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The Impact of Mother-Infant Bonding on Dental Caries Severity in the Postpartum Period

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Abstract: ***Background: Mother-infant bonding disorder is a psychological disturbance that affects some mothers postpartum with variety of kinds such as angry, rejection, anxiety, and abuse. As psychological disorders have pernicious long-term effects, maternal bonding disorder may affect the oral health status. Aim of the study: The current study was designed to evaluate the impact of maternal bonding status in relation to caries severity of the mothers postpartum. Materials and Methods: Mothers in the postpartum period aged 20-35 were subjected to postpartum Bonding Questionnaire. Caries experience was recorded according to (DMFS) index, and caries severity according to Manjie et al., (1989).Results: The mean value of DS, MS, FS, DMFS, and DMFT was higher among disordered mothers. Results regarding caries severity showed that the advanced grades (D_3 and D_4) were higher among the disordered mothers. Conclusion: Disorder of mother-infant relationship could influence the caries experience and severity negatively.***

Keywords: Caries, Mother-infant bonding, maternal bonding disorder

1. Introduction

Bonding refers to the emotion and affection that the mother expresses in relation to her infant.[1] This bond aids in the advancement of social behavior and psychological well-being.[2]Previously, Kumar [3] was one of the earliest investigators to give the attention on the behaviors of the mothers with their infants and children, the researcher observed about fourty-four mothers who had failed to sense love feelings, warmth and tenderness with their infants, and occasionally had negative attitude like hurting or feel revulsion towards their own infants. This maternal response is referred to as "maternal bonding disorder", as the process of giving birth and motherhood may be accompanied with challenge to the mother such as trauma, sleep deficiency, breastfeeding, difficulties in social relationships adaptation, and insulation.Maternal bond is an essential step after delivery [4], and initiated once pregnancy is recognized.[5] The bond is carried on through childhood, afterwards this connection is established and is considered as a center of safety for the child and give the child the confident to explore the life and return back to the safe environment.[6]Many self-assessed questionnaires have been evolved to evaluate the bonding disorder, however the postpartum bonding questionnaire (PBQ) [7] is a self-reported questionnaire that was developed by group at the Open university and Birmingham universityand has been largely investigated, uncomplicated to be applied, and many studies supported its validity and reliability.[8,9]

Dental caries is the disintegration of the dense tissues of the tooth (enamel, dentin, and cementum) due to acidity production by the action of microorganism on tooth surface, supposed that "It is an infectious transmissible preventable disease in which several elements affect its formation and development". [10] Weintraub et al. [11] reported high percentage of untreated dental caries among women after parturition that couldn't be identified correctly by the mothers regardless the geographic location and attitude of dental cleaning. Previously, it was concluded that impaired psychological factors would decrease an individual's propensity to follow health-promoting behaviors. [12,13] Kebede et al [14] suggested that individuals with psychological disorders were more prone to poor caries status, that is due to variety of causes such as self-neglect, the kind and intensity of the psychological status, decrease in the ability to understand the complications of poor oral health, bad care of oral hygiene, and irrational fear from dental treatment.[15-17]

2. Materials and Methods

The total sample consisted of 100 mothers aged 20-35years. The mothers were informed about the aim of the study and were freely allowed to be subjected to the examination. Informed consent and ethical approval had been obtained. The mothers were selected and examined in health centers of Baghdad city (Karkh Sector).Mothers who were on contraceptive pills or other medications, pregnancy, smoking, and systemic disease were excluded from the study.

The Postpartum Bonding Questionnaire was used to assess mother-infant bonding disturbances. The PBQ has 25 statements, each followed by six alternative responses ranging from 'always' to 'never'. Positive responses, such as ''I enjoy playing with my baby'', are scored from zero ('always') to 5 ('never'). Negative responses, such as ''I am afraid of my baby'', are scored from 5 ('always') to zero ('never'). A high score indicated pathology. The questionnaire has 4 scales: scale 1 (general factor), scale 2 (rejection & pathological anger), scale 3 (anxiety about the infant), scale 4 (incipient abuse).[18]In the present study, a total score of 19 achieved the maximum split between normal mothers and those with some kind of disorder. The questionnaire was translated to Arabic language and prepared to be used in Iraq. The mothers who attended the health centers were asked to complete all items of the Postpartum Bonding Questionnaire by themselves without discussing the answers with others.

Oral examinations were carried out under standardized conditions according to the basic methods of oral health surveys of World Health Organization (WHO, 1997). [19] The dental caries of the mother was recorded using mouth mirror and dental explorer according to decayed, missing, filled index (DMFS). The diagnosis of dental caries was carried out according to the criteria of Manjie et al.20 This allows recording decayed lesion by severity.

3. Results

Caries experience for normal and disordered mothers are illustrated in table (1). Results shows that (DMFS) mean value was statistically significantly higher among disordered mother concerning (DMFS)($p<0.05$) and highly significant regarding (FS) component($p<0.01$). The data also demonstrates that mean value of (DS) and (MS) was higher among the disordered mother, however the values weren't significant statistically ($p>0.05$), the same results were relevant to the mean value of (DMFT).

Table 1: Dental caries experience (DMFS, DMFT, DS, MS, FS) in relation to mother-infant bonding status.

Variables	*Disordered Mothers*			*Normal Mothers*				
	Mean	*±SD*	*SE*	*Mean*	*±SD*	*SE*	*T*	*P-value*
DS	5.66	5.31	0.78	5.62	2.78	0.38	0.043	0.966
MS	3.51	7.29	1.06	3.36	7.65	1.05	0.102	0.919
FS	8.83	8.70	1.27	4.47	5.21	0.72	2.992	0.004
DMFS	18.00	10.69	1.56	13.45	9.31	1.28	2.274	0.025
DMFT	8.30	2.83	0.41	7.81	2.44	0.34	0.923	0.358

Severity of dental caries represented by grades of decayed fraction among disordered and normal mothers is displayed in table (2). The data of the present study exhibits that disordered mothers had higher mean values relating to $D_3$and D_4 than normal mothers, but had lower mean value regarding D_1 and D_2 than normal mothers, however the results weren't significant statistically ($p>0.05$).

Table 2: Dental caries severity represented by grades of Dsin relation to mother-infant bonding status.

Variables	*Group*	*Mean*	*±SD*	*±SE*	*T*	*P-value*
D1	Disorder	1.277	1.425	0.208	0.991	0.324
	Normal	1.604	1.822	0.250		
D2	Disorder	2.340	2.966	0.433	1.166	0.247
	Normal	2.962	2.270	0.312		
D3	Disorder	0.915	1.613	0.235	0.691	0.491
	Normal	0.717	1.246	0.171		
D4	Disorder	1.149	3.967	0.579	1.355	0.181
	Normal	0.340	1.073	0.147		

4. Discussion

Since there are no previous studies in Iraq on the relationship between mother-infant bonding and dental health status, this study was conducted to investigate the impact of maternal bonding on dentition status of the mothers.The present study revealed that caries experience (DMFS, FS)was significantly higher among disordered mothers in addition to the advanced gradesof Ds(D_3 and D_4). The higher mean values among disordered mothers may be attributed to the psychological condition that the mother may experience such as depression [21]as Ohashi et al. [22] assumed that emotional abuse and depression are related to each other, however the emotional disturbance especially in the very early period postpartum was related to bonding complications rather than depressive issues. It was previously reported that the caries experience might be influenced by the depression disorder experience and it would decrease the self-efficacy or self-respect which might lead to neglect the oral hygiene care and to cause the dental caries23, and the impairment in the performance of self-care habits provides favorable conditions for the cariogenic microorganism to predominate.[24,25]

On conclusion, the maternal bonding disorder influences the dentition status of the mother, however further studies are needed to explore the effect of biomarkers in relation to bonding status of the mother to investigate the exact effect of the bonding disorder on the oral health.

References

[1] Taylor A, Atkins R, Kumar R, Adams D, Glover V. 2005. A new Mother-to-Infant Bonding Scale: links with early maternal mood. Arch WomensMent Health; 8:45–51.
[2] Wittkowski, AA, Wieck AA, Mann SS. 2007. An evaluation of two bonding questionnaires: a comparison of the Mother-to-Infant Bonding Scale with the Postpartum Bonding Questionnaire in a sample of primiparous mothers. Archives of Women's Mental Health; 10(4):171-175.
[3] Kumar RC. 1997. "Anybody's child": Severe disorders of mother-to-infant bonding. British Journal of Psychiatry;171:175–181.
[4] Brockington IF. 2004. Postpartum psychiatric disorders.Lancet; 363(9405):303-10.
[5] Ross E. 2012. Maternal-fetal attachment and engagement with antenatal advice. British Journal of Midwifery; 20(8): 566-575.
[6] Vaughn BE, VeríssimoM, Coppola G, Bost KK, Shin N, McBride B, KorthB. 2006. Maternal attachment

script representations:Longitudinal stability and associations with stylistic features of maternal narratives. Attachment & Human Development; 8(3): 199-208.
[7] Brockington IF, Oats J, George S, Turner D, Vostanis P, Sullivan M, Murdoch C. 2001. A screening questionnaire for mother-infant bonding disorders. Arch. Womens Ment. Health; 3:133–140.
[8] Garcia-Esteve L, Torres A, Lasheras G, Palacios-Hernández B, Farré-Sender B, Subirà S, ValdésIan M, Brockington IF. 2016. Assessment of psychometric properties of the Postpartum Bonding Questionnaire (PBQ) in Spanish mothers. Archives of Women's Mental Health; 19(2): 385–394.
[9] Ohashi Y, Kitamura T, Sakanashi K and Tanaka T. 2016. Postpartum Bonding Disorder: Factor Structure, Validity, Reliability and a Model Comparison of the Postnatal Bonding Questionnaire in Japanese Mothers of Infants. Healthcare; 4:50.
[10] Silk H. 2014. "Diseases of the mouth.". Primary care; 41 (1): 75–90.
[11] Weintraub JA, Finlayson TL, Gansky SA, Santo W, Ramos-Gomez F. 2013. Clinically Determined and Self-Reported Dental Caries Status During and After Pregnancy Among Low-Income Hispanic Women. Journal of public health dentistry;73(4):311-320.
[12] Kneckt MC, Syrjälä AM, Knuuttila ML. 1999. Locus of control beliefs predicting oral and diabetes health behavior and health status. Acta Odontologica Scandinavica;57(3):127-31.
[13] Källestål C, Dahlgren L, Stenlund H. 2006. Oral health behavior and self-esteem in Swedish adolescents over four years. Journal of adolescent health ;38(5):583-90.
[14] Kebede B, Kemal T, Abera S. 2012. Oral Health Status of Patients with Mental Disorders in Southwest Ethiopia. PLoS ONE; 7(6):39142.
[15] Lewis S, Jagger RG, Treasure E. 2001. The oral health of psychiatric in-patients in South Wales. Special Care in Dentistry ;21(5):182-6.
[16] Stevens T, Spoors J, Hale R, Bembridge H. 2010. Perceived oral health needs in psychiatric in-patients: impact of a dedicated dental clinic. The Psychiatrist;34(12):518-21.
[17] Clifton A, Tosh G, Khokhar W, Jones H, Wells N. 2011. Oral health advice for people with serious mental illness. Schizophrenia bulletin.;37(3):464-5.
[18] Brockington IF, Fraser C, Wilson D. 2006. The Postpartum Bonding Questionnaire: a validation. Arch Womens Ment Health; 9: 233–242.
[19] WHO. 1997: Oral health surveys basic methods. 4th ed.World Health Organization. Geneva, Switzerland.
[20] Manji F, Fejerkuv, Baelum V. 1989. Pattern of dental caries in adult rural population. Caries Res. 23, 55-69.
[21] Kim SJ, Lee YH. 2016. The Mental Health Influence to Dental Caries in Adults. Int J Clin Prev Dent;12(2):51-56.
[22] Ohashi Y, Sakanashi K, Tanaka T, Kitamura T. 2016. Mother-To-Infant Bonding Disorder, but not Depression, 5 days After Delivery is a Risk Factor For Neonate Emotional Abuse: A Study in Japanese Mothers of 1-Month Olds; 8:27-36.
[23] Weigel DJ, Devereux P, Leigh GK, Ballard-Reisch D. 1998. A longitudinal study of adolescents' perceptions of support and stress; stability and change. J Adolesc Res;13:158-77.
[24] Oaten M, Cheng K.2005. Academic examination stress impairs self-control. Journal of Social and Clinical Psychology; 24(2):254-79.
[25] Niedert C, Dorner B. 2009. Nutritional care of the older adult: a handbook for dietetics professionals working throughout the continuum of care. 2nd ed. Chicago, Ill: American Dietetic Association.