

Assessment of Periodontal Status and Oral Health Related Quality of Life Among Pregnant Women

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Abstract

Objective: To evaluate periodontal status of pregnant ladies and oral health related quality of life and its impact on everyday life.

Methodology: This cross-sectional survey was conducted in Federal Govt Services Hospital (PGMI) Islamabad from March- April 2024. A total of 415 pregnant women of 18-49 years who came for ante-natal care were recruited. Oral-clinical assessment of these patients was done using Oral health impact profile questionnaire (OHIP-14). Desired sample size was achieved via simple random sampling. For assessment of oral health status of population, general indicator used was Community periodontal index treatment need (CPITN) score. Each individual was clinically assessed for CPITN index. Two Dental surgeons were trained for data collection and monitored by the researcher.

Results: Only 5.06% of pregnant women had healthy gums, one-third of the participants showed bleeding on probing, forty percent women had pocket depth between 3.5-5.5mm, while 14.7% women had plaque deposits but no pocket formation. Chi-Square test revealed statistically significant association between OHIP-14 score and CPITN score (p-value 0.000), while there was insignificant association between OHIP-14 score with age of the participants (p-value 0.288).

Conclusion: Poor oral health especially periodontal illness can have a noteworthy adverse impact on quality of life throughout pregnancy. Policies & programs ought to be executed, and information on dental hygiene must be upgraded during pregnancy for betterment of oral hygiene.

Key Words: CPITN, Dental Health, Periodontitis, Pregnancy, Quality of Life.

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Introduction

Oral health and general health can't be separated from one another, as they are integral and essential part of good quality of life.^{1,2} Adequate and appropriate oral health is key component of economic, social, and personal growth. Less costly, most innovative, and profitable way to attain oral health-related good health is to promote oral health by focusing different population within the communities.^{3,4} Dental patients may have complaint of pain, hypersensitivity and

swelling.⁵⁻⁷

Globally, 40% of pregnant ladies 'suffer from periodontal illness and 50% experience dental pain.⁸ Research findings indicate that a woman's body functions, perceptions, and comprehension of her health decline throughout the latter trimester of pregnancy in comparison to the pre-pregnancy period.⁹ Oral health care professionals, doctors, and

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policymakers who work with children and pregnant women have been more interested in the importance of oral and dental health in pregnant women throughout the past ten years.³

Women who are pregnant and come from low-socioeconomic backgrounds are more likely to have psychological and behavioral issues, so they won't be able to pay for their dental treatment and take care of their health as a whole¹⁰, as socio-economic status is also predictor of wide range of outcomes over course of a person's life, including physical and psychological health.^{11,12}

An adverse pregnancy outcome such as low birth weight & premature birth is strongly correlated with periodontal infection.¹³ Throughout being pregnant, dealing with oral wellbeing properly is an exceptionally pivotal, however frequently overlooked component.¹⁴ Dentists can treat pregnant ladies in 2nd trimester as it is considered safe. Throughout pregnancy, proper safety measures should be taken when dealing with patients.¹⁵

The community periodontal index of treatment needs (CPITN) probe was developed by the World Health Organization (WHO) in 1978 to quantify pocket depth and identify the calculus sub-gingivally. The CPITN index was first released in 1982 and is a screening tool for determining the potential and real issues associated with periodontal maladies in the community and in individuals. Commonly treatable diseases such as periodontal pockets, gingival inflammation, dental calculus, and other plaque-retentive factors are recorded and measured by the CPITN.¹⁶

Subclinical mucosal redness to severe cases characterized by gum's bleeding, abscess formation and tissue discomfort, are all signs of pregnancy gingivitis.¹⁷ In well-developed countries, this illness might affect 30%-100% of pregnant ladies.¹⁸ Dietary imbalances & hormones during pregnancy alter inflammatory mediators and immune reactivity, which has been demonstrated to be source of oral cavity-related maladies, mainly gingival & periodontal infections.^{19,20} The objective of study was to evaluate periodontal status of pregnant ladies and oral health quality of life and its impact on everyday life.

Methodology

This cross-sectional survey was conducted in Federal Govt Services Hospital (PGMI) Islamabad from March-

April 2024 after approval from ethical Review Board. A total of 415 interviews were conducted after taking informed written consent, to check oral health related quality of life among pregnant women. Study population was pregnant women of 18-49 years who came for ante-natal care visit in this public hospital. Oral-clinical assessment of these patients was done using Oral health impact profile questionnaire (OHIP-14).

Sample size calculation was done by using formula, $n = z^2 p (1-p) / d^2$. P is prevalence of oral ailments, 50% taken. Where d is a margin of error being 5% (0.5) and z is statistics of 95% CI (1.96). Sample size came to be 384, adding approximately five percent inflated for non-response, so our final sample size was 415. Desired sample size was achieved via simple random sampling. For assessment of oral health status of population, general indicator used was Community periodontal index treatment need (CPITN) score. Each individual was clinically assessed for CPITN index.

Two Dental surgeons were trained for data collection and monitored by the researcher. Basic required items for assessment purpose were a dental unit with overhead light, flat mouth mirror and CPITN probe. SPSS version 21 was used for data entry and analysis. Results were presented in form of tables and figure by Percentages & frequencies. Chi-square test was applied to determine probable association b/w variables, with considering a p-value of 0.05 as significant.

Results

A total of 415 pregnant women were included in this study. Mean age of study population was 29.901 ± 9.350 . Among study participants, age group of 18-26 years was most common with 47.7%, 27-35 years old women were 25.3% and remaining 36-49 years old women were 27.0%, as shown by Table I.

Table I: Socio demographics of study population.

	Variables	N	%
Age	18-26 years	198	47.7%
	27-35 years	105	25.3%
	36 & above	112	27%

Out of total participants, only 5.06% of pregnant women had healthy gums, one-third of the participants showed bleeding on probing, forty percent women had pocket depth between 3.5-5.5mm, while 14.7% women had plaque deposits but no pocket formation. The CPITN score for the participants is represented Figure 1.

Table II: OHIP Score of study population.

OHIP-14	Never 0 n(%)	Hardly ever 1 n(%)	Occasionally 2 n(%)	Fairly often 3 n(%)	Very often 4 n(%)
Trouble in pronunciation	190(45.8%)	42(10.1%)	163(39.3%)	21(5.1%)	20(4.8%)
Sense of taste	232(55.9%)	42(10.1%)	120(28.9%)	21(5.1%)	1(2%)
Painful aching	42(10.1%)	84(20.2%)	105(25.3%)	142(34.2%)	42(10.1%)
Eating	21(5.1%)	21(5.1%)	310(74.7%)	62(14.9%)	1(2%)
Self-conscious	210(50.6%)	39(9.4%)	43(10.4%)	84(20.2%)	39(9.4%)
Felt tense	21(5.1%)	84(20.2%)	205(49.4%)	84(20.2%)	21(5.1%)
Unsatisfactory diet	147(35.4%)	144(34.7%)	102(24.6%)	22(5.3%)	39(9.4%)
Interrupted meal	228(54.9%)	62(14.9%)	103(24.8%)	22(5.3%)	1(2%)
Relax	84(20.2%)	81(19.5%)	229(55.2%)	21(5.1%)	20(4.8%)
Embarrassed	126(30.4%)	63(15.2%)	123(29.6%)	102(24.6%)	1(2%)
Irritable	270(65.1%)	21(5.1%)	40(9.6%)	63(15.2%)	21(5.1%)
Usual work	250(60.2%)	21(5.1%)	124(29.9%)	20(4.8%)	1(2%)
Less satisfied	189(45.5%)	81(19.5%)	81(19.5%)	62(14.9%)	2 (1.7%)
Unable to work	372(89.6%)	21(5.1%)	20(9.8%)	0 (0.0%)	0 (0.0%)

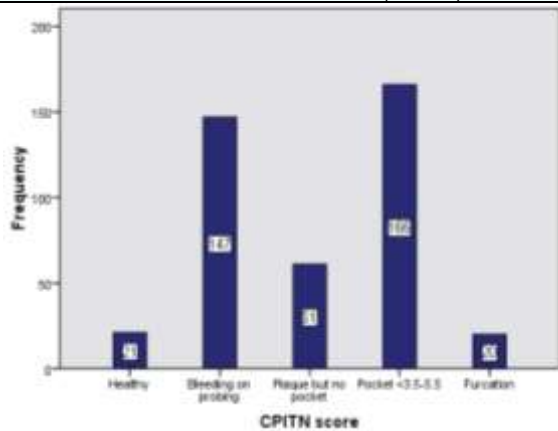


Figure 1: CPITN Score of study participants.

The Oral Health Impact Profile (OHIP-14) was used to assess impact that oral/dental health issues can have on one's life, giving a broad extent of self-reported dysfunction, discomfort and disability attributed to oral conditions. Final scores thus range from 0-56 points. About 74.7% participant were occasionally feeling pain while eating due to problem with their teeth or mouth. Almost 55.2% respond were occasionally not feeling relax due to problem with their teeth or mouth. Half (49.4%) of the study participants were tensed. (Table II). Chi-Square test revealed statistically insignificant association between OHIP-14 score with age of the participants (p-value 0.288) table III, while there was statistically significant association between OHIP-14 score and CPITN score (p-value 0.000), Table IV.

Table III: Relationship of OHIP-14 score with age of the participants.

Age	OHIP score		P value
	Good	Poor	
18-26 years	108	90	0.288
27-35 years	48	57	
36-49 years	54	58	
Total	210	205	415

Table IV: Relationship of OHIP-14 score with CPITN score.

OHIP score	CPITN score		P value
	Good	Poor	
Healthy	21	00	0.000
Bleeding on probing	136	11	
Plaque but no pocket	39	22	
Pocket < 3.5-5.5mm	14	152	
Furcation	00	20	
Total	210	205	

Discussion

In pregnancy, preventative care of one's oral cavity ought to be increased. However, the effect of oral problems on personal quality of life proposes a more focused and more noteworthy prerequisite for oral-healthcare activities in this modern era.¹⁴

Regular checkups and oral cavity examination during pre-natal care is pivotal, and it is also well understood that previously present maladies may intensified by the hormonal changes during pregnancy.^{19,20} Medications have to be prescribed for some dental patients as well^{21,22}. Dental health status is related with the oral health related quality of life (OHRQoL) and has imperative implications for dental research and clinical practice.²³

The mean of OHIP-14 in this survey was 10.6, which is more than that (4.31) of another research.²⁴ It is worse than that of USA's research.²⁵ In this survey, three-fourth of subjects reported uncomfortably to eat occasionally, half of the subjects felt tense, one-fifth of the subjects felt that life in general was less satisfying owing to problems with mouth or teeth, which is comparable to another study.²⁶

Current theories of health propose that concept of oral health should be defined in a holistic manner, considering not only the conditions of oral cavity but

also its broader effects on overall physical, social and psychological wellbeing. The dental department and all dental fraternity could contribute greatly to improve quality of life.²⁷ The oral cavity problems and pains impact the overall well-being of patient during pregnancy.⁹

Several pregnancies, missing teeth, growing age, treatment need & dental prosthesis were associated with sub-ordinate influence on women's quality of life. Pregnant woman is at amplified possibility of oral disease because of fluctuations in her practices, such as consuming more sweet diet, lack of cleansing her teeth due to increase in GIT problems, and/or aggressive secretions due to pregnancy that intensification the inflammatory response.²⁸ Child's quality of life is directly impacted by the quality of life & health of mother.²⁹

Chi-Square test in this research revealed statistically insignificant association between OHIP-14 score with age of the participants (p-value 0.288), which is in accordance with other researches^{24,30}. Five percent patients of this study reported healthy periodontium, forty percent subjects showed code 3 i.e pocket depth of 3.5-5.5mm, which is more than that recorded by another investigator. There was statistically significant association between OHIP-14 score and CPITN score (p-value 0.000) in this survey, which is synchronized with another research.³¹ This is in harmony with result reported in another investigation where there was an association between the OHIP-14 and need for complex periodontal treatment ($p < 0.05$).³²

In order to provide patients with the best possible care, it is essential to utilize the oral health attitude to identify a person's explicit needs and to rule out any subjective indications of oral health that may be necessary.³³ The dental personnel should stress on health promotion and education.³⁴ We accentuate importance of public health measures/initiatives in addition to adopting non-invasive & safe treatment modalities.^{35,36}

Pregnant women should be given priority in health services in order to treat & restore their oral health, which will improve both their children's quality of life and oral health.²⁸ National and provincial health promotion programs should be planned to avert and treat oral health ailments.³⁷

Limitations: Small sample size was main shortcoming of this research. As this was a cross-sectional study, it might have resulted in biases, especially recall biases or discrimination based on social contacts.

Conclusion

Poor oral health especially periodontal illness can have a noteworthy adverse impact on quality of life throughout pregnancy. Policies & programs ought to be executed, and information on dental hygiene must be upgraded during pregnancy for betterment of oral hygiene. It should be ensured that pregnant ladies receive required treatment & improvements in oral health.

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