

The relationship between eating disorder symptoms and obsessive compulsive disorder in primigravida women

Soheila Mohamadirizi¹, Masoumeh Kordi², Mohamad Taghi Shakeri³, Morteza Modares-Gharavi⁴

ABSTRACT

Background: Eating Disorder Symptoms are among the most common disorders in perinatal period and are influenced by various environmental and psychosocial factors such as anxiety disorders. So, the aim of this study was to determine the relationship between Eating Disorder symptoms and Obsessive Compulsive disorder in primigravida women.

Materials and Methods: This cross-sectional study was carried on 213 in primigravida women referring to Mashhad health care centers, selected through a two stage sampling method (cluster-convenience) in Mashhad in 2013. Demographic and prenatal characteristics Questionnaire, Eating Disorder Examination Questionnaire (EDE-Q)(26Q) and Maudsley Obsessive Compulsive Questionnaire (30Q) were completed by the subjects. The statistical analysis was performed with various statistical tests such as Pearson correlation coefficient, *t*-test, one-way ANOVA and linear regression. Significance level was considered as $P < 0.05$.

Results: Based on the findings 94.6% of the subjects had Obsessive Compulsive disorder, and 18% had Eating Disorder Symptoms. In addition, there was a poor positive correlation between the rate of Eating Disorder Symptoms and Obsessive Compulsive.

Conclusions: There was a correlation between the Eating Disorder Symptoms and Obsessive Compulsive in pregnant women. It is recommended to eliminate or decrease Eating Disorder Symptoms and Obsessive Compulsive among Iranian pregnant women through preventive measures.

Key words: Eating, eating disorder, Iran, obsessive-compulsive disorder, pregnancy, pregnant women

INTRODUCTION

Eating disorder signs are among the factors affecting general health and have an increasing incidence in recent decades.^[1] They are categorized in four general groups including concerns about body image, body weight, eating and eating prevention.^[2,3] These signs are firstly manifested in minor forms of attitude disorder toward eating and end to acute and almost irreversible clinical conditions. Therefore, screening the individuals at risk and recognition of the factors causing these disorders are of great importance.^[4] Generally, these signs exist in 5-7% of the women at fertility age. They decrease at the beginning of the pregnancy due to fear of fetal health but increase close to the end of pregnancy due to mothers' concern

about their body shape and weight.^[5] Eating disorders are changed during pregnancy. Baker *et al.* reported that 8% of the women during their pregnancy and 57% within the first weeks of postpartum period are concerned about their weight.^[6] In fact, the phenomenon of eating disorders is culture-related issue and should be closely considered in developing countries.^[7]

They are among major health problems, which act as a risk factor for diseases such as osteoporosis, amenorrhea, anxiety and depression.^[8] Nowadays, detection of the factors affecting these disorders is considered as an important issue due to the sudden increase in their incidence and severity.^[9] In fact, eating disorder is a social, psychological and biological disease, resulted from various socio- cultural and psychological factors. Mental disorders including depression and different types of anxiety, especially social anxiety, are predisposing factors for eating disorders.^[10-12] Although, the nature of their role is not completely clear,

¹Department of Midwifery, School of Nursing and Midwifery, Isfahan, Isfahan University of Medical Sciences, Isfahan, Iran, ²Department of Midwifery, School of Nursing and Midwifery, Mashhad, Mashhad University of Medical Sciences, Mashhad, Iran, ³Department of Biostatistics, Mashhad University of Medical Sciences, Mashhad, Iran, ⁴Research Center of Psychiatry and Behavioral Sciences, Mashhad University of Medical Sciences, Mashhad, Iran

Address for correspondence: Ms. Masoumeh Kordi, Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran. E-mail: kordim@mums.ac.ir

Submitted: 10-May-14; Accepted: 21-Jun-15

Access this article online

Quick Response Code:



Website:
www.ijnmrjournal.net

DOI:
10.4103/1735-9066.170015

many theories concerning eating disorder emphasize on the important role of types of psychological disorders. Most of epidemiological and clinical studies have shown that most of the individuals with eating disorder suffer from one or more than one anxiety disorder.^[4] Obsessive compulsive disorder (OCD) is one of the most common anxiety disorders. It involves one out of 50 women during pregnancy. This disorder includes a series of formal behaviors or repetitive and constant thoughts according to which the individuals internally feel forced to do to relieve their internal anxiety.^[13] Anxiety signs including OCD start and worsen during pregnancy and after delivery.^[13]

Abramowitz *et al.* prospective study (2005) in USA showed that 85% of pregnant women with OCD manifest these signs in postpartum period.^[14] Although the cause for this disorder in postpartum period is unknown, a literature review reported its prevalence similar to general population (2-3%) three months after delivery.^[15] Zambaldi (2009) showed that 9.4% of the women suffer from OCD in postpartum period, with the highest sign of inspection and cleaning.^[16] Carter (2000) showed no significant association between attitude toward eating and anxiety during pregnancy.^[17] Mazzeo (2006) showed a significant association between depression and eating disorder.^[18] Sperry (2011) reported no significant association between eating disorder and depression.^[19] In fact, OCD and es are common disorders that may occur concurrently.^[20] The signs of OCD and eating disorder have different prevalences in various societies and cultures in pregnant women and the researcher found no similar study, conducted in Iran. With regard to controversial existing results,^[16-18] the researcher aimed to determine the relationship between Eating Disorder symptoms and Obsessive Compulsive disorder in primigravida women.

MATERIALS AND METHODS

This is a cross- sectional study, conducted on 213 primigravida women in Mashhad. After approval of ethics committee in Mashhad University of Medical sciences and explanation of research goals and obtaining a written consent from the subjects and with respect to ethical codes, sampling and the intervention were conducted. Sample size was calculated 190 subjects after a pilot study on 10 pregnant women with correlation index formula [z_1 = confidence interval index (1.96); z_2 = test power of 80% (84%)], that with calculation of 15% sample size increase resulted from random sampling, was finalized as 215 subjects. Based on the number of the health care centers in Mashhad (no 1, 2, 3,), one center (cluster) was selected by random numbers table, and the subjects were selected by convenient sampling (based on the population, covered by the center). After giving explanations about the

research goal, the subjects signing the consent form and meeting the inclusion criteria, completed the pregnancy and demographic, obsessive compulsive (30Q) and Eating Disorder Examination questionnaires (EDE-Q)(26Q). EDE-Q contains four sub-scales of concerns on body image (7 items, scored between 0-7), body weight (6 items, scored between 0-6), eating (8 items, scored between 0-8) and prevention from eating (7 items, scored between 0-7), scored based on a seven - point Likert's scale (zero = Never, six = Always). Overall score and sub- scales scores equal to four or more showed existence of the disorder in the related sub- scale or the overall test.^[3,21] Meudsley OCD questionnaire contains 30 two- item questions (true/false) which are answered by the subjects themselves and have been designed to measure OCD signs. This research tool categorizes the patients with obsession signs. Four main categories of this tool are sub-scales of washing (11 items), inspection (7 items, scored between 0-9), slowness (7 items, scored between 0-7) and doubt (7 items, scored between 0-7 points and with overall score of 0-30 with cut- off point of 11 and more for sign diagnosis, in a way that scores 11 and over show the signs of OCD. Validity of subjects' selection checklist and personal and pregnancy, social anxiety questionnaire and Persian version of eating disorder questionnaire was established by content validity method. This tool was firstly prepared based on the newest texts and studies in this context, and then, was distributed among some experts. Reliability of the Persian version of eating disorder general signs and its four sub-scales were 0.91, 0.89, 0.92, 0.90 and 0.91 respectively, and for total score of OCD and its sub- scales of washing, inspection, slowness and doubt, they were 0.98, 0.92, 0.96, 0.88, 0.93 through correlation index (the correlation of two questionnaires were determined at the beginning and two weeks after study among 10 pregnant women. Inclusion criteria were signing an informed consent form, Iranian nationality, being primigravida, and gestational age of 28 weeks and over. Exclusion criteria were occurrence of a miserable or tense event during pregnancy (death of an immediate relative, severe family conflicts, financial problems and a major change in life), consumption of psychotropic medications, being on a special diet, history of a mental disease during a year prior to the study (a diagnosed mental disease by a psychiatrist or taking psychotropic medication), and being involved in a medical disease. Collected data were analyzed by Pearson correlation coefficient and linear regression model through SPSS 14.

Ethical considerations

Permission for this study was through the ethics committee of MUMS and All pregnant women were informed about the purpose and design of this research, and that their participation was voluntary. pregnant womens signed a written informed consent for their participation.

RESULTS

Mean (SD) of subjects' age, BMI and gestational age were 24.14 (4.4) years, 23.22 (4.6) kg/m² and 33.84 (3.9) weeks. In addition, 211 subjects (99% (of the subjects had moderate socio- economic status, 191 (89%) had high school education and 201 subjects (94.4%) were homemakers [Table 1].

Pearson correlation index showed a positive correlation between scores of eating disorder and OCD signs in a way that an increase in score of eating disorder increases score of OCD ($P = 0.31$, $R = 0.22$) [Table 2]. In order to control confounding factors, all quantitative variables were entered into linear regression model through concurrent entrance method. In the first stage, a significant difference was observed between age ($P = 0.013$), BMI ($P = 0.001$) and gestational age ($P = 0.021$), and eating disorder. In the next stage, these variables were entered as independent variables and eating disorder as the dependent variable in general linear regression model. At the end, only obsession and compulsion signs ($P = 0.040$, $B = 0.587$) had $P < 0.05$ and confidence interval of 95% among the effective variables, entered into the model. The variables, effective on eating disorder, including age, BMI, gestational and obsession and compulsion were entered as independent variable and eating disorder signs as dependent variable into general linear regression model. Finally, only obsession and compulsion variable ($P = 0.001$, $B = 0.524$) had $P < 0.05$ and was considered as predicting variable for eating disorder signs [Table 3].

DISCUSSION

The present study showed that about 8% of primigravida women reported eating disorder signs. Crow *et al.* in Minnesota, USA, conducted a linear study to determine the signs of eating disorder during pregnancy on 42 women and showed that the frequency of eating disorder signs during pregnancy was 8.2%. Their results showed that the eating disorder and its sub- scales were pregnant mothers' concerns about their weight (2.38) and body image (2.67).^[22] Meanwhile, there was no report from the other two sub- scales. Mazzeo *et al.* showed that 39% of the women with depression had anorexia nervosa and 66% had bulimia.^[18] Use of eating disorder questionnaire, which is a proper placement for consideration of such signs through interviews, can be a probable reason for similar frequency of eating disorder signs between the above- mentioned studies and the present study although the societies and cultures were difference. The results of the present study showed that almost 94% of the pregnant women have degrees of OCD. Uguz (2007) in Turkey showed that the signs of OCD

Table 1: The mean and standard deviation of subjects based on eating disorder symptom and obsessive compulsive disorder

| Variables | Mean | SD |
|------------------------------|------|-----|
| Total eating disorders score | 2/05 | 0/3 |
| Shape concern | 1/20 | 0/3 |
| Weight concern | 1/05 | 0/1 |
| Eating | 1/01 | 0/1 |
| Restraint | 1/03 | 0/2 |
| Total OCI score | 15.6 | 2.6 |
| Washing | 6.1 | 1.3 |
| Doubting | 2.2 | 1.1 |
| Dullness | 4.2 | 0.9 |
| Checking | 4.4 | 1.4 |

Table 2: Distribution of subjects based on eating disorder symptom and obsessive compulsive disorder

| Variables | No symptoms N (%) | Symptoms N (%) |
|-------------------------------|----------------------|-------------------|
| Eating disorder symptom | 195 (91/5) | 18 (8/5) |
| Obsessive compulsive disorder | 12 (5/4) | 201 (94/6) |

Table 3: Linear regression between predictor variables (total OCI score, gestational age, maternal age, maternal BMI) and dependent variable (total eating disorder score)

| Predictor variables | Coefficients ^a | | | t | Sig. |
|---------------------|-----------------------------|------------|---------------------------|--------|-------|
| | Unstandardized Coefficients | | Standardized Coefficients | | |
| | B | Std. Error | Beta | | |
| Total OCI score | 0.081 | 0.031 | 0.133 | 2.602 | 0.010 |
| Gestational age | 0.099 | 0.056 | 0.091 | 1.780 | 0.076 |
| Maternal age | 0.224 | 0.086 | 0.138 | 2.621 | 0.609 |
| Maternal BMI | -0.023 | 0.104 | -0.012 | -0.225 | 0.822 |

^aDependent variable: Total eating disorder SCORE

increased by 46% among pregnant women.^[23] Meanwhile, these signs subsided notably in postpartum period. Zambaldi (2009) showed that only 4% of the women reported OCD in postpartum period.^[16] One of the probable reasons for the difference in levels of gestational anxiety with other studies is the different socio cultural levels in various countries. Many experts believe that culture can affect the level of OCD. Our obtained results showed a significant correlation between eating disorder signs and OCD. Carter *et al.* (2000) showed no significant association between attitude toward eating and depression during pregnancy by use of depression signs (20 items), anxiety (26 items) and attitude (26 items) questionnaires. There was also no significant association between attitude toward eating and anxiety during pregnancy.^[17] Mazzeo *et al.* (2006) showed a significant association between depression and eating disorder in a way that 39% of the multiparous women had

postpartum anorexia nervosa and 66% had bulimia.^[2,18] Different measurement tools for eating disorder and anxiety as well as socio-cultural difference might have affected the results in various studies that are not in line with the present study as the present study investigated a type of anxiety disorder (OCD) while two - aforementioned studies investigated anxiety and depression during pregnancy or in postpartum period. In addition, in the present study EDE-Q was adopted while in those studies, attitude toward eating questionnaire was adopted to investigate eating disorder, which can be the reason for inconsistency with Carter's study. In fact, as eating disorder is clarified by malbehavior such as anorexia nervosa or bulimia, it is clear that existence of such characteristics in these individuals affect their concerns about and conflicts with their problems so that the increase in their concern may results in irreparable outcomes including psychological problems, especially anxiety disorders (OCD), which is consistent with the present study.^[24] Among the limitations in the present study, the followings are indicated: The subjects might have hidden some points despite confirming the confidentiality of their information. Subjects' personal, personality and genetic differences, affecting the severity of anxiety and eating disorder signs, were partially controlled in the present study. Another limitation might have been the family's and relatives' attitude toward intake of food, disease and the history of their involvement in one of eating disorders, which in the present study, were not investigated due to high number of questions, limitation of time and mothers' tiredness during evaluation of the variables. Therefore, as over 80% of the direct care is conducted by midwives and nurses in health sector,^[25] it is suggested to investigate other factors associated to eating disorder in pregnant women despite consideration of these psychological disorders by health care personnel and mothers' mental condition parallel to their physical condition.

CONCLUSION

Our results showed a positive correlation between eating disorder and OCD. With regard to these results and those of other studies, health providers are suggested to consider the issues related to mothers' mental health including signs of OCD and eating disorder and their direct association with one another, parallel to application of physical health promotion strategies among these women. Education of all individuals concerning nutritional and OCD problems can be effective in diagnosis and early detection of such signs.

ACKNOWLEDGEMENTS

This study is part of a proposal, approved 2013 with code 920406, Mashhad University of Medical Science (in Iran) which

is sponsored with research deputy. Also, we greatly appreciate the support and cooperation of this Vice Chancellery, as well as all pregnant mothers.

REFERENCES

1. Golden NH. Eating disorders in adolescence and their sequelae. *Best Pract Res Clin Obstet Gynaecol* 2003;17:57-73.
2. Luce KH, Crowther JH, Pole M. Eating Disorder Examination Questionnaire (EDE-Q): Norms for undergraduate women. *Int J Eat Disord* 2008;41:273-6.
3. Kordi M, Mohamadirizi S, Shakeri MT, Gharavi MM, Rashidi F. Relationship between social anxiety symptoms and eating disorder symptoms in referred nulliparous women. *IJOGI* 2014;17:9-15.
4. Gargari BP, Behzad MH, Sajadi NS, Kooshavar D, Karami S. Relation of body mass index to eating attitude in Tabrizian high school girls. *Medical Journal of Tabriz University of Medical Sciences* 2010;32:10.
5. Micali N, Treasure J, Simonoff E. Eating disorders symptoms in pregnancy: A longitudinal study of women with recent and past eating disorders and obesity. *J Psychosom Res* 2007;63:297-303.
6. Baker CW, Carter AS, Cohen LR, Brownell KD. Eating attitudes and behaviors in pregnancy and postpartum: Global stability versus specific transitions. *Ann Behav Med* 1999;21:143-8.
7. Becker CB, DeViva JC, Zayfert C. Eating disorder symptoms among female anxiety disorder patients in clinical practice: The importance of anxiety comorbidity assessment. *J Anxiety Disord* 2004;18:255-74.
8. Herpertz-Dahlmann B. Adolescent eating disorders: Definitions, symptomatology, epidemiology and comorbidity. *Child Adolesc Psychiatr Clin N Am* 2009;18:31-47.
9. Dalle Grave R. Eating disorders: Progress and challenges. *Eur J Intern Med* 2011;22:153-60.
10. Peñas-Lledó E, Jiménez-Murcia S, Granero R, Penelo E, Agüera Z, Alvarez-Moya E, *et al.* Specific eating disorder clusters based on social anxiety and novelty seeking. *J Anxiety Disord* 2010;24:767-73.
11. Soh NL, Touyz SW, Surgenor LJ. Eating and body image disturbances across cultures: A review. *Eur Eat Disord Rev* 2006;14:54-65.
12. Väänänen JM, Fröjd S, Ranta K, Marttunen M, Helminen M, Kaltiala-Heino R. Relationship between social phobia and depression differs between boys and girls in mid-adolescence. *J Affect Disord* 2011;133:97-104.
13. Abramowitz JS, Taylor S, McKay D. Obsessive-compulsive disorder. *Lancet* 2009;374:491-9.
14. Abramowitz JS, Khandker M, Nelson CA, Deacon BJ, Rygwall R. The role of cognitive factors in the pathogenesis of obsessive-compulsive symptoms: A prospective study. *Behav Res Ther* 2006;44:1361-74.
15. Brandes M, Soares CN, Cohen LS. Postpartum onset obsessive-compulsive disorder: Diagnosis and management. *Arch Womens Ment Health* 2004;7:99-110.
16. Zambaldi CF, Cantilino A, Montenegro AC, Paes JA, de Albuquerque TL, Sougey EB. Postpartum obsessive-compulsive disorder: Prevalence and clinical characteristics. *Compr Psychiatry* 2009;50:503-9.
17. Carter AS, Baker CW, Brownell KD. Body mass index, eating attitudes, and symptoms of depression and anxiety

- in pregnancy and the postpartum period. *Psychosom Med* 2000;62:264-70.
18. Mazzeo SE, Slof-Op't Landt MC, Jones I, Mitchell K, Kendler KS, Neale MC, *et al.* Associations among postpartum depression, eating disorders, and perfectionism in a population-based sample of adult women. *Int J Eat Disord* 2006;39:202-11.
 19. Steffanie L. Sperry. Predictors of Body Dissatisfaction, Eating Disturbance, and Depressive Symptoms in Mothers. Ann Arbor: University of South Florida; 2011. p. 89.
 20. Ogden J. The Psychology of Eating: From Healthy to Disordered Behavior. 2nd edition. UK: Wiley-Blackwell; 2011. p. 168-88.
 21. Lavender JM, De Young KP, Anderson DA. Eating Disorder Examination Questionnaire (EDE-Q): Norms for undergraduate men. *Eat Behav* 2010;11:119-21.
 22. Crow SJ, Agras WS, Crosby R, Halmi K, Mitchell JE. Eating disorder symptoms in pregnancy: A prospective study. *Int J Eat Disord* 2008;41:277-9.
 23. Uguz F, Gezginc K, Zeytinci IE, Karatayli S, Askin R, Guler O, *et al.* Obsessive-compulsive disorder in pregnant women during the third trimester of pregnancy. *Compr Psychiatry* 2007;48:441-5.
 24. Valizade A, Ariapooran S. Prevalence of eating disorders and their role in psychological signs among women with sport activities. *Journal of Guilan University of Medical Sciences* 2011;20:15-23.
 25. Mohamadirizi S, Kordi M, Shakeri MT, Fadardi JS, Hafizi L. Relationship between job stress with menstrual bleeding pattern among midwives. *HAYAT* 2012;18:1-11.

How to cite: Mohamadirizi S, Kordi M, Shakeri MT, Modares-Gharavi M. The relationship between eating disorder symptoms and obsessive compulsive disorder in primigravida women. *Iranian J Nursing Midwifery Res* 2015;20:642-6.

Source of Support: Mashhad University of Medical Science, **Conflict of Interest:** None declared.