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Original contribution

Contribution to the epidemiology of postnatal depression in Germany – implications for the utilization of treatment

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Summary

Using a longitudinal screening model, 772 mothers were screened for postnatal depression after delivery in Stuttgart (Germany). This model contained the Edinburgh Postnatal Depression Scale (EPDS) and the Hamilton Depression Scale (HAMD). The first screening was 6–8 weeks after delivery with the EPDS. Mothers with high scores in the first screening had a second screening 9–12 weeks after delivery with the EPDS at least three weeks after the first. Mothers with high scores in both screenings were investigated with the Hamilton Depression Scale (HAMD).

Classification was performed with the DSM-IV. After observation until the third month after delivery, 3.6% (N = 28) of the 772 mothers were diagnosed with postnatal depression. Various methods of therapy were offered to those mothers. 18% (N = 5) accepted one or more of these methods of treatment. The rest of the mothers with postnatal depression refused – mostly for attitudinal or practical reasons. 13.4% of the mothers showed high scores in the first screening but not in the second. For those mothers a longitudinal observation is currently being performed to distinguish between a depressive episode and a depression with oscillating symptoms.

Keywords: Postnatal depression; screening; utilization of treatment.

Introduction

Frequency of depressions

According to WHO data depressions are one of the most important diseases in developed countries. The „Kompetenznetz Depressionen", a support and research organization estimates that in Germany about 5% of the population, or 4 million people, suffer from depression worthy of treatment (Hegerl, 2003). Using self-appraisal instruments for the calculation of prevalence the numbers vary between 11% and 26% (Eaton and Kessler, 1981). Using clinical interviews the prevalence is clearly lower – 2% to 13% (Hautzinger and Bailer, 1993). The rates for women are double those for men. Wittchen and v. Zerssen reported a 6-month-prevalence of 3% for men and 4.5% to 9.3% for women (Wittchen and v. Zerssen, 1988).

In the Depression 2000 study in Germany (Wittchen et al., 2000) it was found, that the point prevalence (past 4 weeks) of depressive disorders in Germany was 6.3%. In women this prevalence was higher (7.8%) than in men (4.8%). In the subgroup of women between 18 and 35 years it was 5.6%.

Depressions occur less in Germany than in the US (Andrade et al., 2003; WHO, 2004). In the survey of the World Health Organisation (WHO, 2004) the twelve-month prevalence of mood disorders (dysthymia, major depressive disorder, bipolar I and II disorders) in the US was 9.6%, in Germany 3.6% (without bipolar disorders).

Postnatal depressions

There is a difference between postnatal depression and the so-called baby blues. The main symptoms of baby blues are sadness and affect-lability. About 50% of mothers suffer from baby blues after delivery (Lanczik and Brockington, 1999). Mostly symptoms appear between the second and fifth day after delivery and disappear soon after. When the depressive symptoms persist or appear after the first ten days after delivery they

can last for weeks or months or in severe cases for years. For a safe diagnosis of a postnatal depression, symptoms should begin during the first two months after delivery.

According to mostly Anglo-American literature, postnatal depression occurs in about 10% of delivering mothers (Cooper and Murray, 1998). Some authors have indicated higher rates of occurrence. Harris and coworkers found depressive episodes in 15% of mothers at the end of the second month after delivery (Harris et al., 1989). Reighard and Evans (Reighard and Evans, 1995) found 19.9% of observed mothers to have a postnatal depression at the end of the second month after delivery. Other research groups had lower rates. For instance Lee and coworkers in Hong Kong found that 5.5% of mothers had postnatal depressions (Lee et al., 1998). In a literature review Riecher-Rössler reported a rate of 10–15% of delivering mothers having depressive symptoms or developing a depression after delivery (Riecher-Rössler, 1997).

The Edinburgh Postnatal Depression Scale (EPDS) is widely used for screening postnatal depressive mothers. The Edinburgh Scale is a 10-item questionnaire to be completed by the mother herself. It was presented first by the Scottish psychiatrist Cox (Cox et al., 1987). Sensitivity of the original scale was 86% and the specificity was 78%. Harris (Harris et al., 1989) was able to show that the Edinburgh Postnatal Depression Scale had higher sensitivity and specificity in screening for postnatal depression than the Beck Depression Inventory (BDI). Translations that have proved to have sufficient validity exist in several countries (Bergant et al., 1998; Carpiniello et al., 1997). Bergant and coworkers (Bergant et al., 1998) used the research criteria of the ICD 10 (Dilling et al., 1994) for depressive illness to validate the German translation.

Symptoms of postnatal depression do not differ from symptoms of depression occurring at any other time of life. But the delivery of a child and the time immediately after that causes a lot of psychosocial stress for the mother (e.g. new situation, change of relationship) that is not present in other phases of life. Depression and psychotic illness start more often during the first months after delivery than at any other time in the life of women (O'Hara, 1997). A correlation between hormonal changes during the first weeks after delivery and the beginning of depression has been observed in several investigations (Nispel, 1996) Some authors have found that child development is affected after the postnatal depression of a mother (Sharp et al., 1995). For these reasons, we think that the title "postnatal" is nevertheless justified.

The aims of this study were:

a. To estimate the prevalence of postnatal depression in Germany during the first three months after delivery in a prospective investigation.
b. To observe the utilization of treatment in mothers with a postnatal depression.

Study participants and method

Screening

The study was performed in collaboration with the Marienhospital in Stuttgart (Germany) and two community midwives. Mothers were screened in the same order in which births occurred. Mothers who did not speak German were excluded. In the first week after delivery all mothers were investigated for obstetric and social parameters. Interviews were held in the hospital or by telephone. For screening, the German version of the Edinburgh Postnatal Depression Scale (EPDS) was used (Bergant et al., 1998). Bergant and coworkers found in their validation, that a score of 9.5 was the best for diagnosis and showed a sensitivity of 0.955 and a specificity of 1.0. In the reliability analysis, the Guttmann split half reliability was 0.82 and the α-coefficient 0.81.

The first screening for postnatal depression was 6–8 weeks after delivery. At that time the mother was required to fill in the Edinburgh Postnatal Depression Scale (EPDS 1). The questionnaire was either sent to the mothers or completed over the telephone. All scores above 9.5 were categorised as high. All mothers with high scores in EPDS 1 were reinvestigated 9–12 weeks after delivery. The time between first and second screening was at least 3 weeks. In the case of a second high score, a Hamilton interview (HAMD) was performed (CIPS, 1986). The German version of the HAMD has shown a Cronbach Alpha of between 0.73 and 0.88 (Baumann, 1976). Its correlation with the Beck Depression Inventory (BDI) has been reported at $r = 0.52$ to 0.98 (Hedlund and Vieweg, 1979).

With the HAMD a DSM-IV classification by clinical judgement was done by a clinical psychologist or a psychotherapist (Ballestrem et al., 2001). As far as possible the clinical interviews were performed at the Centre for Psychotherapy Research in Stuttgart. In cases of practical complications for the mother the clinical interview was performed in their house. Figure 1 shows the exact structure of the investigations.

The definition of a postnatal depression is that symptoms start within 6 to 8 weeks after delivery (Cox et al., 1987; APA, 1994). Therefore in mothers whose symptoms started after that time, depressions were not classified as "postnatal".

Therapeutic help for depressive mothers

Therapeutic help was offered to those mothers with a postnatal depression according to DSM-IV criteria. This help consisted of a self-help group, outpatient psychiatric treatment, outpatient psychotherapy or inpatient therapy. The reaction of the mothers was documented. In those cases

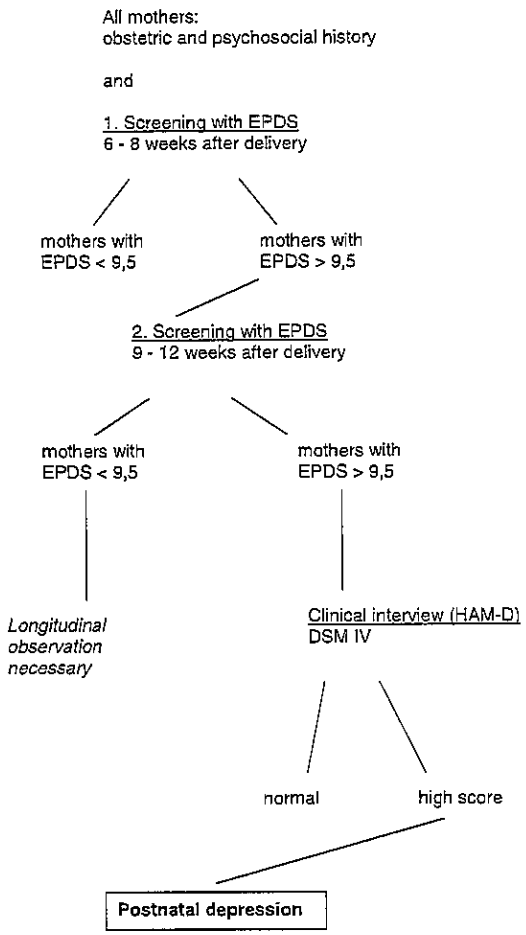

Fig. 1. Flow chart in screening for postnatal depression with the Edinburgh Postnatal Depression Scale (EPDS)

where all therapeutic possibilities were refused, the reasons given by the mothers were noted.

Statistical analysis

640 mothers from 772 had no depressive symptoms in the postnatal period. Obstetric and psychosocial parameters of these mothers were compared to those who had a clinical diagnosis of postnatal depression during the first three months after delivery (N = 28). Mothers who only had a high score in the EPDS 1 but not in the EPDS 2 were not used (N = 104). The analyses were performed with the Statistical Package for the Social Sciences (SPSS, version 10.0). The χ^2-test was used for categorical data. A p-value >0.05 was not significant, a p-value $\leq$0.05 was significant and a p-value $\geq$0.01 was scored as highly significant.

Results

Screening

The investigations were performed from 1998–2000 over a period of 18 months. During this time 2990 children were delivered in the Marienhospital. The community midwives delivered 149 children. All together 1102 German-speaking mothers were asked to participate in the study, of which 812 (73.7%) consented. 772 had undergone all examinations that were necessary for useful data. The dropout rate was 4.9%.

Table 1. Sociodemographic parameters of the investigated mothers (N = 772)

Summary of investigated mothers	772
Nationality	German: 84.2% other countries: 15.8%
First pregnancy	47.7%
Mean age (mean value)	31.3 years (minimum 17, maximum 45)
Deliveries in hospital	96%
Deliveries at home	4%
Married	83%
Not married – in partnership	11.8%
Alone	5.2%
Sex of the newborn	male: 49.2% female: 50.8%

Table 1 shows the sociodemographic data of the 772 investigated mothers. In the first screening with the Edinburgh Postnatal Depression Scale (EPDS 1) 132 mothers (17%) showed high scores of over 9.5 points. 640 mothers had normal scores. The second screening of the 132 mothers who had a high score in the first screening showed that 28 mothers (3.6%) had high scores in the Edinburgh Postnatal Depression Scale (EPDS 2) again. All of these mothers had DSM-IV criteria for depression.

Comparison of psychosocial and obstetric parameters showed that the group of mothers without depressive symptoms and the mothers with postnatal depression had differences in some factors but no differences in others (Table 2). Mothers delivered by caesarean section had slightly lower rates of postnatal depression than mothers that delivered spontaneously, but this difference was not significant. Mothers with postnatal depression showed symptoms of baby blues slightly more often. But the difference was not significant. The status of partnership had little influence on prevalence of postnatal depression. However, the difference concerning support by the mother's partner was significant. Those mothers who had a postnatal depression, complained more often about low or no support by the partner (39.3%) than mothers without depressive episodes after delivery (12.3%). This difference was significant.

Therapeutic help for depressive mothers

Therapeutic help was offered to those mothers (N = 28) who showed postnatal depression during a 3 month period after delivery. 5 of these mothers (18%) accepted one or

Table 2. Comparison of psychosocial and obsteric parameters in mothers without depressive symptoms and mothers with postnatal depression

Parameter	Without depressive symptoms N = 640	Postnatal depression N = 28	χ^2-test p-value
Mode of delivery:			
Spontaneous delivery	63%	71%	≥ 0.05 n.s.
Forceps	8%	7%	≥ 0.05 n.s.
Caesarean section	29%	21%	≥ 0.05 n.s.
Number of deliveries:			
Para 1	58%	36%	not possible
Para 2	31%	50%	not possible
Para >2	11%	14%	not possible
Location of delivery:			
Hospital	96.7%	92.9%	>0.05 n.s.
Home	3.3%	7.1%	>0.05 n.s.
Breast-feeding	92.8%	96.4%	>0.05 n.s.
Baby blues	39.1%	46.4%	>0.05 n.s.
Sex of the newborn:			
Male	49.8%	35.7%	>0.05 n.s.
Female	50.2%	64.3%	>0.05 n.s.
Mode of partnership:			
Alone	4%	7%	>0.05 n.s.
Partnership – not married	12%	14%	>0.05 n.s.
Married	83%	79%	>0.05 n.s.
Support from the partner low or not present	12.3%	39.3%	≤ 0.01**
History:			
With depressive episode during the pregnancy	2.8%	10.7%	≤ 0.05*
With psych. illness in the history	12%	32%	≤ 0.05*
With depressive episode in the history	7.0%	21.4%	≤ 0.05*
Family disposition			
(parents, brothers and sisters)	21%	29%	>0.05 n.s.

n.s. not significant, * significant, ** highly significant.

more of the therapeutic possibilities. The remaining women gave mostly attitudinal or practical reasons for refusal of therapeutic help. 39% of the mothers refused for attitudinal reasons (for instance: "I refuse all psychiatric or psychotherapeutic help, because I don't think, they help me."), 26% refused for practical reasons (for instance: "I don't have time."). 35% of these mothers didn't give any reason for refusing therapeutic help.

Case reports from the group of high scoring women

Three example cases are described below. For anonymity metaphors were used to characterise the women.

Case report 1 – "The sad, black swan"

The first time mother was 34 years old, from southern Europe, married and employed as a social worker. A couple of years prior to the study she had undergone Gestalt psychotherapy due to relationship problems with her partner. She had found the psychotherapy to be a positive experience. At that time she had another partner. Until the fifth month of pregnancy she had suffered from vomiting and from time to time she had to stay at home from work. Her son was delivered by Caesarean section with 4300 gram. At first she felt well, but from the fourth day postpartum she had nightmares and feelings of anxiety, so that the clinical psychologist was sent for twice. At the first screening she had high scores, at the second screening she felt much worse – she was very depressive. She came to a clinical interview and fulfilled the DSM-IV criteria for depression. Apart from her husband nobody knew about her poor state. He was supporting her, but was self-employed and had little time, and they argued frequently. During the interview, professional help was offered to her, and she chose behaviour psychotherapy with a psychologist who saw her in the

hospital, which was arranged for her. In spite of a positive experience with her previous psychotherapy, she needed help from the research team to make this step. The psychotherapy took a successful course and was finished about one year after delivery. She then felt much better, became more engaged in her job and was very active in her leisure time.

Case report 2 – "The glossing over woman"

This woman was over thirty, married and had a daughter of three years. She remembered having a quite a long depressive mood six years ago. After a job change she felt better and her relationship worked better, too. She had been out of work since the birth of her daughter three years ago, and her husband always came home from work late in the evening – so his support was low. She had a good pregnancy and delivered her son at home without complications. She was exhausted after the birth, and her daughter was jealous. She had high scores in the first screening – she suffered from fear, grief, guilt and depressive feelings, and sometimes she had thoughts of suicide. At the second screening she had high scores again. Subsequently she tried to gloss over her state at the first screening. The clinical interview took place at home – no symptoms present in the prior two weeks could be established. Her state was astonishingly much better, but she was offered treatment nonetheless. The midwife reported that the woman had repeated depressive phases. The woman's mother had experienced a postnatal depression with an oscillating course, so the interview may have taken place in a good phase. We had the impression that she tended to gloss over her state. Therapy was out of the question for her.

Case report 3 – "The blocked power woman"

The 33-year old married dynamic graduate had recently delivered her first child. She had been in a relationship for a long time which was very positive. Her husband appeared to help her with the child substantially – however it was not enough for her. Her job was important to her and she liked it – she seemed to be successful and ambitious. In her case history she had a psychoanalytic treatment of bulimia, and although she was no longer bulimic, her view of her psychotherapy was ambiguous. She had a good pregnancy, and her daughter was born by Caesarean – the anaesthetic was a nightmare for her, followed by hallucinations and in her week on the gynaecology ward where she was confused and cried a lot. She was offered treatment if she felt she needed it, whereupon she calmed down. The daughter had three-month-colics. At the first screening she had high scores, and suffered from anxiety and feelings of being overstressed and sometimes had thoughts of suicide. At the second measurement she felt much better and had very low scores. 13 months postpartum she contacted us again due to her poor state. After an intensive talk it became clear that she had had a severe depression in the last thirteen months with an oscillating course. She said it would be better to get professional help and intended to take psychotherapy; but after Christmas she felt much better and stabilised. This case is a reminder that following the symptoms beyond the third month makes sense.

Discussion

Prevalence of postnatal depressions

Many studies have only one point in time to measure the occurrence of postnatal depression. This point is mostly at the end of the second month. In our study there is a second screening in the third month after delivery, a procedure recommended by Cox (Cox et al., 1987). In our group most mothers with high scores at screening 1 (EPDS 1) had normal scores in the course of third month postpartum. This is the observation of Cox (Cox et al., 1987), too. In our opinion this second screening is important to differentiate women with depressive mood from women with postnatal depression.

A depressive mood could also be an indicator for an oscillating symptom course. At the moment we have long-term observations with as many women as possible with high scores at the first screening to investigate this question.

The prevalence of postnatal depressions based on DSM-IV criteria by observing women three months after postpartum is 3.6%. This could be an indicator that postnatal depression has a lower frequency in Germany than in Anglo-American countries; there the prevalence data are mostly around 10% (Cooper and Murray, 1998) or higher (Kumar and Robinson, 1984). The newest data from Bavaria show a prevalence of 3.3% over the whole first year after delivery based on DSM-IV criteria (Kurstjens and Wolke, 2001). These data fit better to our findings. However one must take into consideration that in the Bavarian study the diagnosis is given retrospectively, seven years after delivery. But it is also necessary to address, that in our study self-rating questionnaires were used and no diagnostic questionnaires.

It seems, that in Germany and other European Countries prevalence rate of postnatal depression is not very different from prevalence rate of depression at any other time in women's life. Wickberg and Hwang (Wickberg and Hwang, 1997) investigated a community sample of 1 584 women in Sweden with the EPDS. Using a threshold of 11.5 they found 12.5% at 8 weeks postpartum and 8.3% at 12 weeks postpartum. But the period prevalence for 8 to 12 weeks postpartum was only 4.5%. These results are similar to the presented study. Wickberg and Hwang propose a two-stage screening to identify women at risk for more persistent postnatal depression. This is a recommendation we can support. In Austria a screening on 3 087 mothers was performed with the EPDS three and six months after delivery (Herz et al., 1997). With a threshold of 9.5 three months after delivery 15.7% mothers were found and 13.6% six months after delivery. But only 7.5% had high score for three and six months postpartum. This is an other observation of reduced number of mothers with a persistent postnatal depression. The time of investigation was different to our study.

Some authors suppose that a Caesarean section is a risk factor for postnatal depressive symptoms (Nispel, 1996). Such a correlation could not be found in our sample. Mothers with Caesarean sections and spontaneous deliveries showed about the same rate of high scores. It is possible that Caesarean section does not always have an influence on postnatal mood.

Utilization of therapeutic treatment

There are many studies about utilization of therapeutic alternatives for treating mental disorders. In the "Mannheim Cohort Project on Prevalence and Course of Psychogenic Disorders" – a study about the occurrence of mental diseases in the general population found the following: only 3% of those persons who were considered worthy of treatment decided on psychotherapeutic treatment on their own. When motivated the rate was 33% (Franz et al., 1990; Franz, 1997). In the "Upper-Bavarian Field-Study" the utilization of psychiatric treatment by people with a depression was examined (Meller et al., 1989), and it was found that only 23.9% received treatment. Possibly the motivation of women with postnatal depression is lower because of their special situation after delivery. In an American study 21.4% of women with postnatal depression got therapy (Campbell and Cohn, 1997). This corresponds to the 18% of women in our sample, who made use of therapeutic help.

Conclusion of the case reports

The case reports show that even in case of a severe postnatal depression ("The blocked power woman") a woman can refuse professional help. Obviously other women try to gloss over their symptoms ("The glossing over woman"). Therefore they see no reason for therapy. Also in case of a successful therapy in one's history ("The sad, black swan") some women with postnatal depression need a motivation to utilizate professional help once more.

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