

How does early cognitive behavioural therapy reduce postpartum depression?

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Summary

Postpartum depression (PPD) is a frequent mood disorder. Early identification of mothers at risk is crucial to successful prevention. Cognitive Behavioural Therapy (CBT) is an effective preventing therapy. Objectives of this study are to identify mothers at risk for PPD using the Edinburgh Postnatal Depression Scale (EPDS) and evaluate the efficacy of CBT for the prevention of PPD in these mothers. Women were recruited during their second postpartum day. Two groups were selected: mothers with high risk (EPDS score ≥ 10) and mothers with low risk (EPDS score <10) of PPD. The first group underwent CBT. Follow up was carried out at 40 days, three, six, and 12 months after childbirth. APGAR score, neonatal hospitalization, delayed breastfeeding, and cesarean section were significant obstetric risk factors. Mothers at high risk of PPD presented a statistically valid improvement of EPDS score. Mothers with low risk of PPD did not have CBT and showed a higher EPDS score than mother at high risk at 12 months. PPD prevention is possible through early identification of mothers at risk and early cognitive behavioural therapy.

Key words: Postpartum depression; Cognitive behavioural therapy; Prevention; Risk factors; Edinburgh Postnatal Depression Scale.

Introduction

Postpartum mood disorders represent the most frequent sort of maternal morbidity following delivery [1].

Postpartum depression (PPD) is a disabling condition affecting 8-15% of women [2] characterized by impaired maternal-infant interactions [3] and negative perceptions of infant behaviour [4]. Although during pregnancy and puerperium women are in systematic contact with the healthcare system, it is estimated that half of PPD cases go unrecognized, because women are afraid to express their negative feelings towards their child or care providers do not screen for, or are not able to recognize symptoms. Early identification of mothers at risk for PPD is crucial to successful prevention.

The Edinburgh Postnatal Depression Scale (EPDS) is a self-report ten-item questionnaire, specifically designed to assess PPD symptomatology in new mothers [5]. A recommended cut-off point of 9/10 has shown a sensitivity of 84-100% and a specificity of 82-88% for community screening [6, 7]. PPD treatment is based mainly on psychotherapy and psychotropic drugs.

Cognitive Behavioural Therapy (CBT) is a form of brief psychotherapy which aims to reduce symptoms by targeting and modifying negative patterns of thinking and behaviour.

The aims of the present study were to evaluate demographic, obstetric, and psychiatric risk factors of PPD in an inner-city population, to identify mothers at risk using the

EPDS and to evaluate the efficacy of early CBT for the prevention of PPD in these mothers.

Materials and Methods

The present study is based on an ongoing collaboration between the Obstetrics and Gynecology Department and the Postpartum Depression Prevention and Treatment Center of the Psychiatry Department of San Salvatore Hospital in L'Aquila.

The authors asked women who delivered in San Salvatore Hospital from January to August 2012, in their second postpartum day, to participate in this study. Patients were recruited after obtaining their written informed consent. Exclusion criteria were poor knowledge of Italian language and psychiatric diseases.

During the first assessment socio-demographic, obstetric and psychiatric data of all new-mothers were obtained. Consenting eligible women completed EPDS questionnaire while sitting alone in an examination room. Demographic data were about age, ethnic background, educational level, employment status, marital status, cohabitation.

Obstetric data included: history of chronic pathology, obstetric history, type of conception, women hospitalization during pregnancy, drug intake during pregnancy, gestational age, time and mode of delivery, hours of labour, APGAR score, birth-weight, neonatal hospitalization, etc.

Psychiatric data evaluated personal or familial history of psychiatric disorders, need of medical consultation, depression symptoms during previous and current pregnancies, previous or current treatment for psychiatric disorders, marital satisfaction, and quality of sleep.

The authors considered a score of 10 or more on the EPDS as a predictor of PPD. Consequently, all participants were divided into two groups: mothers with high risk (score ≥ 10) and mothers

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Table 1. — *Obstetric characteristics of the sample.*

Obstetrical variables	Range or frequency (%)	Median
Chronic pathology	17 (11%)	
Medication	11 (7%)	
Abortions	38 (25%)	
Primiparous	76 (50.3%)	
Conception:		
Spontaneous	139 (92%)	
Induced	12 (8%)	
Multiple births	7 (5%)	
Mother hospitalization during pregnancy	21 (14%)	
Medical assumption during pregnancy	45 (30%)	
Gestational age	28 w - 42 w	38.2 w
Preterm delivery (<37 weeks)	20 (13%)	
Mode of delivery:		
Cesarean section	64 (42%)	
Urgent	29 (45%)	
Hours of labor	1 h - 12 h	5.3
APGAR score < 7		
1'	9 (6%)	
5'	4 (3%)	
Birth-weight	1700-4630	3230
Low birth weight (< 2,500g)	6 (4%)	
Neonatal hospitalization	14 (9%)	
Postpartum complications	4 (3%)	
Timing of breastfeeding:		1h 52 m
< 6 h	95 (63%)	
6-12 h	2 (13%)	
12-24 h	6 (4%)	
24-48 h	18 (12%)	
Never	12 (8%)	

with low risk (score <10) of PPD. Both groups were contacted at 40 days, three, six, and 12 months after childbirth and they filled out the EPDS again. Mothers who screened positive with high risk of depression at the screening time (two days after delivery), were referred for a more thorough evaluation by psychiatrists of Postpartum Depression Prevention and Treatment Center of S. Salvatore Hospital. They underwent Cognitive Behavioural Therapy (CBT) in five to ten psychological weekly sessions. Women who scored 10 or more at 40 days, were screened as having PPD. Descriptive analysis were used with mode, frequency, and standard deviation, when it was necessary.

A Spearman non-parametric correlation was used to evaluate the association between continuous variables and EPDS score. Wilcoxon rank-sum test was used to test significant associations between other qualitative variables (mode of delivery, neonatal hospitalization, etc.), and EPDS score. Spearman and Chi-squared were used to test differences about demographic and obstetric variables between the two groups.

Results

The study resulted in 151 women of 513 who delivered between January and August 2012, signed informed consent, and completed questionnaire. A total of 252 refused to participate for various reasons (lack of time, lack of interest in the study protocol), and 102 patients did not complete follow up.

Table 2. — *Psychiatric characteristics of the sample.*

Psychiatric characteristics	Number of patients (%)
Personal history of mood disorders	20 (30%)
Previous prior medical consultation:	
GMD	1 (4%)
Neurologist	2 (11%)
Psychiatrist	1 (4%)
Psychologist	13 (65%)
Familiar history of psychiatric disorders	31 (20%)
Depression symptoms during previous pregnancy	18 (12%)
Depression symptoms during current pregnancy	22 (15%)
Previous treatment for depression	20 (13%)
Current psychiatric treatment	6 (4%)
Marital satisfaction	
Excellent relationship	92 (61%)
Good relationship	54 (36%)
Sufficient relationship	3 (2%)
Poor relationship	2 (1%)
Quality of sleep	
Excellent	30 (20%)
Good	63 (42%)
Sufficient	47 (31%)
Not sufficient	6 (4%)
Poor	5 (3%)
Unplanned/unwanted pregnancy	44 (29%)
Nausea during pregnancy	47 (31%)

Mean maternal age was 33.64 years (DS 5.834), 17.3% were non-EU women, 75.90% were married, for the most part attained secondary educational level (62.30%), 39.40% were full time working, and 91.15% lived with new family (baby's father and children). Obstetric and psychiatric data of the mothers are outlined in Tables 1 and 2. Among the 151 new mothers who agreed to participate in the study, 74 (49%) returned the 40-days postpartum questionnaire, 72 participants (47%) returned the three-month postpartum questionnaire, 57 (38%) returned the six-month, and 49 (32%) completed the 12th month follow-up assessment.

At the first assessment, the authors identified 22 mothers (14.5%) with EPDS scores higher than cut-off (score ≥ 10) and 129 mothers (85.5%) with EPDS score lower than cut-off (score < 10), which represented "mothers at high risk" and "mothers at low risk" of developing PPD, respectively. Among the 74 women who completed EPDS 40 days after delivery, 11 (14.86%) were identified as having signs and symptoms of PPD, showing EPDS score ≥ 10 .

Feeling of sadness during current pregnancy showed positive relationship with depressive mood during previous pregnancies (0.294; $p = 0.010$) and postpartum period (0.257; $p = 0.023$) and negative correlation with marital satisfaction (-0.242; $p = 0.003$). Moreover, good partner relationship was positively associated with desired pregnancy (-0.325; $p = 0.000$), ($p \leq 0.05$).

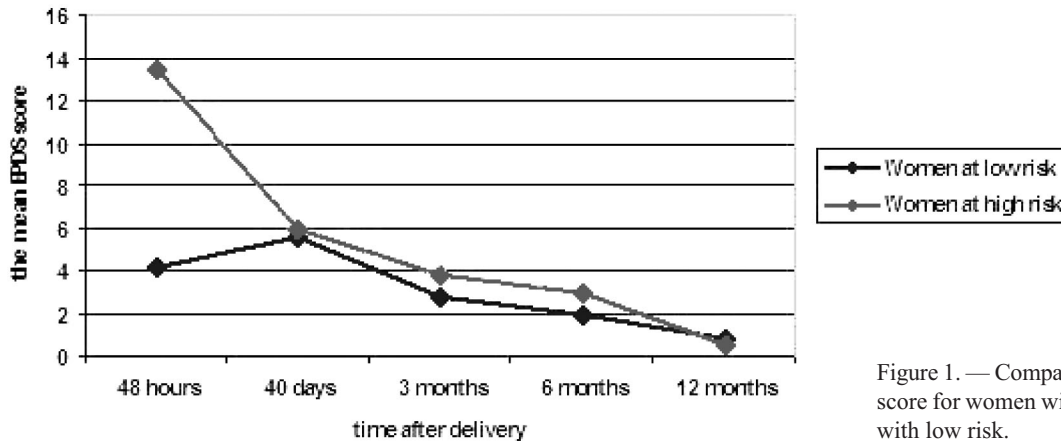


Figure 1. — Comparison of the mean EPDS score for women with high risk and women with low risk.

The present results have shown that EPDS score at screening time appear to be related to history of depression, depressive symptoms in previous pregnancies and in current gestation, previous treatment for depression, familial history of psychiatric disorders, marital satisfaction, and quality of sleep. The authors noted a significant relationship between the mean EPDS at screening time with delayed breastfeeding ($0.201, p = 0.01$) and between 40 days EPDS score and APGAR score ($-0.342, p = 0.04$) ($p \leq 0.05$). In addition, mothers who underwent cesarean section showed more depressive symptoms (mean 48-hour EPDS 6.3, standard deviation 4.1) than mothers who delivered vaginally (mean 48-hour EPDS 5.4, standard deviation 4.8) ($p = 0.05$). Moreover, at screening time and at 40 days after delivery EPDS score of mothers of infant admitted to neonatal intensive care unit (mean 48-hour EPDS 8.1, standard deviation 4.6; mean 40 days EPDS 8.1, standard deviation 6.3) was significantly higher than mothers of healthy term infants (mean 48-hour EPDS 5.5, standard deviation 4.4; mean 40 days EPDS 5.1, standard deviation 4.4) ($p = 0.02$). Spearman and Chi squared test did not detected significant differences about demographic and obstetric variables between mothers with high risk and mothers with low risk of PPD. On the contrary, the authors identified a positive relationship between mothers at high risk of PPD and some psychiatric items: personal history of mood disorders ($r = -0.259; p = 0.001$), previous treatment for depression ($r = -0.297; p = 0.000$), current treatment for depression ($r = -0.239; p = 0.003$), familial history of psychiatric disorders ($r = -0.167; p = 0.043$), quality of sleep ($r = 0.358; p = 0.000$), marital satisfaction ($r = 0.347; p = 0.000$).

Figure 1 illustrates the distribution of EPDS score: the authors compared the mean EPDS score of women with high risk and with low risk of PPD who completed follow up at 12 months postpartum. Mothers at high risk of PPD, who underwent CBT, presented a statistically valid improvement of EPDS score between the first (48 hours after

delivery) and the second assessment (40 days after delivery) ($p = 0.008$) and between the second and the third assessment ($p = 0.000$). In fact, depressive symptom were significantly reduced from pre-intervention to post-intervention. On the contrary, mothers with low risk of PPD, which did not have CBT, showed a slight decline of EPDS scores during the follow-up period, and higher EPDS score than mother at high risk at 12 months.

Discussion

In this study the authors examined demographic, obstetric, and psychiatric risk factors of PPD in the population living in L'Aquila in order to identify mothers at risk for PPD and to evaluate if early CBT could prevent PPD in these mothers.

The present results showed a PPD prevalence in line with the literature (14.86%) [5, 8]. Although many authors have identified specific risk factors for PPD, such as maternal age [9], race/ethnicity, education level [10], employment status, marital status, and unplanned/unwanted pregnancy [5], data from this study do not support these risk factors. According to most of the literature, the authors noted a significant relationship between PPD and obstetric variables: APGAR score (0.04) [11], neonatal hospitalization in Neonatal Intensive Care Unit ($p = 0.02$) [12], delayed breastfeeding ($p = 0.014$) [13,14] and cesarean section ($p = 0.05$) [15-18]. CBT and other psychological treatments are recommended by National Institute for Health and Clinical Excellence (NICE) guidelines for the treatment of both depressive and anxiety disorders [19]. Besides, numerous authors have demonstrated the effectiveness of CBT in the treatment of PPD. However, there have been few studies evaluating effectiveness of an early cognitive behavioural intervention for his prevention. The present study showed that mothers which underwent CBT had a significant decrease of EPDS score between the screening time and the 40 days after delivery assessment and between the first- and

third-month assessments. This finding suggests that early identification and treatment of mothers at high PPD risk can reduce the development of more serious mood disorders. However, the decline of the mean EPDS distribution curve of women at high risk at 40 days' postpartum might have been due to the fact that they could be affected by "baby blues". This mood disturbance affects 50% to 80% of new mothers during first two weeks postpartum and usually resolves spontaneously [20]. The recent literature suggests that women with baby blues symptoms are at high risk of developing postpartum major depression [21]. This is the reason why the present authors chose to enroll all mothers in the early postpartum period proposing EPDS as a screening test 48 hours after delivery.

Conclusion

The present results showed that PPD prevention is possible through an early identification of mothers at risk submitting all new mothers to EPDS 48 hours after delivery and providing promptly cognitive behavioural therapy to these mothers. Obstetricians, midwives, and neonatologists should be able to good counseling and screen new-mothers in order to identify the presence of risk factors for PPD and ensure a psychiatric management if necessary. In fact, a multidisciplinary approach may reduce the development of serious mood disturbance and of life-threatening consequences to the mother and her baby.

Limits of the present study are, at first, the small number of the sample and the absence of a control group of high risk mothers that did not have CBT. Despite these, the obtained results are encouraging and show that a brief CBT intervention can prevent the onset of more severe mood disorders in high risk mothers, however, larger studies are needed.

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