

Original Research Article

KNOWLEDGE AND PRACTICES OF ORAL HEALTH STATUS AMONG PREGNANT WOMEN ATTENDING LIAQUAT UNIVERSITY HOSPITAL JAMSHORO

Comment [SH1]: The status of knowledge and practice of oral health....

ABSTRACT

Background: Pregnant women's oral health behaviors and attitudes are infrequently studied in low-income countries, but they should be taken into account when developing preventive or therapeutic research to lessen the load of oral illnesses.

Comment [SH2]: Make this into 2 or more sentences

Objective: To assess the knowledge and practices of oral health in pregnant women attending Oral diagnosis OPD of Liaquat university hospital Jamshoro.

Comment [SH3]: First time use of abbreviation should be written out completely

Subject and Methods: A total of 150 patients were included in the study. The data was collected by providing questionnaire to pregnant women who attended OPD for antenatal check up. Sociodemographic findings, questions related to participant's knowledge regarding oral health and practices adopted were recorded

Comment [SH4]: Delete THE, capit Data

Comment [SH5]: Their antenatal

Results: Most of the patients 49.3% were in age range of 26 to 35 years with majority of them were housewives. A total of 48% were illiterate followed by 24.6% who were having just primary education. Around 51.3% have good habit of brushing twice a day.

Comment [SH6]: The patients, 49.3

Comment [SH7]: With the majority of them being housewives

Comment [SH8]: Had only

Comment [SH9]: Have the

Only 37.3% had knowledge about nutritional implications in pregnancy and 34% visit dentist once in six months.

Comment [SH10]: Pregnancy,

Conclusion: Majority of patients has little or average knowledge regarding oral health in pregnancy.

Comment [SH11]: The majority of patients have

Key Words: *Pregnancy, Oral health, Knowledge, Practices*

INTRODUCTION

Many investigations have shown a bidirectional relationship between dental health and pregnancy, with pregnant women being more likely to have poor oral health.¹

Pregnancy is a one-of-a-kind experience for a woman. During this time, many physiological, mental, and physical alterations take place. These alterations are linked to an elevation in oestrogen and progesterone production during pregnancy.² These changes may make you more vulnerable to oral illnesses.³

Comment [SH12]: Make them

Pregnancy is linked to an upsurge in the incidence and/or seriousness of gingivitis, which is defined by gingival bleeding and swelling, and periodontitis, which is characterized by an increase in periodontal probing depth, clinical attachment, and bone loss.⁴

Comment [SH13]: that

Caries and periodontal diseases are infectious illnesses caused by

Comment [SH14]: diseases

oral biofilms, which include supragingival, ~~supragingival~~, and subgingival biofilms for caries and supragingival and subgingival biofilms for periodontal diseases.⁵ The amount and pathogenicity of the oral microbiome change during pregnancy as higher viable counts are detected, such as Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans, two well-known periodontal pathogens.⁶

Comment [SH15]: Oral plaque biofilm

Comment [SH16]: Caries,

Comment [SH17]: Biofilm not films

Comment [SH18]: PERIOD. These are p....

Maternal oral health has been linked to birth outcomes and newborn oral health in several studies.⁷ Mothers with poor dental health have been proven to enhance their infant's caries susceptibility by spreading cariogenic germs through inappropriate feeding. Numerous investigations have also found a link between periodontal health and the success of a pregnancy. Low birth weight (LBW) and premature delivery can be caused by periodontal disease during pregnancy.⁸

Comment [SH19]: Newborn oral health is not examined

Comment [SH20]: increase

Comment [SH21]: Bacteria, not GERMS

Proper diet and a healthful lifestyle, which includes good dental hygiene practices, are critical to pregnant women's overall health.⁹ Cultivating oral health practices, which include knowledge, attitude, and practice, can help prevent dental health concerns and difficulties during pregnancy.¹⁰

Comment [SH22]: healthy

Pregnancy gingivitis, which affects 60 percent to 75 % of women^{11,12}, xerostomy, which affects 15 to 18 percent of women¹³, pregnancy epulis, which affects about 5% of women¹⁴, dental erosion, which affects 70 to 80% of women¹⁵, and halitosis, which

Comment [SH23]: xerostomia

affects around 13 percent of women¹⁶, are the greatest common oral changes that occur during gestation. Similarly, dietary changes have been linked to an increased risk of acquiring caries lesions or a progression of those that are already existing.¹⁷

Comment [SH24]: carious

Regrettably, the majority of published research revealed that pregnant women had little understanding and misconceptions about dental health and treatment during pregnancy.¹⁸ This lack of understanding might be attributed to a lack of knowledge gained during the pregnancy follow-up, since oral health is rarely discussed with patients.

Comment [SH25]: is

Comment [SH26]: Check ups

Comment [SH27]: as

The aim of this study was to evaluate the knowledge and behavior related to oral health oral health practice among pregnant women attending Liaquat university hospital. The findings would provide as a foundation for developing an oral health education programme focused at improving the oral health of pregnant women receiving hospital treatment.

UNDER PLEP PREVIEW

METHODOLOGY

This descriptive **cross-sectional** study was conducted on pregnant women who attended Oral diagnosis OPD of Liaquat university hospital from January 2021 to December 2021. This study was **approved** by ethical review committee LUMHS. The data was collected by providing **a** questionnaire to pregnant women who attended OPD for antenatal check up and **give consent** to fill **out** this questionnaire. The sampling technique was purposive sampling technique done on basis of some predetermined knowledge.

Comment [SH28]: To collect consent

The questionnaire was consisted of three parts. The first part **consists** of questions regarding **the** respondent's sociodemographic characteristics such as age, occupation, educational status, **and** pregnancy trimester.

Comment [SH29]: consisted

The second part **consists** of questions regarding **respondents** knowledge of **respondent's** about oral health. There were 12 questions in **the** second part. Questions were related to frequency and **timing of totth brushing**, fluoride in **toothpaste**, oral hygiene aids, nutritional implications, dental decay etc. The knowledge was measured using the **Guttman** scale.

Comment [SH30]: Consisted of

Comment [SH31]: The time when teeth were brushed

The fourth part contained questions about oral care practices of **the respondent's**. This part was aimed to assess respondent's oral health practices. The practice was measured using the Guttman scale. Respondents were given a score of 1 if they answered "yes" and 0 if they answered "no".

Comment [SH32]: respondents

Inclusion a criterion of this study was pregnant women, give consent to participate, can read and write.

The data was analyzed using SPSS version 22.

Comment [SH33]: The inclusion criteria for the study was....consent to participate and ability to read and write

UNDER PEER REVIEW

RESULTS

The statistics about age groups, educational status, occupation and pregnancy trimester is highlighted in table 1.

Comment [SH34]: Occupation,

Patient's knowledge about oral health in pregnancy have been mentioned in table 2, where 12 questions were asked from every subject to assess knowledge.

Comment [SH35]: All participants

Practices adopted by pregnant females in terms of oral hygiene have been mentioned in table 3.

Comment [SH36]: Recorded

Table 1: Sociodemographic Findings

VARIABLE	FREQUENCY	%
AGE GROUP		
18 to 25 Years	48	32%
26 to 35 Years	74	49.33%
36 to 45 Years	28	18.66%
EDUCATIONAL STATUS		
Illiterate	72	48%
Primary Education	37	24.66%
Matriculation	21	14%
Intermediate	14	9.33%
Graduate	05	3.33%
Masters	01	0.66%
OCCUPATION		
Working Women	17	11.33%
Housewife	133	88.665
PREGNANCY TRIMESTER		
1 st	38	25.33%
2 nd	72	48%
3 rd	40	26.66%

Table 2: Knowledge of Pregnant Patients regarding Oral hygiene.

QUESTIONS ABOUT KNOWLEDGE	AGREE	%
The Proper frequency of tooth brushing is 2 times a day	82	54.6%
The time of brushing in the morning is after breakfast	69	46%
The time of brushing in the evening is before bedtime	68	45.33%
Oral hygiene aids are dental floss and tongue brush	32	21.33%
The function of tongue scrapper is to clean the tongue surface	98	65.3%
A good toothpaste contains fluoride	34	22.6%
Routine visit to dentist is after every six months	56	37.3%
Oral health problem during pregnancy affect baby's health	53	35.3%
Routine oral health examinations are necessary during pregnancy	49	32.6%
The nutritional intake of pregnant women affects the fetus teeth grow	56	37.3%
Foods containing vitamins and minerals are good for oral health	88	58.6%
Sweet foods can cause tooth decay	113	75.3%

Table 3: Practices of Pregnant Patients regarding Oral hygiene.

Practice	Frequency	%
Brushing 2 times a day	77	51.3%
Brushing Once a day	61	40.6%
Brushing More than 2 times a day	12	8%
No tooth brushing	00	0%
Brushing after breakfast and before bed time	72	48%
Using Dental floss	28	18.6%
Using tongue scraper	10	6.6%
Using fluoride toothpaste	26	17.3%
Using Miswak	34	22.6%
Visit dentist after every 6 months	51	34%

DISCUSSION

Pregnancy is a remarkable time in a woman's life, marked by complicated physiological alterations that might have a negative impact on dental health. Preventive, diagnostic, and restorative dental therapy is safe and efficient in enhancing and sustaining oral health throughout gestation.¹⁹

Most of the patients in this current study were in the age group of between 26 to 35 years. This respondent's characteristic was similar to the research conducted by Nogueira et al²⁰, which also that had a predominantly young group of pregnant women as the research respondents. A study conducted by Brohi ZA²¹ stated that most of the women 47.5% had were in the age group of 26- 35 years. The mean age of the participating pregnant females was 28.38 ± 4.79 years in a study carried out by Anjum S.¹⁹ All these all studies showed obvious-similarity with our data.

The majority of subjects reported in our set up were illiterate (n=72). As this is a tertiary care hospital, the majority of patients reported were from poor socioeconomic areas. Education was needed to obtain information. The higher the education level, the easier the information can be collected. will be received.²² Anjum S¹⁹ carried out a study in another province of Pakistan and showed that the majority of patients had education up to the secondary

Comment [SH37]: These participants characteristics were

level, which ~~was~~ is contrary to our data. A cross-sectional study conducted by Khalaf et al in Egypt reported that 34.2% of pregnant women had education up to secondary level.²³

7

Aside from schooling, profession has an impact on knowledge. Because social communication among working women boosts their knowledge, professional women will have higher knowledge than jobless women. Most of the subjects in this study were housewives. Another study by Azizah NA²² stated that most of the women in their study were educated but unemployed.

Overall in this study, respondents ~~possess~~ ~~possessed~~ average and low knowledge about overall oral health. This may be attributed to the fact that the study participants were not ~~that~~ educated. This is not surprising because the study was conducted in a tertiary care hospital of Sindh where ~~the~~ majority ~~of the~~ patients reported from interior Sindh rural areas. According to Gaffar et al²⁴, excellent knowledge is linked to a variety of sources of information about the oral health of pregnant women ~~?????~~. Oral health awareness will improve in expectant women who get proper oral health education.

Comment [SH38]: comma

Our data reported that most of the females have a good ~~working~~ knowledge about ~~the frequency of~~ brushing ~~frequency and brushing~~ habits. Even after reporting ~~Having reported~~ from poor socioeconomic areas, ~~the~~ majority of ~~the~~ patients in this study were

~~reported~~ **noted as** having good brushing habits; that is once ~~and~~ **or** twice a day, and none of ~~the patients~~ reported ~~with~~ **not** brushing habit. These findings coincide with the findings of Mahmood H²⁵ and Hashim R²⁶. Due to their level of education most of the expectant ~~women~~ **s-have had** limited knowledge about oral hygiene aids like dental floss and tongue ~~scrappers~~ **scrapers**, ~~which is obvious finding~~ ~~expected to be reported in this study~~. This knowledge about hygiene aids is in accordance with the results obtained in the **other** research done in Pakistan²⁷ and another study done in Sudan.²⁸ Another important finding in **the** current study was inadequate education **with regard to** ~~regarding~~ fluoridated toothpastes **within our reported subjects** ~~among pregnant women~~. About 83.7% participants were not aware of the significance of fluoridated toothpastes. There is evidence to show that prevention of early childhood caries is best initiated during pregnancy.

In this study only 37.3% had knowledge about nutritional implications in pregnancy. In upcoming oral health education workshops, pregnant women should be informed about the importance of proper diet for oral health as well as the treatment choices for ~~aching~~ **painful** gums and teeth.

Only 34% pregnant females stated that they ~~visit~~ **visited the** dentist ~~after~~ every six months. According to the statistics, only a small percentage of expecting moms went to the dentist. Despite cultural,

economic, and social disparities, the results were similar ~~with~~ to those reported in prior research done in both developing and industrialized nations.²⁹⁻³¹

Given the findings, it is recommended that adequate dental hygiene measures be implemented throughout pregnancy. Because the study was conducted in a hospital, the findings may not be reflective of the actual situation at the community level; hence, generalizability is also a drawback.

CONCLUSION

It was concluded that majority of patients have little or average knowledge regarding oral health in pregnancy. There is a poor link between pregnant women's oral health knowledge and their oral health practices. It is critical to provide oral health education to women during prenatal care ~~in order~~ to educate them on the significance of maintaining excellent oral health during the full pregnancy.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

REFERENCES

1. Huck O, Tenenbaum H, Davideau JL. Relationship between periodontal diseases and preterm birth: recent epidemiological and biological data. J Pregnancy 2011;164654.
2. Merno R, Chigwale S, Pope R. Obstetric stula and safe spaces: Discussions of stigmatised healthcare topics at a stula centre. Cult Health Sex. 2020;22(12):1429-38.

3. Abiola A, Olayinka A, Mathilda B, Ogunbiyi O, Modupe S, Olubunmi O. A survey of the oral health knowledge and practices of pregnant women in a Nigerian teaching hospital. *Afr J Reprod Health*. 2011;15(3):14-9.
4. Akcali A, Akcali Z, Batool F, Petit C, Huck O. Are sex steroids hormones influencing periodontal conditions? A systematic review. *Curr Oral Health Rep* 2018.
5. Sanz M, Beighton D, Curtis MA, Cury JA, Dige I, Dommisch H, et al. Role of microbial biofilms in the maintenance of oral health and in the development of dental caries and periodontal diseases. Consensus report of group 1 of the Joint EFP/ORCA workshop on the boundaries between caries and periodontal disease. *J Clin Periodontol* 2017;44:5-11.
6. Nuriel-Ohayon M, Neuman H, Koren O. Microbial changes during pregnancy, birth, and infancy. *Frontiers Microbiol* 2016;7:1031.
7. Chaitra TR, Wagh S, Sultan S, Chaudhary S, Manuja N, Sinha AA. Knowledge, attitude and practice of oral health and adverse pregnancy outcomes among rural and urban pregnant women of Moradabad, Uttar Pradesh, India. *J Interdisciplin Dent*. 2018;8(1):5-12.
8. Sinha S, Bhat PR, Govekar VV, Trasad VA, Acharya AB. Awareness and knowledge regarding maternal periodontal status and associated pregnancy outcomes among the gynecologists of Hubli-Dharwad. *J Indian Soc Periodontol*. 2020;24(4):375-78.
9. Avula H, Mishra A, Arora N, Avula J. KAP assessment of oral health and adverse pregnancy outcomes among pregnant

- women in Hyderabad, India. *Oral Health Prev Dent.* 2013;11(3):261-70.
10. Bamanikar S, Kee LK. Knowledge, attitude and practice of oral and dental healthcare in pregnant women. *Oman Med J.* 2013;28(4): 288–91.
 11. González-Jaranay M, Téllez L, Roa-López A, Gómez-Moreno G, Moreu G. Periodontal status during pregnancy and postpartum. *PLoS One.* 2017 May 19;12(5):e0178234.
 12. Wu M, Chen SW, Jiang SY. Relationship between gingival inflammation and pregnancy. *Mediators Inflamm.* 2015;2015:623427.
 13. Guggenheimer J, Moore PA. Xerostomia: etiology, recognition and treatment. *J Am Dent Assoc.* 2003 Jan;134(1):61-9
 14. Bilińska M, Sokalski J. Ciężowe zapalenie dziąseł ze szczególnym uwzględnieniem guzów ciążyowych [Pregnancy gingivitis and tumor gravidarum]. *Ginekol Pol.* 2016;87(4):310-3.
 15. Silk H, Douglass AB, Douglass JM, Silk L. Oral health during pregnancy. *Am Fam Physician.* 2008 Apr 15;77(8):1139-44.
 16. Steinberg BJ, Hilton IV, Iida H, Samelson R. Oral health and dental care during pregnancy. *Dent Clin North Am.* 2013 Apr;57(2):195-210.
 17. Teshome A, Yitayeh A. Relationship between periodontal

- disease and preterm low birth weight: systematic review. *Pan Afr Med J.* 2016 Jul 12;24:215-217.
18. Timoth e P, Eke PI, Presson SM, Malvitz DM. Dental care use among pregnant women in the United States reported in 1999 and 2002. *Prev Chronic Dis.* 2005 Jan;2(1):A10.
 19. Anjum, A., Azam, N., Mughal, F.A.R., Huma, S., Jabeen, W. Oral Health Status Among Pregnant Women Attending Gynae OPD of Tertiary Care Hospital in Rawalpindi. *Journal of Rawalpindi Medical College.* 30 Jun. 2021; 25(2): 229- 233.
 20. Nogueira BML, Nogueira BCL, de Souza Fonseca RR, Brandao GAM, de Alencar Menezes TO, dos Santos Tembra DP. Knowledge and attitudes of pregnant women about oral health. *Int J Odontostomat.* 2016;10(2):297-302.
 21. Brohi PZ, Parveen S, Wassan IB, Rahoojo A, Surwaich A. Oral health status and knowledge of pregnant women attending antenatal clinics of Bilawal Medical College Hospital Kotri at LUMHS. *J Soc Obstet Gynaecol Pak.* 2020;Vol 10(2):125-129.
 22. Azizah NA, Ramadhani MN, Suwargiani AA, Susilawati S. Correlation of knowledge and attitude of pregnant women towards their oral health practice. *Padjadjaran Journal of Dentistry.* 2021; 33(1): 39-48.
 23. Khalaf SA, Osman SR, Abbas AM. Knowledge , attitude and practice of oral healthcare among pregnant women in Assiut,

Egypt. 2018;(March). doi:10.18203/2394-6040.ijcmph20180743

24. Gaffar BO, El Tantawi M, Al-Ansari A, AlAgl AS. Association between oral health knowledge and practices of Saudi pregnant women in Dammam, Saudi Arabia. *East Mediterr Health J.* 2016;22(6):411-16.
25. Mahmood H, Saeed U, Usmani A. Assessment of the oral hygiene practices in pregnant females and their knowledge regarding effect of periodontitis on pregnancy. *Pak Oral Dent J* 2022; 42(1):25-29.
26. Hashim R. Self-reported oral health, oral hygiene habits and dental service utilization among pregnant women in United Arab Emirates. *Int. J. Dent. Hyg.* 2012;10(2):142-46
27. Ishaq Z, Rasul F, Ahmaed A, Tanveer S. Knowledge attitude and practice of pregnant females regarding oral health. *PJMHS* 2018;12(4):1556-59.
28. Ibrahim HM El-Mahdi, Mudawi A.M, Ghandour I.A. Oral health status, knowledge and practice among pregnant women attending Omdurman maternity hospital, Sudan. *EMHJ.* 2016;22(11):802-09
29. Dinas K, Achyropoulos V, Hatzipantelis E, Mavromatidis G, Zepiridis L, Theodoridis T, Dovas D, Tantanasis T, Goutzioulis F, Bontis J. Pregnancy and oral health: utilisation of dental services

during pregnancy in northern Greece. *Acta obstetricia et gynecologica Scandinavica*. 2007;86(8):938- 944.

30. Marchi KS, Fisher-Owens SA, Weintraub JA, Yu Z, Braveman PA. Most pregnant women in California do not receive dental care: findings from a population-based study. *Public health reports*. 2010;125(6):831-842.

31. Gambhir RS, Nirola A, Gupta T, Sekhon TS, Anand S. Oral health knowledge and awareness among pregnant women in India: A systematic review. *Journal of Indian Society of Periodontology*. 2015;19(6):612-617.

UNDER PEER REVIEW