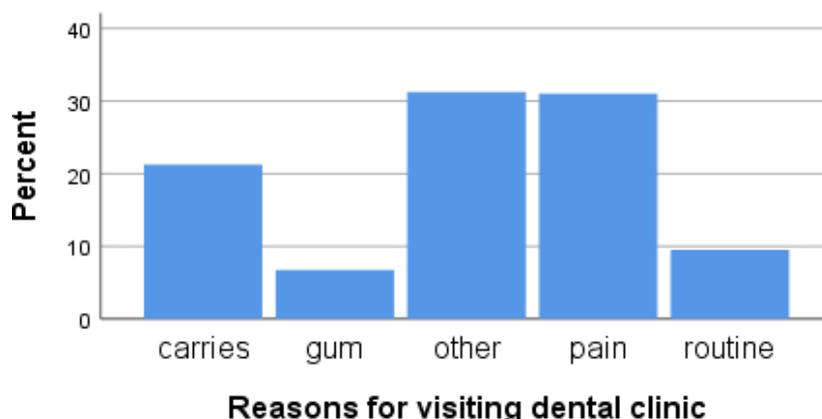| Do visit dentist during pregnancy?*		
	No	%
Yes	319	79.8
No	80	20.2

Figure 2: Reasons for visiting dental clinic among pregnant women attending Sabya primary health care centers, Saudi Arabia.
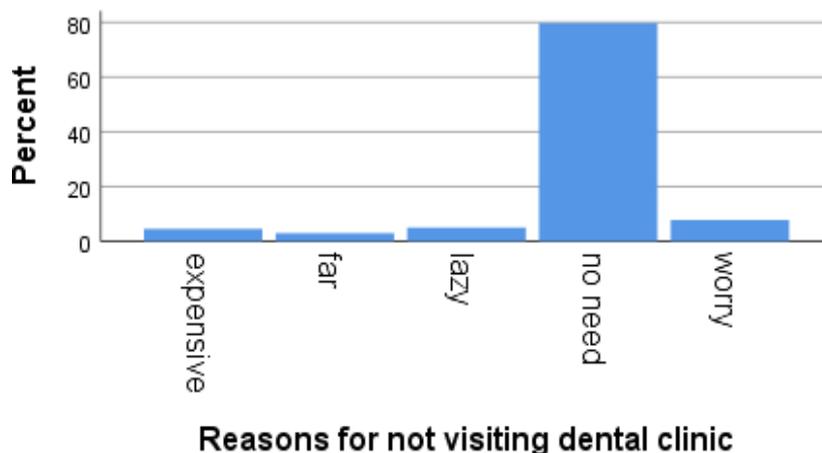

Figure 3: Reasons for not visiting dental clinic among pregnant women attending Sabya primary health care centers, Saudi Arabia.

Relation between sociodemgraphic data and different variables

We apply relation between sociodemgraphic data and different variables from the questioner using chi-square test p- value > 0.05 are considered not significant. In the table below we mentioned the significant relations which p <0.05. significant relation between dental carries and gum diseases and occupation, pregnancy number and education (p<0.05). Carries and unhealthy gum prevalence increase with women by increasing numbers of pregnancy also most common in housewife women than others p value 0.05, 0.001, 0.002 respectively. Other variables mentioned below in details.

Table 7: Relation between sociodemgraphic data and different variables among pregnant women attending Sabya primary health care centers, Saudi Arabia.

Variable	Dental evaluation			p value
Pregnancy number	**Healthy**	**Carries with no pain**	**Pain**	
1	31	33	7	
2-4	50	69	33	0.05
More than 4	20	30	19	
Occupation	**Healthy**	**Carries with no pain**	**Pain**	
Student	20	23	5	
Housewife	52	61	34	
Labor	13	13	5	0.002
Teacher	4	15	11	
Other	11	20	4	
Gum evaluation				
Pregnancy number	**Healthy**	**Unhealthy**	**p value**	
1	64	23		
2-4	117	54	<0.001	
More than 4	39	20		

Number of eaten vegetables per day					
Pregnancy number	**Once**	**Twice**	**Three**	**More than 3**	**p value**
1	58	18	3	1	
2-4	131	33	5	8	<0.001
More than 4	57	5	2	2	
Occupation					
Student	42	11	2	1	
Housewife	111	26	5	7	
Labor	22	5	0	2	<0.001
Teacher	35	3	2	1	
Other	36	11	1	0	

Changes in teeth during pregnancy			
Education	**Yes**	**No**	**p value**
Illiterate	1	13	
Qur'an	2	3	0.03
Primary	11	32	

Intermediate	9	23	
Secondary	28	55	
University	68	131	
Postgraduate	7	15	

P<0.05 is significant

DISCUSSION

This cross-sectional study design was conduct in sabya Region, Saudi Arabia, to obtain data from pregnant women follow in ANC in PHCC. Pregnancy is characterized by several systemic changes in the woman's body.[44] There are studies suggesting differences in the levels of dental caries among pregnant and non-pregnant women.[45-47] According to participant's women point of view about dental oral health evaluation (33%) admitted that they suffer from dental caries.

A cohort study reported that approximately 40 percent of pregnant women in the United States had some form of periodontal infection, which may include gingivitis and periodontitis.[48] In contrast, the prevalence of dental caries is extremely high as well as the values of DMFT index in the first and seventh grades in the municipality Gorazd.[49]

Our results revealed that most of women had one vegetable or fruit per day. One prospective study from a highly developed area reported increased risk for small for gestational age birth by women with low vegetable intakes (odds ratio 3.1; 95% confidence interval 1.4–6.9; P=0.01); another large prospective study reported a 10.4 g increase in birth weight per quintile increase in fruit intake (95% confidence interval 6.9–3.9; P<0.0001) and increases of 8.4 or 7.7 g per quintile intake of fruits and vegetables (combined) or fruits, vegetables, and juice (combined), respectively.[43]

When applying relation analysis in our study results showed that no significant relation between age and dental carries or gum disease p value = to 0.3 and 0.1, respectively. Carries and unhealthy gum prevalence increase with women by increasing numbers of pregnancy also most common in housewife women than others p value 0.05, 0.001, 0.002 respectively.

Results of the multivariable analysis in cross sectional study conducted in Jerusalem showed that age, level of education, recent dental visit, and the belief that it is unsafe to get routine dental care during pregnancy explained 25% of the variation in the DMFT score.[51] The oral health in pregnant women scores were significantly associated with age (p=0.02), first

pregnancy (p<0.001), need for dental prosthesis (p<0.001), presence of dental caries (p<0.001) and missing teeth (p=0.01).[52]

Toothbrush is the most common tool used by our participants to clean their teeth (89.5%). Alternative method is also used as tooth pick (29.8%), mouth wash (28.7%) and dental floss (22.8%). Another study approved that oral hygiene instruction was provided using a soft conventional toothbrush and dental floss, but the clinical results achieved using these methods were inadequate. Alternative methods of plaque removal were offered, such as the use of a power toothbrush and a dental floss fork.[53]

Folic acid and multivitamins is recommended to reduce the risk of neural tube defects and other congenital malformations.[54] (25.7%) from our participants didn't use any multivitamins or folic acid which lead them to the risk of neural tube defects.

In a cohort study complete questionnaires and subsequent pregnancy outcome information was obtained in 22 776 pregnancies, of which ended in a neural tube defect. The prevalence of neural tube defect was 3.5 per 1000 among women who never used multivitamins before or after conception or who used multivitamins before conception only.[55]

Dental pain was found to be the main reason for visiting the dentist among the target group. The same result as a study conducted in Jeddah city.[56] In other hand, our results revealed that Worry and nervousness come as the main cause of not visiting dentist if they had dental issues. A survey of the dentist patient relationship, carried out in several study, found that 'fear' and 'dislike' of the dentist, 'low' confidence in the dentist and a poor dentist attitude to the patient are all associated with poor attendance.[57]

CONCLUSION

This study concluded that pregnant women follow in ANC PHCC The pregnant women had a good knowledge about the care of oral and dental during pregnancy and before and after but didn't utilize this information as proper way to protect her and fetal health The Study found no significant relation between duration of pregnancy and dental problems.

Dental caries is slightly common among pregnant women in PHC. Dental pain was found to be the main reason for visiting the dentist.

Recommendation

1. Improve dental health information and oral care habits of pregnant women in order to prevent oral and dental illness and encourage them to have regular dental follow up to prevent further illness.

2. Avoid frequent consumption of juice or other sugar- containing drinks,

3. Visit the dentist once got a dental or gum problem.

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