

Mothers of very low birth-weight babies have high levels of depression and stress

In the first controlled study examining psychological stress experienced by mothers of very low birth-weight babies (VLBW) over time, CWRU School of Medicine researchers report finding that 13 percent of these mothers suffer severe levels of psychological distress right after the baby's birth, compared with one percent of mothers who delivered full-term babies. The study appeared in the March 3 issue of the *Journal of the American Medical Association*.

Investigators found that when the babies were 2 years old, mothers delivering small premature infants who did not have medical complications did not differ from mothers of infants of average birth weight, while mothers who delivered VLBW infants who had complicated medical conditions continued to report distress. By three years, psychological stress levels for mothers of high-risk VLBW infants did not differ from those of mothers in the other two groups, but overall parenting strains still remained greater for mothers of high-risk VLBW babies.

"There are a lot of unknowns when one has a very low birth-weight baby, and the initial reaction is one of extreme anxiety and stress just thinking about whether the baby will survive. Once that anxiety is over, it's often very hard to predict what the long-term consequences will be," said lead author Lynn T. Singer, Ph.D., professor of pediatrics at CWRU School of Medicine and on staff at Rainbow Babies & Children's (RB&C) Hospital of University Hospitals of Cleveland.

"For those mothers whose babies had a more complicated medical course, stress levels seemed to wax and wane after they went home. But the stress became greater as the babies got older as, we believe, the parents began to see that their babies would have long-term problems," Singer said. "Mothers whose babies were most delayed in terms of developmental assessments had the highest levels of symptoms."

Three groups studied

Singer and colleagues from RB&C, MetroHealth Medical Center, and Fairview Hospital, all in Cleveland, studied three groups of mothers over three years to see how they adapted to the stress of parenting. One group contained mothers of 122 high-risk VLBW infants (weighed less than 3.3 lbs. at birth, required oxygen for more than 28 days because of lung immaturity at birth, had evidence of chronic lung disease, and had bronchopulmonary dysplasia, a condition characterized by insufficient lung function and inflamed lung tissue, often caused by long-term use of artificial ventilation). Another group had mothers of 84 low-risk VLBW infants (were preterm, weighed less than 3.3 lbs. at birth and required oxygen for less than 14 days). The third group, the control, consisted of mothers of 123 term infants (36 weeks or more in the womb) who had normal birth-weight (5.5 or more lbs.) and in whom no illnesses or abnormalities had been diagnosed.

"One of the unique aspects of our study was that we used several different measures of stress to ask mothers how they were feeling about having a baby," explained Singer. "The first measure looked at the symptoms: How depressed do I feel? How anxious? We found that by the time the infants were 3 years of age, mothers who had high-risk, very low birth-weight babies had the same levels of those symptoms as did mothers of term babies. But they continued to say they had greater stress in

parenting. That is, they felt that their children were more difficult to manage, more hyperactive, more demanding than the parents of term infants felt about their children. They also felt there were many more negative impacts on their family, such as greater financial stress, greater strain, greater sense of fatigue.

"However, they did not feel any different in terms of satisfaction with parenting. All the mothers, even those who had high-risk babies, by three years, felt that parenting was a positive aspect of their lives for them. They felt positive about their children, very attached to their children, and enjoyed parenting. These are two sides to the same coin. Even though mothers recognized that there was a great deal of stress here, they still derived a great deal of satisfaction from parenting," said Singer.

Surprising finding

A surprising finding for Singer was that mothers who had VLBW babies at low-risk and who experienced very high levels of stress and symptoms at delivery, actually had the lowest levels of symptoms during the rest of the study. "They were almost happier than the other two groups," she said. "I think this is because they felt they had escaped having the problems that they possibly anticipated or worried about when they had a very low birth-weight infant, because their infants were doing just as well as the term babies by the time they were 3 years of age."

Jill E. Baley, M.D., senior author and assistant professor of pediatrics at CWRU and RB&C, said, "Approximately 50,000 VLBW births occur annually in the United States. Significant improvements have occurred in survival rates of small preterm infants, especially those of extremely low birth-weight [i.e., less than 2.2 lbs.]. However, the infants may have neurological problems, learning disorders as they get into school age, chronic lung disease, vision and hearing problems. These developmental and physical handicaps need to be met as families and children move along with their lives."



Jill Baley, M.D.



Lynn Singer, Ph.D.

For mothers, Singer recommends that hospitals incorporate simple methods of psychological screening in the neonatal intensive care unit. "There are several treatments now for symptoms of depression and anxiety that we didn't have in the past that could probably significantly help many of the mothers," she said. She also recommends that the health system give special attention to the follow-up care of high-risk babies and the incorporation of mental health and social support services for families to continue beyond the initial stay in the hospital. "Mothers who have high-risk babies will probably need support services and have mental health needs long after the initial birth of the baby," she said.

Singer said the investigators continue to follow the mothers and

children in their study and are also looking at the fathers' psychological stress issues.

In addition to Singer and Baley, the other authors on the study are Ann Salvator, M.S., CWRU School of Medicine; Shenyang Guo, Ph.D., CWRU Mandel School of Applied Social Sciences; Marc Collin, M.D., Department of Pediatrics, CWRU School of Medicine and MetroHealth Medical Center; and Lawrence Lilien, M.D., Fairview Hospital.

The study was funded by grants from the Maternal and Child Health Bureau of the Health Resources and Services Administration and the National Heart, Blood and Lung Institute, one of the National Institutes of Health.

[Back to Main Page](#)