

Postnatal depression: a review of recent literature

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SUMMARY. *Depression affects 5–22% of women after childbirth. Some women with postnatal depression will experience a prolonged or relapsing illness that may last until their children enter school. It has adverse effects upon the coping abilities of women, their relationships with their infants, partners and social networks and may adversely affect the educational attainment and behaviour of their children. Since many more women are now active in the workforce, the effects of postnatal depression have obvious economic consequences both for their families and their employers. This article discusses the association between depression and the puerperium and reviews the evidence for vulnerability factors that may make a woman prone to depression. It is suggested that women with, or vulnerable to, postnatal depression can be identified and helped.*

A personal introduction

An audit of my workload revealed that 10% of consultations in January 1988 were with women suffering from what I diagnosed as postnatal depression and a review of the records of 50 primigravidae who had their babies delivered in 1987 showed that 12 (24%) of them had consulted the doctor with depression in the year after delivery. Two thirds of the 12 women had been severely affected by their illness and three quarters had received medical certificates for postnatal depression.

At a talk on postnatal depression to the members of a local young practitioners group I was surprised that all of them responded with the observation: 'We never see it' and I wondered why so few of my colleagues acknowledge that they see women with postnatal depression.

What do my patients suffer from? Do I mistakenly generate the diagnosis postnatal depression in tired tense women overwhelmed by adverse social circumstances and the demands of a new baby? Is it simply a label to enable women to receive sickness benefit? (personal comment by a regional medical officer). If large numbers of women do have postnatal depression why do my colleagues in primary care not seem to recognize it? I decided to turn to the literature to discover the answers to these questions and to the problems my patients were facing after childbirth.

Incidence and prevalence of postnatal depression

Postnatal depression has been reported and studied since 1858.¹ It has been differentiated from postnatal blues that affects up to 80% of women from the third to fifth day after delivery and puerperal psychosis that affects one in 1000 women following childbirth.¹ The recent literature documenting the incidence, prevalence, causes, effects and management of postnatal depression is reviewed below to clarify the challenges and opportunities that postnatal depression presents to the general practitioner.

Satisfactory prospective studies have now been published²

that use the comparable and well validated psychometric rating scales that have only become available in recent years. All but two of the 17 studies reported in the last decade were based on populations of women identified at hospital antenatal clinics, studied by psychologists and psychiatrists. The two based in primary care were both carried out in the UK.^{3,4} The samples studied in the 17 studies varied in size from 52 to 483, with the majority of studies recruiting more than 100 patients. Patients with miscarriages or stillbirths were routinely excluded.

Some studies only recruited married women⁵⁻⁹ while in others single women were included, the proportions of single women ranging from 2%¹⁰ to 22%.¹¹ Three studies did not report marital status.^{3,12,13} Patients were recruited either at booking and during the first trimester^{3-5,8,11-15} or during the second and third trimesters.^{6,7,9,10,16-19} Primigravidae were recruited alone^{6,7,9,11} or made up 33%¹⁹ to 55%¹⁰ of the total sample. They were assessed on up to 18 occasions¹⁵ using either self-rating scales,^{4,7,12} structured interviews^{3,14} or a combination of self-rating scales and either unstructured¹⁸ or structured^{5,6,8,10,13,15-16,19} interviews. One study used both an unstructured and a structured interview.¹¹ Nine different rating scales were used to identify patients with depression: the Beck depression inventory,^{6,9,10,13,16-18} the standardized psychiatric interview,^{5,9,13-15,19} the schedule of affective disorder and schizophrenia;^{8,17} the mood adjective checklist;^{15,18} the Hamilton rating scale for depression;^{4,6} the Zung self-rating depression scale;^{7,12} the present state examination;^{11,19} and the Montgomery and Asberg depression rating scale.¹⁹

The results of the recent studies are presented in Table 1. They show that between 5.2% and 22.0% of the women studied were depressed when assessed after childbirth. The depression was found to impair the coping abilities of women with postnatal depression,^{3,10,11,14} their marital relationships^{3,7,11,14} and their children in particular.

Two factors have been suggested to account for the wide variation between these results. Cooper and his colleagues¹⁹ who used the present state examination comment: 'The criteria used in the present state examination for establishing the presence of a symptom are rather more stringent than those used in the standardized psychiatric interview; and it seems likely that the standardized psychiatric interview would include disorders as being of clinical severity which would not reach the present state examination threshold'. The studies reviewed here that used the standardized psychiatric interview reported 12.0–24.0% of patients experiencing depression in the puerperium. Cooper and colleagues, using the present state examination, reported only between 5.0 and 8.8% of their sample to be depressed.

Gotlib and colleagues¹³ compared the prevalence of depressive symptoms with the prevalence of depression identified by the schedule for affective disorder and schizophrenia. They found that 25% of their sample reported depressive symptoms while 7% were clinically depressed and concluded that the 'softer' rating scales identified women who had depressive symptoms rather than depression. They did not investigate the hypothesis that factors such as a difficult infant, adverse life events or lack of a confidant precipitate women with depressive symptoms into clinical depression.

While most women only experience one episode of postnatal depression, a substantial minority will have more than one episode and up to 10% will be depressed throughout the first postnatal year.^{5,12,15,20}

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Table 1. Reported prevalence and incidence of postnatal depression from prospective studies during the first year after birth of baby.

Reference	Percentage prevalence ^a					Percentage incidence ^b			
	Between 1-2 months	Between 3-5 months	Between 6-9 months	At 12 months	Annual	At 3 months	At 6 months	At 12 months	Annual
3 Playfair <i>et al</i>	—	10.0	—	—	—	—	—	—	—
4 Ancill <i>et al</i>	—	—	—	—	14.0	—	—	—	—
5 Kumar and Robson	—	14.5	11.2	6.5	—	14.0	4.5	4.6	—
6 Cutrona	—	—	—	—	—	8.2	—	—	—
7 Dimitrovsky <i>et al</i>	16.7	—	—	—	—	—	—	—	—
8 O'Hara	12.0	—	—	—	—	—	—	—	—
9 Whiffen	16.5	—	—	—	—	—	—	—	—
10 Cutrona and Troutman	—	20.0	—	—	—	—	—	—	—
11 Zajicek-Coleman <i>et al</i>	—	10.0	—	—	—	—	—	—	—
12 Bridge <i>et al</i>	8.3	—	—	—	16.5	—	—	—	—
13 Gotlib <i>et al</i>	6.8	—	—	—	—	—	—	—	—
14 Cox <i>et al</i>	—	13.0	—	—	—	—	—	—	—
15 Watson <i>et al</i>	12.0	—	—	—	22.0	—	—	—	—
17 O'Hara <i>et al</i>	12.0	—	—	—	—	—	—	—	—
18 Gard <i>et al</i>	—	—	22.0	—	—	—	—	—	—
19 Cooper <i>et al</i>	—	8.7	8.8	5.2	—	7.7	5.2	2.2	15.1

^a Total proportion of sample depressed at time of assessment. ^b Proportion of depressed who were not found to be cases at previous assessment.

Some women who have had severe postnatal blues will develop depression^{3,14} while others may not become depressed until their infant is nine months old.¹⁵ Bridge and colleagues comment: 'If postnatal depression is considered only up to six weeks then one is ignoring a substantial number of women whose depressive symptoms develop in the first year after childbirth'.¹² However, Cox has suggested that the term postnatal depression should only be used to describe depression that has started within six months of childbirth (personal communication). Two long term studies have observed that some women continue to experience episodes of depression for four⁵ or six¹¹ years after delivery.

Causes of postnatal depression

The links with the puerperium: causal or casual?

There is considerable disagreement about the cause of postnatal depression. A controlled study might provide evidence to answer the question: Is childbirth an 'adverse life event' causing depression in women who would not otherwise have become depressed? However, no studies have used a control group of women who were not pregnant. Watson and colleagues¹⁵ and Cooper and colleagues¹⁹ were able to compare their findings with the results of surveys of non-pregnant women that used similar methods.

Watson and colleagues¹⁵ noted that the prevalence of postnatal depression six weeks after birth which they found (12.0%) was 'strikingly similar' to the one month period prevalence of depression in non-pregnant women (14.9%) reported by Bebbington and colleagues²¹ while the annual period prevalence of postnatal depression they recorded (22.0%) was comparable to the annual prevalence of depression found by Brown and Harris (17.0%) in a neighbouring community.²² Cooper and colleagues were careful to use the same methods that Surtees and colleagues had used in a longitudinal study of women in Edinburgh.²³ They found that the point prevalence, incidence and nature of non-psychotic psychiatric disorder in the 12 months following delivery did not distinguish it from such disorder arising at other times.

These findings lend weight to the conclusions of O'Hara and Zekos in their review:² 'the term postpartum depression would appear to reflect the coincidental occurrence of the puerperium

and depression rather than reflecting a causal relation between childbearing and depression'.

However, Kumar and Robson⁵ noted that 'childbearing per se has a particular and deleterious effect on the mental health of women'. Other authors have suggested that women who have postnatal depression are different from women who do not. Frank and colleagues²⁴ studied women (mean age 44 years \pm SD 10 years) who were experiencing recurrent episodes of depression. They found that women who had been depressed in the puerperium (24 out of 52) were significantly younger at the onset of illness, were more severely depressed in later life and showed less emotional stability than women who had had children but no postnatal depression. The electroencephalogram sleep patterns of women who had had postnatal depression were distinguished by longer rapid eye movement (REM) sleep time and more REM activity. Cox and colleagues showed that there are 'powerful aetiological factors' working in the puerperium to cause an 'increase in consultation rates for depression'.¹⁴ Ball (a senior midwife) investigated women in the first six weeks of the puerperium in a careful and detailed study and using multiple regression analysis she found that maternal perception of family support at six weeks was the most important factor in the establishment of maternal wellbeing.²⁵ Among other factors were maternal self-confidence in the first week, maternal rating of her baby's progress, mother's self-image in feeding, maternal anxiety trait and satisfaction with motherhood.

Martin and colleagues,²⁶ in a comparison of women in a psychiatric mother and baby unit with women in the community, showed that only 16% of the cases of depression in the puerperium had a psychosocial provoking cause compared with 88% of the cases of depression during pregnancy and 73% of cases in the general population. They concluded that puerperal depression has a 'distinct biological aetiology'.

Considerable effort has been expended in the search for a hormonal or biological cause for postnatal depression. A number of authors have reported associations between postnatal depression and low levels of progesterone, prolactin and tryptophan,^{2,27} but the results have not been confirmed by others.² No consistent relationship has been found between postnatal depression and oestrogen, oestradiol, oestriol, cortisol, thyroxine, neurotransmitters, pyridoxine or hydroxocobalamin levels.² Postnatal depression has been reported to respond to treatment

with progesterone but the studies have not been controlled.²

Harris and colleagues²⁷ have recently suggested that the relationship between postnatal depression and the hormonal environment of the puerperium is more complex than has been thought. Using blood and salivary hormonal estimations they found that breast feeding women with depression had low salivary progesterone and serum prolactin levels and that progesterone-only oral contraceptives reduced the incidence of depression. However, bottle feeding mothers had high salivary progesterone levels and the use of combined oestrogen/progesterone oral contraceptives was associated with an increased incidence of postnatal depression.

Vulnerability factors

While the causes of postnatal depression remain controversial many authors have sought evidence for 'vulnerability factors' that are associated with an increased risk of postnatal depression.

The vulnerability factor identified by all those who looked for it was a poor relationship between the mother and her partner. This was associated with a significantly increased risk of postnatal depression when observed antenatally,^{3,5,7-9,11,15,18} six weeks after delivery²⁸ and one year later.²⁹ Poor quality social support and the lack of availability of a confidant for the mother was another factor found by most,^{5,10,11,14,15,26,28,30} but not all studies^{7,31} to be related to an increased morbidity in the puerperium. Cutrona and Troutman comment that 'women who had other women upon whom they could rely had more confidence in their ability to perform well as mothers and their confidence in turn was an effective deterrent to depression'.¹⁰

A woman's previous psychiatric history and mental state in pregnancy have been found by many^{4,7,9,12,13,15,17,26,32} but not all studies^{8,14,16,33} to be related to postnatal depression. The evidence is ambiguous and suggests that while women with a history of anxiety or depression are at an increased risk of postnatal depression, many women with postnatal depression do not have such a history.³⁴ Adverse social circumstances and life events have been linked to an increased susceptibility to postnatal depression, both when these occur before pregnancy^{3,9,15,24,31} and when experienced as continuing life difficulties.^{3,8,15,17,28,30} A recent study has reported that a low family income 'significantly predicted' postnatal depression, increasing the odds of developing it by a factor of about three. Lack of a confidant was found to be an independent predictor of postnatal depression and women having both risk factors had a 19 fold increased risk of postnatal depression.³⁰ Cox and colleagues,¹⁴ Kumar and Robson⁵ and Martin and colleagues²⁶ did not find a link between such factors and postnatal depression and no link has been found with social class. Obstetric and perinatal factors have been found by some^{5,17} but not others^{4,9,14-16,18,24,26} to be related to an increased risk of postnatal depression. No consistent relationship has been observed between parity and postnatal depression.¹²⁻¹⁵

The notion of vulnerability may help to explain why some women experience postnatal depression while others in similar circumstances do not. Vulnerable women lack either the internal or external resources to enable them to cope with new stresses or adverse life events.³⁵ As Zajicek-Coleman and colleagues comment: 'such factors as being single, living in high rise accommodation and lack of social contacts may tip the balance in terms of whether or not a woman is functionally impaired by her depression'.¹¹

Effects of postnatal depression

Problems associated with infant temperament and behaviour have been found to be related to postnatal depression both as a cause^{6,36} and a consequence^{36,37} of it. Women with depression

receive proportionately more home visits by health visitors, particularly after the birth of a first child, than women without depression.³⁸ The children of mothers who are depressed are taken to the general practitioner more often, more frequently admitted to hospital and more often prescribed medication for minor childhood illnesses than those of non-depressed mothers.³⁹

Cox's group followed up the children of the mothers in their study¹⁴ at the age of three years and found that children whose mothers had had episodes of postnatal depression lasting up to six months showed more behavioural disturbance than the children of non-depressed mothers.⁴⁰ Surprisingly there was no relationship between maternal postnatal depression lasting for more than a year and child behaviour. Studies by Coghill and colleagues⁴¹ and Caplan and colleagues⁴² reported on the children born during Kumar and Robson's study⁵ at the age of four years. Coghill and colleagues found 'significant intellectual deficits' in the children of women who had been depressed during the first postnatal year but Caplan's group found no clear link between behaviour problems and postnatal depression. These findings are consistent with earlier work that demonstrated the relationships between maternal mental health and child behaviour and development.^{43,44}

Postnatal depression can have many adverse personal, family and social consequences. In addition to the deleterious effects on the mother, her feelings and her ability to cope with the demands of a new baby, postnatal depression may affect the mother's relationships and the behaviour and development of the infant. Furthermore, it may render her unfit for work. Many families and many businesses and factories now rely on a predominantly female workforce so postnatal depression may have financial consequences for the family and economic repercussions on her employer.⁴⁷ Occasionally the woman's partner will have to take time off work to care for the mother and family.

Prediction and prevention or screening and treatment of postnatal depression

Since pregnancy and the puerperium are readily identifiable and predictable a number of workers have investigated the possibilities that postnatal depression could be prevented by identifying vulnerable women in advance or could be treated by identifying women through screening in the early puerperium.

Elliot and colleagues have investigated the hypotheses that women who were vulnerable to postnatal depression could be identified and that an appropriate intervention would reduce the prevalence of postnatal depression in such women.⁴⁵ A simple self-report questionnaire was administered at booking. Women were rated as 'vulnerable' if they reported at least one of four factors: poor marital relationship, a history of psychiatric illness (including postnatal depression), high levels of anxiety or lack of a confidant. Three months after delivery they found that significantly more vulnerable women (20/50, 40%) had postnatal depression than women with no vulnerability factors (14/90, 16%).⁴⁶

They also tested the effectiveness of psychosocial intervention in a controlled trial. The intervention had three aims: to provide continuity of care from early pregnancy to puerperium from at least one empathic professional, to offer an educational programme and to provide information about and referral to self-help groups and national organizations when relevant. The intervention comprised monthly support groups led by a midwife and clinical psychologist. It was offered to a random sample of 'vulnerable' women. Two months after delivery the prevalence of depression was significantly lower in the intervention group (6/48, 13%) than in the controls (17/51, 33%).⁴⁵ At three months, however, the difference was only significant for

first time mothers. The authors concluded that the programme was 'clearly successful in reducing the prevalence of depression in new mothers'.⁴⁶

Cox and colleagues have developed a self-rating questionnaire, the Edinburgh postnatal depression scale, to screen for postnatal depression. It has been found to be consistent and reliable when administered six weeks after delivery.^{47,48} They have used it in a randomized controlled trial to study the effectiveness of non-directive counselling of women with postnatal depression by health visitors.⁴⁹ Mothers who had high scores on the screening questionnaire at six weeks were visited by a psychiatrist at 12 weeks to confirm that they were depressed. They were then randomly allocated to either treatment or control groups. The treatment group received at least half an hour of non-directive counselling by health visitors at home for eight weeks. Five weeks later all the women were reassessed by the psychiatrist. Significantly more women in the treatment group had recovered (18/26, 69%) compared with the control group (9/24, 38%). The control group showed no change in the mean scores of the rating scales used while the mean scores of the intervention group were significantly lower after treatment. The authors reported that the mothers valued the continuing support and comfort of the health visitors and 23/26 (88%) of the treatment group 'claimed that talking to the health visitor had been the most important factor in their recovery'.

The findings of these studies have significant implications for primary care, since together they suggest that it is important to identify vulnerable women and actively prevent postnatal depression or to screen for and treat it in the puerperium.

There is evidence to suggest that health visitors⁵⁰ and general practitioners^{4,51} fail to recognize postnatal depression, perhaps because some professionals assume it to be a case of the 'blues' which is 'normal'.^{20,52} Should general practitioners, midwives and health visitors use standardized self-rating scales to identify vulnerable women and women with postnatal depression? Some women identified in this way may deny that they have postnatal depression⁵⁰ and others do not wish to discuss it with their general practitioner.^{2,14,18,49,53}

The evidence reviewed here suggests that many vulnerable pregnant women and women with postnatal depression will benefit from encouragement, support and an opportunity to talk and ventilate their fears. However, professionals in primary care must be careful to maintain patient autonomy and encourage self-help rather than consider a high score on a self-rating scale an automatic signal for a psychological intervention, referral or drug therapy. Health workers in the community should seek to foster and encourage the development of social networks and support groups. This will allow those women who do not wish to medicalize their feelings and experiences or to be labelled as 'a patient with depression' (the comment of the first 'patient' that I identified using the Edinburgh postnatal depression scale) to receive help within the community.

There remains some debate about who should provide professional help if it is requested by a woman with postnatal depression. There is evidence that midwives, clinical psychologists and health visitors are effective and some general practitioners also provide a service for their patients.⁵⁴ It is likely that social workers, community psychiatric nurses and lay counsellors will also seek to offer their skills.⁵⁵ The range of professional and lay personnel with an interest in helping patients with postnatal depression may result in competition to offer each 'brand' of special skills. As a result postnatal depression care may become separated from primary care and become less comprehensively personal because of a lack of knowledge of the patient's medical history, family background and social context. Women with postnatal depression seeking 'professional' help need continu-

ing personal care from health workers with adequate knowledge of normal and abnormal infant health and development as well as the normal consequences of childbirth, so that the concerns, fears and experiences of the women can be set in an appropriate context.

Midwives, health visitors and general practitioners have the appropriate additional knowledge and experience and are most suitably placed to provide the necessary help. This is an opportunity for the primary care team to work together, integrating the skills of the members, offering patient-centred care and utilizing interprofessional collaboration while at the same time maintaining patient autonomy.

Further research

The lack of studies with an adequate control group² mean that a number of areas remain to be explored. There are considerable difficulties, however, in establishing a suitable control group of non-pregnant women to observe prospectively since some may not have the opportunity to become pregnant, some may have made a decision not to become pregnant, some may be experiencing problems of infertility and some may become pregnant during the course of the study. However, without such a control group a number of questions remain unanswered.² Is childbirth no more than another adverse life event precipitating depression in vulnerable women? Will some women who would not otherwise become depressed, experience depression after childbirth? Is postnatal depression more common than other types of depression in the same community? Does postnatal depression have different causes, run a different course and have different consequences from depression experienced at other times?

Postnatal depression provides a useful model for research into the care of patients with depression in primary care.² There are a number of organizational issues that remain unresolved.^{1,16,56} What constraints prevent effective teamwork between midwives, health visitors and general practitioners and how can the recognized failures of communication between hospital and community and among professionals⁵¹ be resolved? Should all women with postnatal depression receive professional help? What is the role of drug treatment? Is screening for postnatal depression 'cost effective'?

Conclusion

Women with postnatal depression seem to be experiencing more than just 'normal' postpartum tensions and tiredness. General practitioners and health visitors therefore have a responsibility to become more sensitive to the possibility that postnatal depression is present when they see women in the puerperium. Self-rating scales have yet to be fully evaluated for use in prediction and screening but they may play an important part in the prevention and management of postnatal depression in the future. Organized care is already provided for mothers in the antenatal period and later for their infants. The evidence now available would suggest that the members of the team should be equally vigilant in the care they provide for women in the postnatal period.

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