*Journal of Pharmaceutical Research International*

***34(35A): 1-7, 2022; Article no.JPRI.86600***
***ISSN: 2456-9119***
*(Past name: British Journal of Pharmaceutical Research, Past ISSN: 2231-2919, NLM ID: 101631759)*

# Knowledge and Practices of Oral Health Status among Pregnant Women Attending Liaquat University Hospital Jamshoro

**Ifat Balouch [a], Erum Jahan [b], Rehmatullah Kandhro [c], Zubeda Bhutto [d], Batool Bibi [e], Reema Akhtiar [f] and Salman Shams [g*]**

*[a] Gynecology and Obstetrics Department, Bilawal Medical College Hospital Kotri, Sindh, Pakistan.*
*[b] Gynecology and Obstetrics Department, Karachi Medical and Dental College, Karachi, Pakistan.*
*[c] Community Dentistry Department, Faculty of Dentistry, Liaquat University of Medical and Health Sciences, Pakistan.*
*[d] Dow Institute of Nursing and Midwifery, Dow University of Health Sciences, Karachi Pakistan.*
*[e] Department of Periodontology, Dr Ishrat Ul Ebad Khan Institute of Oral Health Sciences, Dow University of Health Sciences, Karachi Pakistan.*
*[f] Gynecology and Obstetrics Department, Bilawal Medical College, C. D. F Hospital Hyderabad, Pakistan.*
*[g] Department of Oral Diagnosis, Faculty of Dentistry, Liaquat University of Medical and Health Sciences, Pakistan.*

***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

***Article Information***

DOI: 10.9734/JPRI/2022/v34i35A36158

**Open Peer Review History:**
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/86600

***Original Research Article***

***Received 14 February 2022***
***Accepted 23 April 2022***
***Published 27 April 2022***

## 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.
**Objective:** To assess the knowledge and practices of oral health in pregnant women attending Oral diagnosis outpatient department OPD of Liaquat university hospital Jamshoro.
**Subject and Methods:** A total of 150 patients were included in the study. Data was collected by providing questionnaire to pregnant women who attended OPD for their antenatal check up.

**Corresponding author: E-mail: Salman_omfs@hotmail.com;*

Sociedemographic findings, questions related to participant's knowledge regarding oral health and practices adopted were recorded.
**Results:** Most of the patients, 49.3% were in age range of 26 to 35 years with the majority of them being housewives. A total of 48% were illiterate followed by 24.6% who had only just primary education. Around 51.3% have the good habit of brushing twice a day. Only 37.3% had knowledge about nutritional implications in pregnancy, and 34% visit dentist once in six months.
**Conclusion:** The majority of patients has little or average knowledge regarding oral health in pregnancy.

*Keywords: Pregnancy; oral health; knowledge; practices.*

## 1. 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 them more vulnerable to oral illnesses [3].

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

Caries and periodontal diseases are infectious diseases caused by oral plaque biofilms, which include 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, these are Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans, two well-known periodontal pathogens [6].

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 increase their infant's caries susceptibility by spreading cariogenic bacteria 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].

Proper diet and a healthy 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].

Pregnancy gingivitis, which affects 60 percent to 75 % of women [11,12] xerostomia, which affects 15 to 18 percent of women [13], pregnancy epulis, which affects about 5% of women [14], dental erosion, which affects 70 to 80% of women [15] and halitosis, which affects around 13 percent of women [16] are the greatest common oral changes that occur during gestation. Similarly, dietary changes have been linked to an increased risk of acquiring carious lesions or a progression of those that are already existing [17].

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.

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.

## 2. 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 approve by ethical review committee LUMHS. The data was collected by providing questionnaire to pregnant women who attended OPD for antenatal check up and give consent to fill this questionnaire. The sampling technique was purposive sampling technique done on basis of some predetermined knowledge.

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

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

Third part contained questions about oral care practices of respondents. 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".

Inclusion criteria of this study was pregnant women, give consent to participate, can read and write.
The data was analyzed using SPSS version 22.

## 3. RESULTS

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

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.

**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** | 72 | 48% |
| Illiterate | 37 | 24.66% |
| Primary Education | 21 | 14% |
| Matriculation | 14 | 9.33% |
| Intermediate | 05 | 3.33% |
| Graduate | 01 | 0.66% |
| Masters | | |
| **Occupation** | | |
| Working Women | 17 | 11.33% |
| Housewife | 133 | 88.665 |
| **Pregnancy Trimester** | 38 | 25.33% |
| 1st | 72 | 48% |
| 2nd | 40 | 26.66% |
| 3rd | | |

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

## 4. 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].

**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% |

Most of the patients in this current study were in age group of 26 to 35 years. These respondent's characteristics was similar to the research conducted by Nogueira et al. [20], which also had a predominantly young group of pregnant women as the research respondents. A study conducted by Brohi ZA [21] stated that most of the women 47.5% were in the age group of 26-35 years. The mean age of participating pregnant females was 28.38 ± 4.79 years in a study carried out by Anjum S. [19]. All these studies showed 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 from poor socioeconomic areas. The higher the education level, the easier information can be collected [22] Anjum S [19] carried out a study in another province of Pakistan showed majority patients had education up to secondary level, which 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].

,

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 NA [22] stated that most of the women in their study were educated but unemployed.

Overall, in this study, respondents possess 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 majority patients reported from interior Sindh rural areas. According to Gaffar et al. [24] 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.

Our data reported that most of the females have a good working knowledge about the frequency of brushing. Having reported from poor socioeconomic areas, the majority ofthe patients in this study were noted as having good brushing habits; that is once or twice a day, and none of the patients reported not brushing. These findings coincide with the findings of Mahmood H [25] and Hashim R [26]. Due to their level of education most of the expectant women had limited knowledge about oral hygiene aids like dental floss and tongue scrapers. This knowledge about hygiene aids is in accordance with the results obtained in the other research done in Pakistan [27] and another study done in Sudan [28].

Another important finding in the current study was inadequate education with regard to fluoridated toothpastes within our reported subjects. 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 gums and teeth.

Only 34% pregnant females stated that they 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 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.

## 5. 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 to educate them on the significance of maintaining excellent oral health during the full pregnancy.

## DISCLAIMER

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.

## ETHICAL APPROVAL

This study was approve by ethical review committee LUMHS.

## CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## 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 in- fluencing 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 devel- opment of dental caries and periodontal diseases. Consensus report of group 1 of the Joint EFP/ORCA workshop on the boundaries between car- ies and periodontal disease. J Clin Periodontol. 2017;44:5–11.
6. Nuriel-Ohayon M, Neuman H, Koren O. Microbial changes during preg- nancy, 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 SocPeriodontol. 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;12(5): e0178234.
12. Wu M, Chen SW, Jiang SY. Relationship between gingival inflammation and pregnancy. Mediators Inflamm. 2015; 623427.
13. Guggenheimer J, Moore PA. Xerostomia: etiology, recognition and treatment. J Am Dent Assoc. 2003;134(1):61-9.
14. Bilińska M, Sokalski J. Ciążowe zapalenie dziąseł ze szczególnym uwzględnieniem guzów ciążowych [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;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;24:215-217.
18. Timothé 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 ;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;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. DOI:10.18203/2394-6040.ijcmph20180 743
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.



*Peer-review history:*
*The peer review history for this paper can be accessed here:*
*https://www.sdiarticle5.com/review-history/86600*