

Misery in Motherhood" by Katja Gaschler.
Copyright © 2008 by Scientific American,
Inc., pp. 67-73. Reproduced with permission
via Copyright Clearance Center.

MISERY IN MOTHERHOOD

A deep despair mars the first year of motherhood for as many as one in five women. Without treatment, postpartum depression can weaken critical bonds between a mother and her child

By Katja Gaschler

he psychologist smiles at Manuela, a new mother in her late thirties. "Please play with your baby for two minutes," the therapist instructs her and then leaves the room. Two video cameras film Manuela (which is not her real name) and her three-month-old daughter. In the next room, a split-screen monitor shows the mother's profile on the left and her infant in a baby chair on the right.

At first, Manuela appears to be at a loss for what to do. Then, her face noticeably stiff, she begins to talk softly to her baby. Her baby fidgets, briefly makes eye contact and then turns away. Manuela eventually stops talking and stares into the distance, unsure again how to act. She absentmindedly strokes her baby's foot with one hand. The psychologist knocks on the door; the videotaping is over. The new mother is now on the verge of tears.

CORDELIA MOLLOY SPL/Photo Researchers, Inc.

Hormonal changes that occur after delivery contribute to postpartum depression in some women.

Manuela is undergoing therapy at the Clinic for General Psychiatry in Heidelberg, Germany, for postpartum depression, an ailment that has strained her relationship with her baby. Although the vast majority of mothers experience periods of crying and irritability along with concentration lapses and exhaustion, these so-called baby blues disappear within a few hours or days of delivery. But 10 to 20 percent of women in the U.S. develop, in the first year after childbirth, the more disabling despair that afflicts Manuela. These mothers succumb to a deep sadness that, if untreated, may persist for months to years.

Manuela frequently feels exhausted and emotionally empty. When her baby cries, she sometimes wants to flee or hide. She is wracked with guilt because she cannot show love to her daughter. Mothers with symptoms of postpartum depression [see box on page 70] are often overwhelmed by the feeling that they might harm their babies. Although they rarely cause any outright harm, depressed mothers may have difficulty caring for their infants—and that fact can heighten their distress.

These emotional problems plague women

worldwide. A 2006 review of 143 studies in 40 countries documents that postpartum depression is especially common in Brazil, Guyana, Costa Rica, Italy, Chile, South Africa, Taiwan and Korea, with prevalence rates as high as 60 percent in some countries.

The causes of the disorder are not fully known, but the dramatic hormonal fluctuations that occur after delivery may contribute to it in susceptible women. A bout of previous depression is a huge risk factor for the postpartum variety, new research shows. Whatever its cause, depression can weaken the nascent bond between a mother and her child, studies suggest, and thereby make a toddler more passive, insecure and socially inhibited—although a child's intellectual development usually remains unimpaired.

Thus, in addition to treating the mother's depression, psychologists and psychiatrists increasingly focus on strengthening the relationship between the mother and her child—for example, by using a video camera to record and analyze their interactions. "We need to change the unfavorable behavioral patterns that develop between mother and child during depression," says University of Heidelberg psychologist Corinna Reck.

FAST FACTS

Postpartum Gloom

1 Bouts of crying and irritability, along with concentration lapses and exhaustion, affect 80 percent of new mothers. But these baby blues disappear within a few hours or days of delivery. In contrast, 10 to 20 percent of women in the U.S. develop a more disabling and longer-lasting disorder called postpartum depression in the first year after childbirth that often impairs their ability to care for their babies.

2 Dramatic hormonal fluctuations that occur after delivery may contribute to postpartum depression in susceptible women, but causes of the disorder are not fully understood.

3 Postpartum depression can weaken the developing bonds between a mother and her child and thereby make a toddler more passive, insecure and socially inhibited. As a result, therapy often focuses on repairing the mother-child bond by changing the negative behavior patterns that develop between mother and child during depression.

Hormonal Havoc

Women seem to be particularly vulnerable to depression during their reproductive years: rates of the disorder are highest in females between the ages of 25 and 45. New data indicate that the incidence of depression in females rises, albeit modestly, after giving birth. In the October 2007 *American Journal of Psychiatry*, epidemiologist Patricia Dietz of the U.S. Centers for Disease Control and Prevention and her colleagues reported that 10.4 percent of 4,398 mothers had been depressed in the nine months following childbirth, compared with 8.7 percent in the nine months before pregnancy and 6.9 percent during pregnancy. More than half of the women with postpartum depression had also been depressed during or before pregnancy, suggesting that a previous occurrence of depression may be the biggest risk factor for acquiring the illness postpartum.

But the hormonal changes that occur in a new mother's body are also thought to contribute to postpartum depression in some cases. During

On Camera

Some psychologists stage three scenarios to analyze an infant's interactions with his or her mother. After a two-minute play phase (1), the mother is asked to sit with the child for two minutes with a blank expression on her face (2). If the mother-child relationship is intact, the baby tries to get mom's attention by, say, smiling and gurgling. And if mom stays so-called still-

faced for too long, her child starts to protest. Babies of depressed mothers, on the other hand, often sit silently, resigned to the presence of an unresponsive mother. An infant of a depressed mother will also frequently fail to respond to friendly gestures from a stranger (3). (A mentally healthy mother posed for these photographs, and psychologist Corinna Reck played the stranger.) —K.G.



pregnancy, a woman experiences a surge in blood levels of estrogen and progesterone. Then, in the first 48 hours after childbirth, the amount of these two hormones plummets almost 50-fold back to normal levels. This chemical seesaw could contribute to depression just as smaller hormonal changes before a woman's menstrual period may affect her moods.

Of course, hormonal flux does not fully explain postpartum depression. After all, this biochemical oscillation occurs in all new mothers, and yet only a small proportion of them become depressed. In addition, studies have shown that pregnancy hormone levels in a woman do not predict her risk of depression.

Nevertheless, the rapid rise and fall of female sex hormones may buffet the emotions of a subset of women who are predisposed to depression and thus may be acutely sensitive to the hormones' effects. In 2000 endocrinologist David R. Rubinow, then at the National Institute of Mental Health, and his colleagues reported that simulating the hormonal ebb and flow that occurs during pregnancy and childbirth in 16 women precipitated depressive symptoms in five of the eight women with a history of postpartum depression but not in subjects who had no such history.

The demands of motherhood very likely play a role as well. Many women feel exhausted from a baby's broken sleep and become overwhelmed by new child care duties. Some may lament the loss of the life they led before having the baby or of their former figure. Women who must endure such stresses on top of marital problems, a complicated birth, job loss or lack of support from family and friends are more likely to succumb to depression.

Broken Bonds

The consequences of depression inevitably reach beyond the mother. In a fog of sadness, a mother often lacks the emotional energy to relate appropriately to her baby. Overwhelming grief prevents her from properly perceiving a child's smiles, cries, gestures and other attempts to communicate with her. Getting no response from mom, the child quits trying to relate to her [see box above]. Thus, three-month-old infants of depressed mothers look at their mothers less often and show fewer signs of positive emotion than do babies of mentally healthy moms.

In fact, infants of depressed mothers display something akin to learned helplessness, a phenomenon University of Pennsylvania psychologist Martin E. P. Seligman and his colleagues

Are You Depressed?



Do activities you used to enjoy seem dull and meaningless? Do you think you have failed as a mother? Do you feel extremely anxious about your baby's health and welfare? Such sentiments are signs of postpartum depression. Other symptoms include a fear that you might harm your baby (although few mothers ever do) and thoughts of suicide. Mothers with postpartum depression also often suffer from sleep and concentration disorders, headaches, heart palpitations, chest pains, and fast and shallow breathing. In one or two of every 1,000 births, a mother experiences a complete break with reality within six weeks of delivery; she hallucinates and suffers from delusions, rapid mood swings and obsessive thoughts about the baby. In such postpartum psychosis,

a mother might even act on thoughts of harming her child.

If you think you might be depressed after giving birth, take the following test. It is based on the Edinburgh Postnatal Depression Scale, which was developed in the 1980s by psychiatrist John Cox and his co-workers at the University of Keele in England. This screening tool can size up your risk but does not formally diagnose depression, which must be done by a professional. For each of the 10 statements, circle the number next to the response that best describes how you have been feeling during the past week. Add up the numbers you circled. If the sum is nine or greater or if you score one or higher on the last question, you may be depressed and should seek a doctor's advice. —The Editors

IN THE PAST SEVEN DAYS:

I have been able to laugh and see the funny side of things.

- 0 As much as I always could
- 1 Not quite so much now
- 2 Definitely not so much now
- 3 Not at all

I have looked forward with enjoyment to things.

- 0 As much as I ever did
- 1 Rather less than I used to
- 2 Definitely less than I used to
- 3 Hardly at all

I have blamed myself unnecessarily when things went wrong.

- 3 Yes, most of the time
- 2 Yes, some of the time
- 1 Not very often
- 0 No, never

I have been anxious or worried for no good reason.

- 0 No, not at all
- 1 Hardly ever
- 2 Yes, sometimes
- 3 Yes, very often

I have felt scared or panicky for no very good reason.

- 3 Yes, quite a lot
- 2 Yes, sometimes
- 1 No, not much
- 0 No, not at all

Things have been getting on top of me.

- 3 Yes, most of the time I have not been able to cope at all
- 2 Yes, sometimes I have not been coping as well as usual
- 1 No, most of the time I have coped quite well
- 0 No, I have been coping as well as ever

I have been so unhappy that I have had difficulty sleeping.

- 3 Yes, most of the time
- 2 Yes, sometimes
- 1 Not very often
- 0 No, not at all

I felt sad or miserable.

- 3 Yes, most of the time
- 2 Yes, quite often
- 1 Not very often
- 0 No, not at all

I have been so unhappy that I have been crying.

- 3 Yes, most of the time
- 2 Yes, quite often
- 1 Only occasionally
- 0 No, never

The thought of harming myself has occurred to me.

- 3 Yes, quite often
- 2 Sometimes
- 1 Hardly ever
- 0 Never

JOHN BIRDSALL age Fotostock (photograph); "DETECTION OF POSTNATAL DEPRESSION: DEVELOPMENT OF THE 10-ITEM EDINBURGH POSTNATAL DEPRESSION SCALE," BY J. L. COX, J. M. HOLDEN AND R. SAGOVSKY, IN BRITISH JOURNAL OF PSYCHIATRY, VOL. 150, NO. 6; 1987 (questionnaire)



Baby face: Mothers intuitively adapt their facial expressions when interacting with their babies. Raising the eyebrows denotes an appropriate “eye greeting.”

A child of a depressed mother may become unusually fearful and socially inhibited.

described in the 1960s. In Seligman’s experiments, an animal would conclude that a situation was hopeless after repeatedly failing to overcome it—and then remain passive even when it could effect change. A similar passivity characterizes depression. “Sometimes the infants mirror their mother’s depressive behavior,” Reck says.

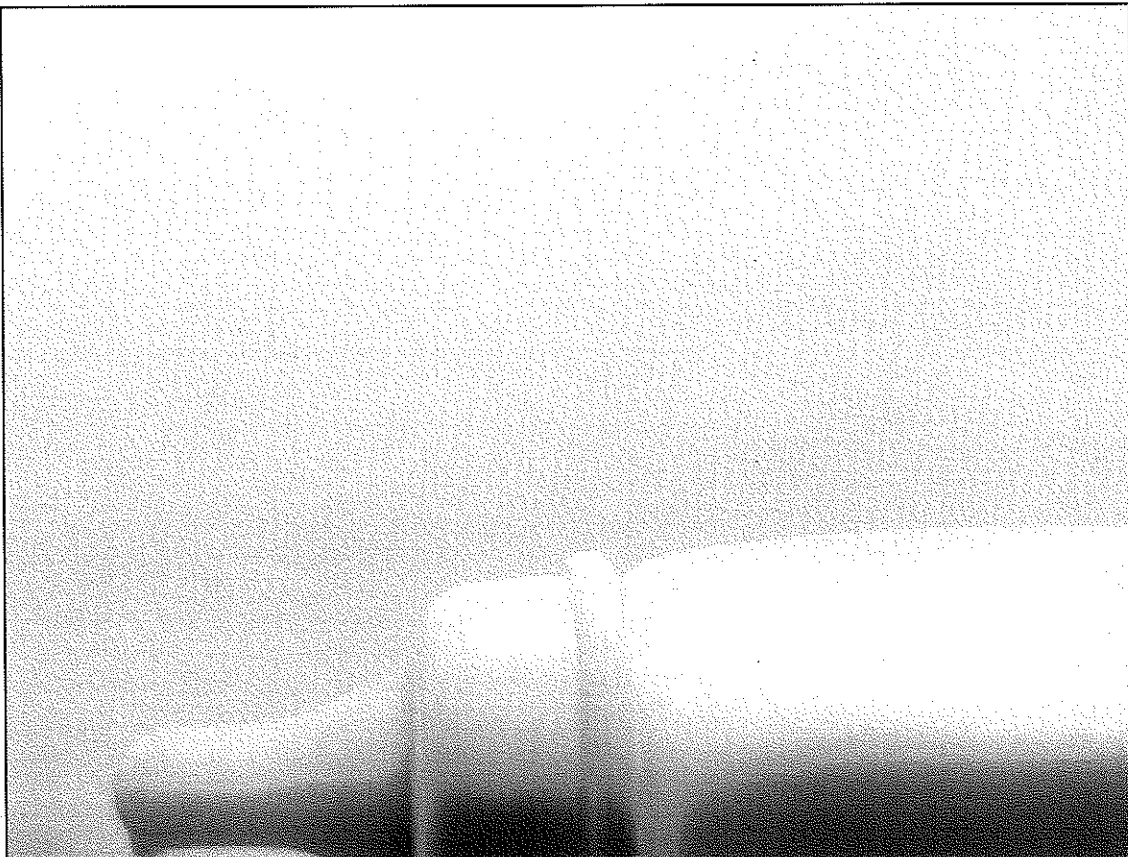
Such reciprocal withdrawal can start to fray the critical emotional bond between mother and child, especially if the depression occurs early in the baby’s life. Other work has shown that infants develop essential social skills in months two through six, building relationships with their mothers as well as other people. In a 2006 study of 101 new mothers, psychiatrist Eva Moehler, Reck and their Heidelberg colleagues found that maternal depression strongly diminished the quality of a mother’s bond with her child at two weeks, six weeks and four months postpartum—but not at 14 months. Thus, depression during the first few months after birth may be particularly perilous for a child’s social development.

A child of a depressed mother may even become more introverted and face a greater risk for social phobia, an extreme fear of social situa-

tions, among other emotional difficulties. In 2007 Reck, Moehler and their colleagues reported that in the same 101 mother-infant pairs, postpartum depression at six weeks, four months and 14 months after birth tended to make a 14-month-old toddler more fearful and inhibited as compared with same-age toddlers of healthy moms. Other work suggests that postpartum depression may produce behavioral problems and negativity in children.

Postpartum gloom usually does not have a long-lasting impact on children’s cognitive development, however. In a 2001 study psychologists Sophie Kurstjens and Dieter Wolke of the University of Munich tested the intellectual skills of 1,329 children (92 of them born to mothers who had depression) at various ages from 20 months to eight years. The researchers generally found no cognitive deficits among the children of depressed mothers as compared with those of healthy mothers. They did find cognitive problems, however, in boys of low socioeconomic status who had chronically depressed mothers as compared with children whose mothers had less severe depression.

"We need to change the behavioral patterns that develop between mother and child during depression."



Nursing Mom

Despite the devastating fallout from postpartum depression, many mothers shy away from getting help—in some cases, out of shame for emotions they cannot justify. Manuela, for example, was initially afraid to talk about her feelings and fears. She felt no one would understand why she was sad after the birth of a healthy, beautiful baby. Eventually, however, at her breaking point, she sought treatment at the Heidelberg clinic.

Many new mothers require medication to take the sting out of their sadness. A doctor may prescribe an antidepressant such as Prozac and, in some cases, may recommend taking a hormone such as estrogen as well. In addition, a small 2007 study by Yale University psychiatrists Ariadna Forray and Robert B. Ostroff suggests that electroconvulsive therapy can ameliorate postpartum depression and its more severe cousin, postpartum psychosis, in women who do not respond to drug therapy.

Psychotherapy for the mother's depression may also be beneficial. One proven approach is

cognitive-behavior therapy, in which a therapist tries to correct distorted and negative ways of thinking either by discussing them openly or by asking the patient to practice more adaptive behaviors.

But treating the mother in isolation is often not enough to prevent her illness from affecting her child. In a study published last year psychologist David Forman of Concordia University in Quebec and his colleagues compared 60 mothers who received psychotherapy for depression with a group of 60 untreated depressed mothers and 56 healthy mothers. Six months of therapy did lower parenting stress in depressed women as compared with untreated depressed women, but the treated women still viewed their infants more negatively than did mothers who had not been depressed. Perhaps as a result, after 18 months of therapy the affected mothers reported more behavior problems, a lower level of attachment security and a more negative temperament in their children as compared with moms who had not been depressed.

Now these and many other researchers be-

DAVID ATKINSON Getty Images

lieve that therapy for postpartum depression should also involve the child. Psychologist George Downing of Pitié-Salpêtrière Hospital in Paris developed video intervention therapy, for example, to improve mother-infant interaction. The technique helps mothers to correctly perceive their infants' behavior by recording and analyzing it—and to feel better about their own actions as mothers. “The goal of therapy is to reactivate the intuitive maternal behavioral repertoire that was covered over by the depression,” explains Heidelberg clinic psychiatrist Thomas Fuchs.

Baby Talk

Tabea, a mother in her early thirties whose depression was severe enough to warrant hospitalization for several weeks after she gave birth, is still having difficulty interacting with her four-month-old son. At the Heidelberg clinic, a psychologist asks Tabea (which is not her real name) to sit in front of a video camera with her baby. Tabea speaks loudly to him. She raises her eyebrows and laughs. Her infant makes eye contact, and a smile flits across his face. His mother feels reinforced. But then the infant turns his head away. And Tabea says, “Well, what’s the matter now? Sulking again, are we? Did mommy leave you by yourself too long?” Tabea feels guilty for having had to leave her baby to be treated for depression.

But it is normal for infants to turn away after a social interaction. That is how they regulate stimuli. It is not, as Tabea sees it, a personal affront or a sign that she is a bad mother. Nevertheless, Tabea’s misinterpretation of her baby’s actions can prompt a vicious cycle in which the child’s apparent rejection hurts Tabea, making her feel insecure and sad, which in turn has a negative effect on the baby.

The therapist’s job is to break that cycle, largely by correcting a mother’s misimpressions and emphasizing what she has done well. Tabea’s wide-open eyes, for example, signaled that she was paying attention to her child. The psychologist points out that Tabea’s expressive face and melodious speech are similarly appropriate and helpful. Then she encourages Tabea to wait for her child to take the initiative, which will be her signal to respond.

Some hospitals have mother-infant treatment centers for postpartum depression so that the mother can remain with her infant during treatment. There hospital personnel help the mother feed, diaper and bathe her child while also providing behavior therapy. Fathers can play an im-



portant part, too. Assuming he is not depressed, a father can significantly ameliorate the effects of a mother’s depression by building a close relationship with his son or daughter.

Meanwhile a mother can take steps to ease her emotional burden by asking for help from family and friends, sleeping more, spending time with her spouse, getting out of the house and putting less pressure on herself. In the end, most mothers who receive adequate treatment—often a combination of psychotherapy, medication and self-help—usually recover completely within about two months of starting treatment, according to psychiatrist Ricardo J. Fernandez of Princeton Family Care Associates in New Jersey. Some mothers even emerge from their cloud of sadness with a new sense of clarity. As one mother said of her depression, “It gave me the impetus to change my life.” M

Breaking the cycle: The therapist and mother discuss the video sequences to eke out positive elements in the interaction. Their goal: to interrupt the negative feedback loop that often develops between a depressed mother and her child.

(Further Reading)

- ◆ **Effects of Gonadal Steroids in Women with a History of Postpartum Depression.** M. Block, P. J. Schmidt, M. Danaceau, J. Murphy, L. Nieman and D. R. Rubinow in *American Journal of Psychiatry*, Vol. 157, No. 6, pages 924–930; June 2000.
- ◆ **Effects of Maternal Depression on Cognitive Development of Children over the First 7 Years of Life.** S. Kurstjens and D. Wolke in *Journal of Child Psychology and Psychiatry*, Vol. 42, No. 5, pages 623–636; July 2001.
- ◆ **Interactive Regulation of Affect in Postpartum Depressed Mothers and Their Infants: An Overview.** Corinna Reck et al. in *Psychopathology*, Vol. 37, No. 6, pages 272–280; November–December 2004.
- ◆ **Clinically Identified Maternal Depression before, during, and after Pregnancies Ending in Live Births.** P. M. Dietz, S. B. Williams, W. M. Callaghan, D. J. Bachman, E. P. Whitlock and M. C. Hornbrook in *American Journal of Psychiatry*, Vol. 164, No. 10, pages 1515–1520; October 2007.
- ◆ For general information about postpartum depression, see www.emedicinehealth.com/postpartum_depression/article_em.htm and www.4women.gov/FAQ/postpartum.htm



© 2008 SCIENTIFIC AMERICAN, INC.