

## EDITORIAL

## Children of Depressed Parents—A Public Health Opportunity

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One of the best-replicated findings in clinical psychiatry is that the biological offspring of depressed parents (usually mothers are studied) themselves have considerable emotional and functional problems, usually depression and anxiety. These findings have been shown cross-sectionally in infants<sup>1</sup> and in prepubescent, adolescent, and adult offspring.<sup>2</sup> Offspring followed up longitudinally show that their risk continues over time.<sup>3</sup> The magnitude of the risk varies between 2-fold and 6-fold depending on the control group and outcome used as well as the phenotype definition.



Related article

The Swedish study in this issue of *JAMA Psychiatry* by Shen et al<sup>4</sup> contributes substantially to these findings. The strengths of the study are numerous. They include a new outcome—school performance based on a national standardized system—and a large sample comprising a nationwide birth cohort of more than 1 million children. Clinical studies may have more intense assessment of parents and offspring, but those samples are considerably smaller so that potential confounders cannot be controlled for (eg, parental sex, age, education, birth order, or substance abuse). Both depressed mothers and depressed fathers were included in the study, and depression was studied at different periods, including before the birth of the child, after birth, and as the child developed from ages 1 to 16 years. Another strength is that the data come from yet another country. So far, studies of the offspring of depressed parents have been from the United States, the Netherlands, the United Kingdom, Germany, and Australia, showing the universality of the findings, at least in Western countries. The findings clearly show that both maternal and paternal depression occurring any time during a child's life up to age 16 years is associated with the child's poor school performance. Maternal depression had the largest negative effect, especially in daughters. These sex findings are important because fathers have been excluded or poorly represented, so studies are underpowered to examine sex either in parents or offspring.

All studies have shortcomings, especially observational ones, even those with large samples. This study is not immune. As the authors note, we cannot be certain that the fathers were living with their child and whether the reduced effect of paternal depression may be due to the absence of the father in the home or a real effect. Another limitation is the absence of the child's diagnosis to determine its mediation effect, but that approach would have resulted in a different kind of study.

Clear and replicated findings are an epidemiologist's dream because they suggest directions for improving the health of the public. How does this study do? Numerous epidemiological studies around the world have shown that the onset and preva-

lence of depression are high, especially among women of child-bearing age, so parental depression is a problem of large proportion.<sup>5</sup> Depression in a parent is a modifiable risk factor because the parent's symptoms can be treated. There is considerable evidence for the efficacy of a range of medications and evidence-based psychotherapy (alone or in combination) for the treatment of depression. The symptoms are amenable to treatment. Therefore, bringing the depressed parent into remission might help the child. Fortunately, those studies<sup>6,7</sup> have also been performed and have shown that remission of the depressed mother, whether by medication or by psychotherapy, can reduce the child's problems.

We can state with confidence that treatment for a depressed parent should be readily available, sustained, and aggressive to achieve remission. Furthermore, a child with emotional problems or even serious school problems indicates that the parent's own clinical needs should also be considered.

Good research raises questions of a more specific nature. The study by Shen et al<sup>4</sup> shows that paternal depression also had a negative effect on the children. Does treating the depressed father have the same influence on children? There has been difficulty recruiting fathers for these studies because men have lower rates of depression and are more reluctant to come for treatment. Moreover, we do not know how or if the father's absence may have affected the findings in this study.

What are the best treatments? The results of a recent study<sup>7</sup> suggested that medications that produce increased activity and irritability may be effective for the mother's depression, but this effect does not translate into improvement in the child. What are the best treatments for depressed pregnant women, considering the effect of maternal depression on the infant? Does psychotherapy directed toward parenting have added value? When is parental treatment insufficient for helping the child? Which children should also be treated? Does remission of maternal depression lead to long-term effects on the child? The longest follow-up of children of remitted mothers to date has been 1 year.<sup>8</sup> Why are women and their daughters the most vulnerable?

We celebrate replication of such findings with clear public health and clinical implications. However, in the midst of this celebration, we should not forget that our biological understandings of mechanism and risk in this domain are not satisfactory. Brain imaging and immunologic, electrophysiological, and genetic studies are under way that may guide the precision of both the risk and the treatment in the future. In the context of the strongly replicated findings on the biological offspring of depressed parents, biological studies may well profit from a familial, high-risk design. Studies of individuals at high risk for depression who are not yet ill may identify bio-

markers that are not the consequence of illness but are true endophenotypes.

The study by Shen et al<sup>4</sup> concludes that “diagnoses of parental depression may have a far-reaching effect on child development.” We extend that conclusion to state that effective treatment of the diagnosed parents may also have far-reaching effects. The Mental Health Parity and Addiction Equity Act of 2008 and the Patient Protection and Affordable Care Act

of 2010 promised to significantly expand access to high-quality interventions for mental health and substance use disorders for the American people. Until the promise of a more personalized understanding of a common disease, such as depression, becomes reality, access to treatments that are vigorous, substantiated, and evidence based is a public health opportunity for improving the lives of both depressed parents and their children.

## ARTICLE INFORMATION

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