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SHORT REPORT

EARLY POSTNATAL DEPRESSIVE MOOD: ASSOCIATIONS WITH OBSTETRIC AND PSYCHOSOCIAL FACTORS

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Abstract—The central purpose of this investigation was to detect incidence and influencing factors on early postnatal depressive mood in a large hospital sample. By means of an interview we acquired information on sociodemographic data, physical and psychiatric anamnesis, and obstetric and psychologic variables. The Edinburgh Postnatal Depression Scale (EPDS) served to determine the depressive mood of our patients. The interview was carried out on 1250 women at two postnatal wards 5 days after delivery. According to the results of the German validation of the EPDS, where a cutoff of 9/10 indicates at least mild depressive disorder, the whole sample was divided into group A (EPDS score ≤ 9 ; $n=996$, 79.7%) and group B (EPDS score ≥ 10 ; $n=254$, 20.3%). Early postnatal depressive mood, as assessed by the EPDS, appeared with 20% of all women taking part in our investigation on the fifth postnatal day. Subjective measurements such as high childbirth burden, elevated trait anxiety, low life satisfaction and lower social class, and low birth weight of the infant seem to be of predominant relevance for early postnatal depressive mood. © 1999 Elsevier Science Inc.

Keywords: Burden of childbirth; Cesarean section; Early postnatal depressive mood; Edinburgh Postnatal Depression Scale; Low birth weight; Maternity blues.

INTRODUCTION

Approximately 50% of the mothers are struck by “maternity blues,” a term referring to a brief period of dysphoria that occurs a few days after childbirth. Symptoms may include anxiety, irritability, headaches, depersonalization, confusion, and forgetfulness [1]. Although depression does not seem to be the essence of maternity blues, the scales for measuring “maternity blues” from Pitt, Stein, Kendell et al., and Kennerly and Gath include items assessing depression.

The prevalence of depression in postnatal women is similar to that found in the general population of women, and a threefold increased risk of depression within the first month after delivery has been shown [2]. Regarding depressive mood, Hannah [3] reported a highly significant positive correlation between ratings of 217 women at 5 days and 6 weeks postpartum using the Edinburgh Postnatal Depression Scale (EPDS). In addition, Hannah [3] noted that it would be worthwhile to

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screen all women at 5 days postpartum using EPDS to identify individuals most vulnerable to postpartum depression. A close relationship between maternity blues and postpartum depression was reported by Fossey [4].

Our aims were: first, to study the incidence of early postnatal depressive illness at 5 days after delivery by using the German version of the EPDS; second, to evaluate influencing sociodemographic, psychological and obstetric risk factors; and third, to calculate the impact of the different variables for early postnatal depressive mood.

METHOD

Subjects

The study sample was recruited from two postnatal wards at the Department of Obstetrics and Gynecology at the University of Innsbruck, Austria. In the order of hospital entrance and fulfillment of inclusion criteria (German mother tongue, single pregnancy, no peridural or spinal anesthesia during parturition, and informed consent), 1250 women participated in the study on the fifth postpartum day. The average stay at the maternity ward postpartum generally extended up to 6 days after vaginal delivery and 9 days after cesarean section.

Assessment

The screening visit consisted of an interview collecting information about age, occupation, marital status, job satisfaction, case history, obstetric variables (parity, risk in pregnancy, gestational age at delivery, length of vaginal delivery, mode of delivery, analgesic medication during labor, newborn gender, newborn weight) and psychological variables (burden of childbirth, life satisfaction, desire for offspring, trait anxiety, depressive mood).

Burden of childbirth (subjective stressful experience of delivery), life satisfaction, and desire for offspring were measured as a global impression on a scale from 1–7 by the women. The following scales were used:

1. State–Trait Anxiety Inventory (German version of the original by Spielberger from Laux [5], Scale X2—trait anxiety).
2. The Edinburgh Postnatal Depression Scale (EPDS, German version of the original by Cox [6] from Bergant [7]), a ten-item self-report scale assessing depressive symptoms in postpartum women. Each item is scored on a four-point scale (0–3), the minimum and maximum total score ranging from 0 to 30, respectively.
3. The German validation of the EPDS (carried out at the maternity ward; the instruction was to check the answer that came closest to how “you” felt since delivery), revealed by using clinical research criteria from the International Classification of Diseases, 10th edition (ICD-10) [8] and a cutoff point of 9/10 that the sensitivity of this measurement has been found to be 95.5% and the specificity 100%.

For statistical analysis, the SPSS statistics package was used (correlations calculated by Spearman rank coefficient, group comparisons [group A vs. group B] by Mann–Whitney *U*-test and the Pearson chi-square test, multiple logistic regression analysis; $p < 0.05$ considered significant).

RESULTS

Subjects

Altogether, 1257 women were asked to participate in this study, of whom 7 (0.6%) refused to be interviewed. The average age (mean) of the 1250 women was 28 years, 48% were primiparous, 78% were married, and 5% had no actual partnership.

The mean EPDS score was 5.5 points (median 4; minimum 0, maximum 28). A score of zero was assessed by 17.2% of the women; 20.3% had an EPDS score of ≥ 10 . According to these results, the whole sample was divided into group A (EPDS score ≤ 9 ; mean 3.4; median 3; minimum 0, maximum 9; $n = 996$) and group B (EPDS score ≥ 10 ; mean 13.6; median 13; minimum 10, maximum 28; $n = 254$).

Table I.—Early postnatal depressive mood: multiple logistic regression analysis^a

	Wald statistics	<i>p</i> -Value
Burden of childbirth	28.4230	<0.0001
Trait anxiety	24.1292	<0.0001
Life satisfaction	17.5248	<0.0001
Professional occupation (<i>df</i> = 4)	15.6438	<0.01
Mode of delivery (<i>df</i> = 3)	6.0633	NS
Newborn's weight	3.9735	<0.05
Previous abortions	1.9408	NS
Age	0.9624	NS
Desire for offspring	0.7732	NS
Gestational age at parturition	0.4441	NS
Length of delivery	0.2414	NS
Job satisfaction	0.2132	NS
Parity	0.1044	NS
Any prior psychopharm. medication	0.0534	NS
Partner compatibility	0.0251	NS
Risk in pregnancy	0.0009	NS

Key: ns, not significant ($p > 0.05$); *df*, degrees of freedom.

^a Group A (EPDS score ≤ 9 , $n = 996$) vs. group B (EPDS score ≥ 10 , $n = 254$).

Associations of high EPDS scores

Table I shows the most influential variables on EPDS scores calculated by multiple logistic regression analysis. The variables in Table I were selected from all data by using Spearman rank correlation and results from group comparisons (group A vs. group B).

The scores of Wald statistics reveal a quantitative impact on EPDS score. The highest risk associated with a high EPDS score is found for high childbirth burden, followed by high trait anxiety, low life satisfaction, low professional occupation, and low newborn weight. Using regression analysis, five variables (higher risk in pregnancy, mode of delivery, more previous abortions, lower job satisfaction, lower partner compatibility) of the group comparisons (group A vs. group B) lost their significant impact on EPDS score because of interdependence of variables.

DISCUSSION

The EPDS is highly specific and sensitive for the detection of postnatal depression when used 6 weeks after delivery [6]. Hannah [3] employed the EPDS at 5 days and 6 weeks postpartum. A highly significant positive correlation between the two scores, together with similar symptom profiles, was found. Being aware of the fact that, at around the fourth postnatal day the presence of maternity blues is peaking, an EPDS score of ≥ 10 indicated an at least mild depressive disorder. The German validation study of the EPDS (7, $n=110$) revealed that 25 women (23%) showed "pure" symptoms of maternity blues and 22 women (20%), who showed mainly depressive symptoms, scored >9 on the EPDS, which is comparable to this investigation on a large sample, where the rate of women scoring ≥ 10 on the fifth day after delivery amounts to 20.3%.

The impact of stressful deliveries on postnatal depressive mood is a subject of controversial discussion. O'Hara [9] found that postnatally depressed women had

less stressful deliveries. In contrast, Hannah [3] showed a strongly significant impact of a delivery that was more difficult than expected (on EPDS score) 5 days after delivery. Our data confirm the results of Hannah [3] insofar as childbirth burden revealed the strongest significant influence on EPDS score for group comparison (group A vs. group B) as well as for multiple regression analysis. The relationship between childbirth burden and depression score (both subjective measures) raises the question about interdependence. The correlation coefficient ($r=0.18$) between these variables is rather low, which does not confirm a possible close dependence.

Regarding life satisfaction and trait anxiety, regression analysis revealed a strong impact on EPDS score. Life satisfaction is an essential aspect of illness experience and illness behavior and, as such, is a basic condition of psychosocial and occupational rehabilitation [10]. Elevated anxiety is a frequently found phenomenon in the early puerperium, which is not simply limited to first time mothers. Anxiety about the baby thriving, excessive solicitude and sensitivity to the slightest indication of illness, and fear that simple tasks would put the baby at risk was well described by Moll [11].

Our findings are in agreement with Hannah [3], who reported that low birth weight is associated with a high EPDS score on the fifth day postpartum. Gennaro [12] found that mothers of preterm infants were significantly more depressed than mothers of term infants in the first week postpartum. In addition, no differences could be observed among mothers of premature infants in initial depression, based on the level of illness of the infant. The low birth weight is mostly confined to women with cesarean section. The multiple regression analysis failed to confirm the strong impact of cesarean section on EPDS score. Low birth weight is the consequence of different obstetric problems, which indicates termination of pregnancy by cesarean section. The role of low newborn's weight in connection with cesarean section as an "objective risk factor" should be included in future investigations.

REFERENCES

1. Brockington IF. Motherhood and mental health. Oxford: Oxford University Press 1996:147.
2. Cox JL, Murray D, Chapman G. A Controlled study of onset, duration and prevalence of postnatal depression. *Br J Psychiatry* 1993;163:27-31.
3. Hannah P, Adams D, Lee A, Glover V, Sandler M. Links between early post-partum mood and postnatal depression. *Br J Psychiatry* 1992;160:777-780.
4. Fossey L, Papiernik E, Bydlowsky M. Postpartum blues: a clinical syndrome and predictor of postnatal depression? *J Psychosom Obstet Gynecol* 1997;18:17-21.
5. Laux L, Glanzmann P, Schaffner P. State-Trait-Angstinventar (STAI) from C.D. Spielberger. Weinheim: Beltz Testgesellschaft 1981.
6. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *Br J Psychiatry* 1987;150:782-786.
7. Bergant AM, Nguyen T, Heim K, Ulmer H, Dapunt O. Deutsche Fassung und Validierung der "Edinburgh Postnatal Depression Scale" (EPDS). *Dtsch Med Wschr* 1998;123:35-40.
8. Dilling H, Mombour W, Schmidt MH, Schulte-Markwort E. Internationale Klassifikation psychischer Störungen ICD-10 Kapitel V (F) Forschungskriterien. Bern: Hans Huber 1994.
9. O'Hara MW. Social support, life events, and depression during pregnancy and the puerperium. *Arch Gen Psychiatry* 1986;43:569-573.
10. Fahrenberg J, Myrtek M, Wilk D. Multimodale Erfassung der Lebenszufriedenheit: Eine Untersuchung an Herz-Kreislauf-Patienten. *Psychother Med Psychol* 1986;36:347-354.
11. Moll L. Die Maternitätsneurose. *Wien Klin Wschr* 1920;33:160-162.
12. Gennaro S. Postpartal anxiety and depression in mothers of term and preterm infants. *Nurs Res* 1988;37:82-85.