

Assessment of Perceived Stress and Oral Health Status among Pregnant Women Reporting In A City Hospital – A

Cross-Sectional Analytical Study

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Abstract

Introduction: Pregnancy is recognized as a time of great physiological, social and psychological transformation which has been associated with significant emotional distress for many women.

Aims: To assess perceived stress and oral health status among pregnant women.

Settings and Design: A cross-sectional analytical study

Methods and Material: Data was collected from 200 pregnant women aged 20-40 years who visited the hospital. Assessment of oral health status of the study participants was assessed using WHO (World Health

Assessment) 1997 form and pregnancy-specific stress was assessed with Cohen perceived stress scale.

Statistical analysis used: Statistical analysis was done using SPSS (Statistical package for social science) v 21.0. Pearson's correlation coefficient was done between perceived stress and oral health status.

Results: There was positive co-relation found between stress, dental caries ($r = 0.710$) and periodontal disease ($r = 0.8$).

Conclusions: Since pregnant women are considered as priority group there is a need for integrating their oral health as a part of antenatal and primary health care.

Keywords: Cohen perceived stress scale, pregnant women, Questionnaire, WHO oral health assessment form.

Key messages: Prenatal and perinatal oral health along with infant oral health is one of the foundations upon which preventive education and dental care must be built to enhance the opportunity for a child to have a lifetime free from preventable oral diseases.

Table 1: Distribution of study participants according to response for questions of Cohen perceived stress

Question	Responses	n (%)	p value
Question 1: In the past month, how often have you been upset because of something that happened unexpectedly?	Never	0 (0)	.228
	Almost never	57 (28.5)	
	Sometimes	62 (31)	
	Fairly often	49 (24.5)	
	Very often	32 (16)	
Question 2: In the past month, how often have you felt unable to control the important things in your life?	Never	0 (0)	<0.05*
	Almost never	34 (17)	
	Sometimes	95 (47.5)	
	Fairly often	54 (27)	
	Very often	17 (8.5)	
Question 3: In the past month, how often have you felt nervous or stressed?	Never	0 (0)	<0.05*
	Almost never	59 (29.5)	
	Sometimes	43 (21.5)	
	Fairly often	57 (28.5)	
	Very often	41 (20.5)	
Question 4: In the past month, how often have you felt confident about your ability to	Never	0 (0)	<0.05*
	Almost never	54 (27)	

handle personal problems?	Sometimes	80 (40)	
	Fairly often	52 (26)	
	Very often	14 (7)	
Question 5: In the past month, how often have you felt that things were going your way?	Never	0 (0)	<0.05*
	Almost never	54 (27)	
	Sometimes	80 (40)	
	Fairly often	52 (26)	
	Very often	14 (7)	
Question 6: In the past month, how often have you found that you could not cope with all the things you had to do?	Never	0 (0)	<0.05*
	Almost never	37 (18.5)	
	Sometimes	57 (28.5)	
	Fairly often	64 (32)	
	Very often	42 (21)	
Question 7: In the past month, how often have you been able to control irritations in your life?	Never	0 (0)	<0.05*
	Almost never	32 (16)	
	Sometimes	110 (55)	
	Fairly often	56 (28)	
	Very often	2 (1)	
Question 8: In the past month, how often have you felt that you were on top of things?	Never	0 (0)	<0.05*
	Almost never	59 (29.5)	
	Sometimes	46 (23)	
	Fairly often	69 (34.5)	
	Very often	26 (13)	

Question 9: In the past month, how often have you been angry because of things that happened that were outside of your control?	Never	0 (0)	<0.05*
	Almost never	33 (16.5)	
	Sometimes	97 (48.5)	
	Fairly often	54 (27)	
	Very often	16 (8)	
Question 10: In the past month, how often have you felt that difficulties were piling up so high that you could not overcome them?	Never	0 (0)	<0.05*
	Almost never	52 (26)	
	Sometimes	72 (36)	
	Fairly often	61 (30.5)	
	Very often	15 (7.5)	

(* p value <0.05 statistically significant)

Table 2: Co-relation between Cohen perceived stress and Decayed Missing Filled Teeth index, Community Periodontal Index, Loss of Attachment

	Decayed Missing Filled Teeth index	Community Periodontal Index	Loss of Attachment
Cohen perceived stress	r = .710** p = .003	r = .800* p = .035	r = .054 p = .425

(r – Co-relation co-efficient, * p value <0.05 statistically significant, <0.01** Highly Statistically)

Discussion

The health and disease care process for the oral component is a complex association of factors that interact in various ways among different social groups and these different groups within the same society have different disease profiles, categories and incidence.

There may be many reasons for maternal stress (perceived stress) such as, preterm birth, risk of gestational hypertension, adverse reproductive health and behavioral outcomes such as high parity, unwanted pregnancy, unsafe abortion, infertility and pregnancy complications. Among women belonging to low socioeconomic group, maternal depression may be related to women’s exposure to several depression-related risk factors, including poverty, low social support and domestic violence. In this study, Cohen perceived stress scale shows positive co-relation with DMFT and periodontal disease which was similar to study conducted by Goyal N *et al* (2017)⁷ in which pregnant women with high stress had more mean DMFS and more periodontal disease. It may be due to detrimental emotional eating habits leading to frequent snacking and more intake of sugar containing diet. Consumption of these foods or beverages in between meals may promote dental caries. An additional reason can be due to the impaired performance of self-care habits (frequency of brushing teeth) leading to poor oral hygiene creating favorable environment for bacteria. It can also be due to the reduced salivary secretion leading to decreased clearance of cariogenic bacteria as; subjective oral dryness and unstimulated salivary flow were significantly associated with perceived stress affecting hard tooth structure leading to dental decay.^[7] Also negligence to self-health care because she has to provide attention to the family first.

In this study, we used Cohen perceived stress scale, which helps in evaluating perceived general stress in the past one month. In this study, mean of Cohen perceived stress scale was 22.68 (±1.368) which was high stress. According to, Cohen perceived stress high psychological stress is associated with high blood pressure, higher Body Mass Index, larger waist to hip ratio, shorter telomere length, higher cortisol levels, suppressed immune function,

decreased sleep, and increased alcohol consumption. These are all important risk factors for cardiovascular disease. In this study, 47.5% participants were sometimes unable to control the important things in their life whereas study conducted by Iranzad I *et al* (2014)^[16] 39.5% participants were sometimes unable to control things. It could be because they were unable to cope up with the situation. In this study, 32% participants were fairly often experienced that they were not coping up with situations was in accordance with study conducted by Iranzad I *et al* (2014)^[16] 37.8% participants were almost never experience. In this study, 55% participants were sometimes able to control irritations in their life whereas study conducted by Iranzad I *et al* (2014)^[16] 37.7% participants were never almost able to control irritations. In this study, 34.5 % participants fairly often felt that they were on top of things whereas study conducted by Iranzad I *et al* (2014)^[16] 60% participants felt very often. In this study, 48.5% participants sometimes were angry because of things that happened that were outside of their control in accordance with study conducted by Iranzad I *et al* (2014)^[16] 44% participants sometimes felt angry. In this study, 36% participants sometimes felt that difficulties were high and they could not overcome them in accordance with study conducted by Iranzad I *et al* (2014)^[16] 40% participants sometimes felt difficulties.

Maternal stresses during pregnancy leads to anxiety and mental problems in their infant in the future. Furthermore, stressful pregnancy causes complications for the foetus. Chemical substances released from mother's brain in response to stress have direct effects on the developing fetal brain. This effects maybe more at the beginning of pregnancy in which the protective barrier between mother and foetus has not been completed yet.^[16]

The limitations of this study was that the stress based on the perceived stress scale (PSS) was measure and not by a

psychologist or mental health care specialist. As a quantitative study, we could not immerse in depth of women's feeling about their stress and their quality of life. Thus, we offer further research with a qualitative approach (face to face interview, focus group, and open-ended questionnaire, semi-structured and in-depth interview) to tackle this hassle.

There is a need to improve the oral health knowledge and oral health care habits of pregnant women by making oral health an integral part of antenatal and primary health care in order to prevent oral diseases.

Prenatal and perinatal oral health along with infant oral health is one of the foundations upon which preventive education and dental care must be built to enhance the opportunity for a child to have a lifetime free from preventable oral diseases.

Conclusion

Pregnancy is a very crucial period not only for mother or baby but for the entire family. Pregnant women showed mostly had oral mucosal disorder like lichen planus. Cohen perceived stress was positively correlated with DMFT index and periodontal diseases. It can be concluded that there is a co- relation between perceived stress and dental disorder.

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