Postpartum Depression Among Working and Non-working Women in Denizli, Turkey

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Abstract

Purpose: In the current study we aimed: (1) to report the prevalence of postpartum depression (PPD) among Turkish women in Denizli province; (2) description of the association of PPD with risk factors among working and non-working women.

Methods: A descriptive and cross-sectional study conducted at the Maternal and Child Health and Family Planning Center in Denizli State Hospital. The research sample consisted of 250 women who came for follow-up between August-October 2008, and voluntarily agreed to participate. Socio-demographic and obstetric variables were collected through a socio-demographic and obstetric questionnaire. To achieve the goals of the current study, we employed the Beck Depression Inventory (BDI).

Results: Working women's mean depression score was 27.35 ± 17.52 while non-working women's mean depression score was 21.32 ± 16.54. The BDI-based prevalence of PPD (to the cut off score of, 17) was 60.8%. As a result of the multiple regression analysis, it was determined that working women's age, delivery mode, satisfaction with the baby's sex, baby's nutritional style and health status increased the depression scores in a linear fashion. Fifty one percent of the working women's mean depression scores could be explained by these independent variables ($R^2 = 0.51$). As a result of the multiple regression analysis, it was determined that non-working mothers' educational level, satisfaction with the baby's sex, family support, health status, relations with the spouse increased the depression scores linearly. Fifty eight percent of the variation in working mothers' mean depression scores can be explained by these independent variables ($R^2 = 0.58$).

Conclusion: The findings of the current study revealed high BDI-based PPD prevalence in a sample of Turkish women and described a number of risk factors associated with PPD. The high prevalence found in this study indicated a need for developing new interventions for early detection and treatment of PPD.

Key words: Postpartum Depression, Risk Factors, Working Women, Non-working Women, Turkey

Introduction

The postpartum period is a unique period of time in a woman's life. It represents a major role change and appears with numerous transformations which are social, psychological as well as physical. A significant decrease in gonadal hormones is observed during this period (1). In addition, childbirth is a major social and psychological disrupter of the lives of an infant's parents (2).

Postpartum depression (PPD) is a non-psychotic depressive episode of mild to moderate severity, beginning in or extending into the first postnatal year (3). PPD is an important public health problem, having a significant impact on the mother, the family, her partner, mother–baby interaction and on the long-term emotional and cognitive development of the baby (3,4,5). Research from Western countries shows that maternal depression is related to poor bonding between mother and child, missing pediatrics appointments, missing required vaccinations, and more frequent use of emergency department services (6,7,8,9).

PPD, which typically occurs from 2 weeks to 1 year after the birth of a child, may manifest with symptoms that may not be very apparent to untrained health care workers (10,11). Depending upon how it is defined, the assessment criteria used and the geographical and cultural dimension of the study conducted, PPD prevalence is seen over a wide range of 3.5–40% (12). Cultural backgrounds were found to greatly influence prevalence and the assessment and management of PPD (13). A recent systematic

review revealed low PPD prevalence in Western Europe and Australia (13%), medium PPD prevalence in the US (29%), whereas high PPD prevalence was reported in India (32%) and South Korea (36%) (14). A meta-analysis of 59 studies (n=12810) found an average prevalence rate of non-psychotic PPD of 13% (95% CI 12.3–13.4)(15). A few studies from Turkey have found the prevalence of PPD to be high and in the range of 21.8–36.9% (16).

Midwives and nurses who provide postnatal care have significant roles in determining a postpartum woman's risk factors for psychological illness. They offer preventive care, screening to ensure early diagnosis, and direct mother with psychological problems to appropriate treatment and care. Postpartum women seek more care in this period than during other periods of their lives, and spend more time with health-care personnel (17). For this reason, postpartum is a unique opportunity to screen for depression in women, to provide preventive care, to priorities women in risk groups, and to ensure that they are sent for consultation and receive care and treatment for diagnosed illnesses.

Midwives and nurses can help prevent the development of depression in postnatal period, and mild signs of depression from worsening and illness recurring. They can also implement interventions such as stress reduction, ensuring adequate nutrition, preventing the consumption of cigarettes, nicotine and caffeine, encouraging exercise and adequate hygiene, educating women about measures that may help with adaptation (such as taking a warm sitz bath and drinking warm milk), developing coping skills and putting into action current social support systems (particularly for women who are separated or divorced) (18,19).

In the current study we aimed: (1) to report the rate of postpartum depression among Turkish women in Denizli province; (2) description of the association of PPD with risk factors. Being aware of risk factors for depression during postpartum and cultural characteristics are important in planning and implementing postnatal care.

Materials and Methods

This descriptive and cross-sectional study was conducted between August-October 2008. The population for the study included postpartum women who came to Maternal and Child Health and Family Planning Center in Denizli State Hospital, to postpartum women who came for follow-up during this period. This study was undertaken in the city of Denizli which has a geographical area of 11.868 km² and a total population of approximately 926.362 people. Denizli, where the source of income is agriculture and industry is located in the western part of Turkey. The research sample consisted of 250 women chosen with a convenience sampling technique. In social sciences it was stated that the ideal size has to be around 250-300 samples for a normal distribution (20). For this reason, it was seen sufficient to have 250 women to join this survey.

The socio-demographic and obstetric questionnaire

A 24-item questionnaire was specifically designed for the purpose of this study. It was formulated after a thorough review of the relevant literature. Socio-demographic and obstetric variables, such as age, education, employment, place of residence, migration, family type, economical status, conscious pregnancy, type of delivery, the period after birth (month), sex of the newborn, the baby's nutrition, the baby's health status, perception of one's own and the baby's health, family, relative and friend support for the mother's and the baby's care after the birth, self-evaluation of psychology, evaluation of the relations with the spouse were assessed through a specially designed socio-demographic and obstetric questionnaire.

After the questionnaire was prepared, it was shown to five members of the teaching staff for expert opinions regarding its validity. The majority of the questionnaire was found to have reasonable validity based on the expert reviews. Then the questionnaire was tested for understandability by giving it to 30 women who were not included in the study, and changes were made based on their recommendations.

All women who were in their 2nd–24th weeks postpartum were invited to participate in the study. Participation was on a voluntary basis. All the women participating in the study gave their informed consent. All data were collected during face-to-face interviews. Interviews including completing all measures with each woman lasted about 15–20

min. Women with twin pregnancies and those who had babies with chronic health problems were not included.

The Beck Depression Inventory (BDI)

We employed the BDI, which is a 21-item self-reporting questionnaire. The BDI was developed by Beck et al. (1979). The BDI is a specially designed and most commonly used tool to assess a woman's self-report of depressive symptomatology during the postpartum period. For each category there are 4-5 statements of increasing severity. The women reads the scale and marks the statement most applicable to herself. The score for each item ranges from 0-3; the total score falls between 0-62 (21). The BDI has been translated into many languages and has also been validated in many cultures. It is recommended in primary care. Hisli et al.(1987) translated and adopted the BDI into Turkish. The Turkish version of the BDI has been validated. Hisli et al. (1987) found a cut-off point of 17 with a sensitivity of 0.84 and specificity of 0.88 and Cronbach's alpha (internal consistency reliability) was 0.79 (22). The BDI is an easily administered, objective, reliable and valid instrument. The cut-off point of 17 was used in the study and women with the BDI scores of ≥ 17 were regarded to be at risk. The internal reliability of the BDI in our study demonstrated very good internal scale reliability with Cronbach's alpha coefficients (0.97). It is important to remember at this point that BDI is only a screening tool, even though it has high specificity and sensitivity. The actual prevalence of PPD which is diagnosed by psychiatric consultation may differ slightly.

Ethics

The approval of the institutional review board was obtained from the Regional Health Directorate and permissions to conduct the study were also obtained from administrators of Maternal and Child Health and Family Planning Center in Denizli State Hospital.

Data analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA), version 13.0. Descriptive characteristics, such as frequency and summary were calculated for variables of interest. A bivariate analysis was performed with the potential risk factors for PPD. Multiple logistic regression analysis was then performed with the risk factors with statistical significance in bivariate analysis. A level of $p<0.05$ was considered statistically significant.

Results

Socio-Demographic Characteristics of Working and Non-working Women

Among the working women, 43% were in the 20-25 age range, 38.7% had high school degree, 66.7% had not migrated, 67.7% had equivalent income and expenditure and 90.3% had a nuclear family structure.

Among the non-working women, 43.3% were in the 18-24 age range, 45.9% had graduated from the primary school, 68.2% had not migrated, 50.3% had equivalent income and expenditure and 84.7% had a nuclear family structure (Table 1).

Bio-Psychosocial Characteristics of Working and Non-working Women

It was determined that 86% of the working women got pregnant consciously, 55.9% had Cesarean section, 60.2% had delivery in a state hospital, 81.7% were "pleased" with their baby's sex, 74.2% received family support, 34.4% received support from relatives, 50.5% reported having a "fair" relationship with their husband, and 49.5% stated that their general health condition was "good" (Table 2).

It was determined that 84.1% of the non-working women had conscious pregnancy, 56.1% had normal delivery, 75.8% had delivery in a state hospital, 91.7% were "pleased" with their baby's sex, 78.3% received family support, 24.2% received support from the relatives, 44.6% had a "fair" relationship with their spouse, and 63.1% had a "good" general health status (Table 2).

Bio-Psychosocial Characteristics of Working and Non-working Women's Babies

Among the working women, 55.9% had a daughter and 51.6% breastfed their babies. Among the non-working women, 57.3% had a son and 70.1% breastfed their baby (Table 3).

Table 1. The Distribution of the Postpartum Working and Non-working Women's Characteristics

	Working Women		Non-working Women	
	n	%	n	%
Age Group				
18-24 years	29	31.2	68	43.3
25-29 years	40	43.0	49	31.2
30-34 years	24	25.8	40	25.5
Educational Level				
Elementary school	16	17.2	72	45.9
Middle School	14	15.1	33	21.0
High School	36	38.7	41	26.1
College / University	27	29.0	11	7.0
Migration Status				
Immigrants	31	33.3	50	31.8
Non-immigrants	62	66.7	107	68.2
Perception of Income				
Income Lower than Expenditure	30	32.3	78	49.7
Income equals to the Expenditure	63	67.7	79	50.3
Family Type				
Nuclear Family	84	90.3	133	84.7
Large Family	9	9.7	24	15.3
TOTAL	93	100.0	157	100.0

Table 2. Bio-Psychosocial Characteristics of Working and Non-working Women

	Working Women		Non-working Women	
	n	%	n	%
Pregnancy Type				
Conscious Pregnancy	80	86.0	132	84.1
Non-conscious Pregnancy	13	14.0	25	15.9
Mode of Delivery				
Normal Delivery	41	44.1	88	56.1
Cesarean Section	52	55.9	69	43.9
Delivery Place				
State Hospital	56	60.2	119	75.8
Private Hospital	37	39.8	38	24.2
Satisfaction with Sex				
Satisfied	76	81.7	144	91.7
Dissatisfied	17	18.3	13	8.3
Family support				
Receives support	69	74.2	123	78.3
Does not receive support	24	25.8	34	21.7
Support from the Relatives				
Receives support	32	34.4	38	24.2
Does not receive support	61	65.6	119	75.8
Relations with the Spouse				
Good	32	34.4	66	42.0
Fair	47	50.5	70	44.6
Bad	14	15.1	21	13.4
General Health Status				
Good	46	49.5	99	63.1
Moderate	31	33.3	32	20.4
Bad	16	17.2	26	16.6
TOTAL	93	100.0	157	100.0

Table 3. Bio-Psychosocial Characteristics of Working and Non-working Women's Babies

	Working Women		Non-working Women	
	n	%	n	%
Baby's Sex				
Female	52	55.9	67	42.7
Male	41	44.1	90	57.3
Nutritional Style				
Mother's milk	48	51.6	110	70.1
Mother's milk and baby food	30	32.3	25	15.9
Additional food	15	16.1	22	14.0
TOTAL	93	100.0	157	100.0

Table 4. Working and Non-working Women's Mean Depression Scores

	n	Min	Max	Mean
Working Mothers' Depression Scores	93	0.0	63.0	27.35 ± 17.52
Non-working Mothers' Depression Scores	157	0.0	63.0	21.32 ± 16.54

Working and Non-working Women's Mean Depression Scores

Working women's mean depression score was 27.35 ± 17.52 while non-working women's mean depression score was 21.32 ± 16.54. A "moderately" significant positive relationship was found between postpartum working and non-working women's mean depression scores ($r=0.33$ $p=0.001$) (Table 4).

Considering postpartum working and non-working mothers' distribution of depressive symptom levels according to the cut off score of 17, it was found that 73.1% of the working mothers were depressive, 26.9% were not depressive whereas 53.5% of the non-working mothers were depressive and 46.5% were not depressive.

The Relationship Between Working and Non-working Women's Mean Depression Scores and Socio-demographic and Bio-psychosocial Features

Working Women

As a result of the correlation analysis, it was found that there was a significant positive relationship between working women's mean depression scores and age ($r=0.40$ $p<0.01$), conscious/non-conscious pregnancy ($r=0.26$ $p<0.05$), delivery mode ($r=0.22$ $p<0.05$), satisfaction with the baby's sex ($r=0.31$ $p<0.01$), the baby's nutritional style ($r=0.24$ $p<0.05$), health status ($r=0.56$ $p<0.01$), and relations with the spouse ($r=0.45$ $p<0.01$) (Table 5).

The independent variables which indicated a significant relationship with the working women's mean depression scores were analyzed by means of multiple regression analysis. It was determined that working women's age, delivery mode, satisfaction with the baby's sex, baby's nutritional style and health status increased the depression scores in a linear fashion (Table 6). The Durbin-Watson (DW) value (1.545) demonstrated that the regression model was well-constructed. The correlation between working mothers' depression scores and independent variables was (R) 0.72. Fifty one percent of the working women's mean depression scores could be explained by these independent variables ($R^2 = 0.51$). Considering the linearity of this relationship's linearity, it was found to be significant and linear ($F= 12.737$ $p<0.01$).

Non-working Women

As a result of the correlation analysis, a significant positive relationship was found between non-working women's mean depression scores and educational level ($r=0.23$ $p<0.01$), family type ($r=0.19$ $p<0.05$), conscious/non-conscious pregnancy ($r=0.24$ $p<0.01$), delivery mode ($r=0.22$ $p<0.01$), satisfaction with the baby's sex ($r=0.40$ $p<0.01$), health status ($r=0.65$ $p<0.01$), and relations with the spouse ($r=0.57$ $p<0.01$) (Table 5).

The independent variables which pointed to a significant relationship with the non-working women's mean depression scores were analyzed by means of multiple regression analysis. It was determined that non-working mothers' educatio-

Table 5. The relationship between working and non-working mothers' mean depression scores and independent variables

	Age Group	Educational Level	Migration Status	Perception of Income	Family Type	Pregnancy Type	Mode of Delivery	Delivery Place	Baby's Sex	Satisfaction with Sex	Nutritional Style	Family support	Support from the Relatives	Health Status	Relations with the Spouse
Working Women's															
r	0.40*	0.02	-0.14	-0.12	-0.14	0.26**	0.22**	0.15	-0.09	0.31*	0.24**	0.17	-0.16	0.56*	0.45*
p	0.00	0.83	0.89	0.25	0.17	0.01	0.03	0.15	0.41	0.00	0.02	0.10	0.11	0.00	0.00
Non-working Women's															
r	-0.04	0.23*	-0.11	-0.14	0.19**	0.24*	0.22*	0.08	0.02	0.40*	0.07	0.29*	-0.12	0.65*	0.57*
p	0.66	0.00	0.18	0.08	0.02	0.00	0.00	0.31	0.76	0.00	0.39	0.00	0.13	0.00	0.00

*p<0.01 **p<0.05

nal level, satisfaction with the baby's sex, family support, health status, relations with the spouse increased the depression scores linearly (Table 6). The Durbin-Watson (DW) value (1.551) demonstrated that the regression model was well-constructed. The correlation between working mothers' depression scores and independent variables was (R) 0.76. Fifty eight percent of the variation in working mothers' mean depression scores can be explained by these independent variables (R^2 =0.58). Considering the linearity of this relationship, it was found to be significant and linear (F=25.505 p<0.01). It is observed that satisfaction with the baby's health and women's health status influenced both working and non-working mothers' depression scores (Table 5, Table 6).

Table 6. Regression model for working and non-working mothers' mean depression scores and independent variables

Working Women	Beta	t	p
Age Group	0.248	2.992	0.004
Pregnancy Type	0.033	0.378	0.706
Mode of Delivery	0.234	3.038	0.003
Satisfaction with the baby's sex	0.173	2.158	0.034
Baby's nutrition style	0.185	2.313	0.023
Health status	0.322	3.217	0.002
Relations with the spouse	0.153	1.634	0.106
R=0.72 R^2 =0.51 Durbin Watson= 1.545 F=12.737 p=0.000			
Non-working Women	**Beta**	**t**	**p**
Educational Level	0.145	2.595	0.010
Family Type	0.073	1.301	0.195
Pregnancy Type	-0.042	-0.710	0.479
Mode of Delivery	-0.007	-0.116	0.908
Satisfaction with the baby's sex	0.130	2.163	0.032
Family support	0.111	1.973	0.050
Health status	0.429	6.595	0.000
Relations with the spouse	0.319	5.211	0.000
R=0.76 R^2 =0.58 Durbin Watson= 1.551 F=25.505 p=0.000			

Discussion

In the present research, it was documented that 60.8% of women had PPD at a level that required professional help according to the cut off point (17) accepted for Turkey. Depending upon how it is defined, the assessment criteria used and the geographical and cultural dimension of the study conducted,

PPD prevalence is seen over a wide range of 3.5–40% (12). In this study BDI-based PPD prevalence for Turkey was found to be higher than previous studies (16,23,24). For this reason, it is important to know the risk factors associated with PPD.

According to BDI's cut-off point (17) for Turkey 73.1% of the working women and 53.5% of the non-working women had PPD at a level which necessitated professional help. Furthermore, working women's mean PPD scores (27.35 ± 17.52) were found to be higher than that of non-working women (21.32±16.54) (r=0.33 p=0.001). Despite the egalitarian structure of the laws in Turkey, women face various problems in terms of showing their full potential in employment, continuing their profession or getting promotion. Since professions were classified and socially accepted as "female jobs" and "male jobs", women can only focus on traditional female occupations and consent to working at lower status and salary jobs. These jobs bring about the issues of seasonal and temporary work and social insecurity. Those women who can enter professional life cannot work to their full potential due to their responsibility for children, the elderly and patients and have to leave the work life. Social support institutions, such as nursery and kindergarten which are needed for solving the problems of family-work life integration, have not reached a satisfactory number in Turkey (25). The fact that women continue their mother and spouse roles as well as starting the work life leads them to experience more role conflicts. It is thought that these factors lead to more PPD among working women.

In the present research, the multiple regression results revealed a significant relationship between working women's age, delivery mode, satisfaction with the baby's sex, feeding the baby, health status and PPD scores. The multiple regression scores also revealed a significant relationship between non-working women's educational level, satisfaction with the baby's sex, family support, health status, relations with the spouse and PPD scores. It has been observed that satisfaction with the baby's sex and women's health status influence PPD scores among both working and non-working mothers.

In the studies on explaining the etiology of depression, a certain risk factor is not singled out for the emergence of the disorder; the negative interaction between the genetic structure and environment

as well its timing is found to be significant. Familial responsibility, depressive personal characteristics, being female, low educational level, negative life events, lack of close relationships, physical disorders and their treatment, psychiatric disorders leading to loss of ability are considered as basic risk factors for depression (26,27,28).

Three major meta-analytic studies have been conducted revealing a number of risk factors strongly associated with PPD: a history of depression, antenatal depression, antenatal anxiety, stressful life events, negative cognitive attributional style, low self-esteem, childcare stress, low social support and low income (29,30,31). Other risk factors for PPD cited in the literature include young age (32), fewer years of education (33), a history of miscarriage and pregnancy termination, (34) a history of childhood sexual abuse (35), birth experience, prenatal and postnatal care (36) and conscious or non-conscious pregnancy (37). Several researchers have demonstrated an association between quality and/or satisfaction with the marital or equivalent relationship and PPD(31,38, 39,40,41). A few researchers have specifically assessed the relationship between partner conflict and PPD. In an Australian study, where 490 women completed questionnaires postnatally, 'arguments with a partner' was a significant risk factor for PPD at 8 weeks (42). Similarly, in a prospective study, following a community-based cohort of 288 Israeli women, 'marital disharmony' was significantly related to PPD(43). In the present study, it was found that working and non-working mothers' PPD levels were influenced by the woman's age, educational level, delivery mode, health status, family support, and relations with the spouse. These results are compatible with the previous literature.

The hormonal changes in the postpartum breastfeeding period were found to be significant in the emergence of psychiatric disorders, especially in PPD (44). In this study, the fact that the mother's feeding style is influential over PPD levels is one of the most important indicators of the importance traditionally allotted to breastfeeding in motherhood. Work life does not allow breastfeeding whenever the mother needs and thereby creates problems for mothers. Mothers may view their work life as a hindrance concerning their babies' nutrition. Misri et al. (2006) determined that in 83% of the women with PPD who stopped producing milk, PPD star-

ted after the milk ran out. The findings of Misri lend support to this view (45).

In contrast to the previous literature, the multiple regression results in the present study pointed to the fact that satisfaction with the baby's sex influenced PPD rates. According to a study by Kağıtçıbaşı (2003) the preference for male babies, which was 84% in the 1970s dropped to 41% in the 2000s (46). However, the preference for male babies is still dominant in Turkey due to viewing the child as a security for old age and other financial benefits, and traditionally the male child is valued more. Studies conducted in the east demonstrated a relationship between having a female baby and dissatisfaction with the baby's sex (47, 48, 49). Due to the traditionally attached value to the baby's sex, it is natural that a woman's psychology may be influenced when she does not give birth to a baby of the desired sex. This result could be interpreted as a negative outcome of the pressure to give birth to a male child in Turkish society.

Conclusion

The findings of the current study revealed BDI–based PPD prevalence in a sample of Turkish women and described a number of risk factors associated with PPD. The prevalence found in this study indicated a national need for developing new interventions for early detection and treatment of PPD. Health care workers are in key position. Health care professionals should be skilled in monitoring risk factors associated with PPD and in identifying women with increased risk for PPD, such as women's age, educational level, employment status, delivery mode, satisfaction with the baby's sex, feeding the baby, health status, family support and relations with the spouse.

Limitations

Since the participants were not asked whether they had depression before or not, a limitation emerged in interpreting the PPD result. At the same time, due to the fact that it was carried out in only one city center and the sample size was small, the result cannot be generalized. However, the results will inform future studies since it is a follow-up study on PPD among working and non-working women in Turkey.

References

1. Bloch M, Daly RC, Rubinow DR. Endocrine factors in the etiology of postpartum depression. Compr Psychiatry 2003; 44:234–46.

2. Uguz F, Akman C, Sahingoz M, Kaya N, Kucur R. One year follow-up of post-partum-onset depression: the role of depressive symptom severity and personality disorders. J Psychosom Obstet Gynaecol 2009; 30(2): 141–5.

3. Gibson J, McKenzie-McHarg K, Shakespeare J, Price J, Gray R. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. Acta Psychiatr Scand 2009; 119: 350–64.

4. Tomlinson M, Cooper PJ, Stein A, Swartz L, Molteno C. Post-partum depression and infant growth in a South African peri-urban settlement. Child Care Health Dev 2006;32(1):81–6.

5. Puckering C, McIntosh E, Hickey A, Longford J. Mellow Babies: A group intervention for infants and mothers experiencing postnatal depression. Counsell Psychol Rev 2010;25(1): 28–40.

6. Stein A, Gath DH, Bucher J, Bond A, Day A, Cooper PJ. The relationship between post-natal depression and mother-child interaction. Br J Psychiatry 1991; 158: 46–52.

7. Flynn HA, Davis M, Marcus SM, Cunningham R, Blow FC. Rates of maternal depression in pediatric emergency department and relationship to child service utilization. Gen Hosp Psychiatry 2004; 26:316–22.

8. Patel V, Rahman A, Jacob KS, Hughes M. Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. BMJ 2004; 328:820–3.

9. Black MM, Baqui AH, Zaman K, McNary SW, Le K, Arifeen SE, et al. Depressive symptoms among rural Bangladeshi mothers: implications for infant development. J Child Psychol Psychiatry 2007;48: 764–72.

10. Pariser SF, Nasrallah HA, Gardner DK. Postpartum mood disorders: clinical perspectives. J Womens Health 1997;6(4): 421–34.

11. Boyd RC, Amsterdam JD. Mood disorders in women from adolescence to late life: an overview. Clin Obstet Gynecol 2004;47(3):515–26.

12. Ege E, Timur S, Zincir H, Geçkil E, Sunar-Reeder B. Social support and symptoms of postpartum depression among new mothers in Eastern Turkey. J Obstet Gynaecol Res 2008;34(4):585–93.

13. Amankwaa LC. Postpartum depression, culture and African–American women. J Cult Divers 2003; 10(1): 23–9.

14. Affonso DD, De AK, Horowitz JA, Mayberry LJ. An international study exploring levels of postpartum depressive symptomatology. J Psychosom Res 2000;49(3):207–16.

15. O'hara MW, Swain AM. Rates and risk of postpartum depression – a meta-analysis. Int Rev Psychiatry 1996;8:37–54.

16. Golbasi Z, Kelleci M, Kisacik G, Cetin A. Prevalence and correlates of depression in pregnancy among Turkish women. Matern Child Health J 2010; 14(4): 485-91.

17. Cantwell R, Cox JL. Psychiatric disorders in pregnancy and the puerperium. Curr Obstet Gynaecol 2003; 13: 7–13.

18. Hayes M J, Roberts S, Davare A. Transactional conflict between psychobiology and culture in etiology of postpartum depression. Med Hypotheses 2000; 55: 266–76.

19. Gennaro S, Hennessy MD. Psychological and physiolo- gical stress: impact on preterm birth. J Obstet Gynecol Neonatal Nurs 2003;32(5):668-75.

20. Sumbuloglu K, Sumbuloglu V. Biostatistics. 8th edn. Hatipoglu Press, Ankara Turkey 1998.

21. Beck AT, Rush AJ, Shaw BF, Emery G. Cognitive therapy of depression. Guilford Press, New York, 1979.

22. Hisli N. One study on Beck Depression Inventory. J Psychol 1988;6:118–122.

23. Bjørka SE, Vangen S, Nordhagen R, Ytterdahl T, Magnus P, Stray-Pedersen B. Postpartum depression among Pakistani women in Norway: prevalence and risk factors. J Matern Fetal Neonatal Med 2008; 21(12): 889–94

24. Koyun A, Taşkın L, Terzioğlu F. Women health and psychological functioning in different periods of life: evaluation of nursing approach. Current Approaches in Psychiatry 2011; 3(1):67-99.

25. Çubukçu N. Women's education and the operational status in Turkey. Accessed August, 12, 2010 from: http://www.toprakisveren.org.tr/2006-69-nimetcubukcu.pdf.

26. Bruce ML, Hoff RA. Social and health risk factors for first-onset major depressive disorder in a community sample. Soc Psychiatry Psychiatr Epidemiol 1994; 29:165-70.

27. Swindle RW Jr, Cronkite RC, Moos RH. Risk factors for sustained nonremission of depressive symptoms: a 4-year follow-up. J Nerv Ment Dis 1998; 186(8): 462-9.

28. Ünal S, Özcan E. Precipitating, predisposing and protective factors in depression. Anatolian Journal of Psychiatry 2000; 1(1): 41-7.

29. O'Hara M, Swain A. Rates and risk of postpartum depression –a meta-analysis. Int Rev Psychiatr 1996; 8: 37-54.

30. Beck CT. A meta-analysis of predictors of postpartum depression. Nurs Res 1996; 45(5):297-303.

31. Beck CT. Predictors of postpartum depression, an update. Nurs Res 2001;50(5):275-85.

32. Rubertsson C, Waldenström U, Wickberg B. Depressive mood in early pregnancy: prevalence and women at risk in a national Swedish sample. J Reprod Infant Psychol 2003; 21:113-23.

33. Davis L, Edwards H, Mohay H, Wollin J. The impact of very premature birth on the psychological health of mothers. Early Hum Dev 2003;73:61-70.

34. Cryan E, Keogh F, Connolly E. Depression among postnatal women in an urban Irish community. Ir J Psychol Med 2001;18:5-10.

35. Buist A, Barnett B. Childhood sexual abuse: a risk factor for postpartum depression? Aust New Zeal J Psychiatr 1995;29(4):604-8.

36. Stewart D, Robertson E, Dennis C, Grace S. An evidence-based approach to post-partum depression. World Psychiatr 2004; 3:97–8.

37. Özbaşaran F, Çoban A, Kucuk M. Prevalence and risk factors concerning postpartum depression among women within early postnatal periods in Turkey. Arch Gynecol Obstet 2011;283(3):483-90.

38. Eberhard-Gran M, Eskild A, Tambs K, Samuelsen SO, Opjordsmoen S. Depression in postpartum and non-postpartum women: prevalence and risk factors. Acta Psychiatr Scand 2002;106:426–33.

39. Matthey S, Barnett B, Ungerer J, Waters B. Paternal and maternal depressed mood during the transition to parenthood. J Affect Disord 2000;60:75–85.

40. Danaci AE, Dinc G, Deveci A, Sen FS, Icelli I. Postnatal depression in turkey: epidemiological and cultural aspects. Soc Psychiatr Psychiatr Epidemiol 2002; 37: 125–9.

41. Nur N, Çetinkaya S, Bakır DA, Demirel Y. Prevalence of postnatal depression and risk factors in women in Sivas city. Cumhuriyet Medical Journal 2004; 26: 55–9.

42. Johnstone SJ, Boyce PM, Hickey AR, Morris-Yatees AD, Harris MG. Obstetric risk factors for postnatal depression in urban and rural community samples. Aust New Zeal J Psychiatr 2001;35:69–74.

43. Glasser S, Barell V, Boyko V, Ziv A, Lusky A, Shoham A. et al. Postpartum depression in an Israeli cohort: demographic, psychosocial and medical risk factors. J Psychosom Obstet Gynaecol 2000;21:99–108.

44. Yıldırım SG, Kısa C, Aydemir Ç. Postpartum depression. Journal of Psychiatry Psychology Psychopharmacology 2004;12 (Appendix 4):0-0.

45. Misri S, Corral M, Wardrop AA, Kendrick K. Quetiapine augmentation in lactation: a series of case reports. J Clin Pyschopharmacol 2006;26:508-11.

46. Kağıtcıbaşı Ç. Autonomy and relatedness in cultural context: Implications for self and family. J Cross-Cultural Psychol 2005;36(4): 403-22.

47. Patel V, Rodrigues M, DeSouza N. Gender, Poverty, and Postnatal Depression: A Study of Mothers in Goa, India. Am J Psychiatry 2002;159:43-7.

48. Chandran M, Tharyan P, Mulyil J. Postpartum depression in a cohort of women from a rural area of Tamil Nadu, India. Br J Psychiatry 2002;181:499-504.

49. Robertson E, Grace S, Wallington T, Stewart DE. Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen Hosp Psychiatry 2004;26:289-95.

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