Depression Trajectories of Antenatally Depressed and Nondepressed Young Mothers: Implications for Child Socioemotional Development

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ABSTRACT

Objectives: This study explores the longitudinal trajectories of depressive symptoms in young mothers and investigate the consequences of maternal depression for children’s birth outcomes and behavioral adjustment.

Hypothesis: Antenatal depression puts children of young mothers at risk for adjustment difficulties by adversely impacting birth outcomes and maternal symptoms after birth.

Methods: Data were drawn from a three-wave randomized, controlled trial of a statewide home visiting program for young primiparous women. A subsample of women (n = 400) who were prenatal at intake was used in the analysis. Mothers were divided into an antenatally depressed group (ADG; 40%) and a healthy group (HG) based on their symptoms at intake. Mothers reported depressive symptoms at intake and 12- and 24-month follow-up, and filled out a checklist of child behavior problems at 24 months follow-up. Perinatal and birth outcomes were derived from the Electronic Birth Certificate collected by the State Department of Public Health at discharge from the hospital.

Results: ADG and HG had similar pregnancy characteristics and birth outcomes, but ADG reported more child behavioral problems. Multigroup latent growth curve analysis provided evidence for distinct depression trajectories. A mediation hypothesis was not supported. In both groups, steeper increase in symptoms over time predicted more mother-reported child behavioral problems.

Conclusions: Findings are consistent with studies linking antenatal depression with post-birth symptoms, underscoring the importance of prenatal screening for depression.

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of corticotrophin-releasing factor, constricted blood flow, and teratogens (Goodman, 2007). Additionally, AD is associated with a host of adverse obstetrical outcomes, including preterm delivery, lower birth weight, and restricted fetal growth (Kim et al., 2013), and these may foster children’s later developmental difficulties. More specifically, a mediated pathway, in which AD affects the developing fetus in ways that may later compromise healthy development of the infant, is possible (Marcus, 2009; O’Connor, Monk, & Fiteison, 2014), although full causal links cannot be established without careful consideration of genetic, biological, psychological, and socioeconomic factors.

Maternal depression is an especially serious concern in adolescent pregnancy, given heightened rates of the disorder in this population (30%–60%; Brown, Harris, Woods, Buman, & Cox, 2012). Although higher rates of depression among young mothers are well-documented, the distinction between AD and PPD is rarely made in these studies. As a result, considerably less is known about effects of AD on postpartum depressive trajectory analysis to predict child outcomes. The goals of the investigation were to test the following hypotheses: 1) AD puts children of young mothers at risk for adjustment difficulties and 2) the effect of AD on the children is mediated by a) adverse birth outcomes and b) a change in maternal symptoms over the course of 2 years (Figure 1).

Methods

Sample and Procedures

Data were drawn from a longitudinal, randomized, controlled trial of a statewide home visiting program designed to support young parents across multiple domains of development. The program's stated goals are to a) prevent child abuse and neglect by supporting positive, effective parenting; b) achieve optimal health, growth, and development in infancy and early childhood; c) encourage educational attainment, job, and life skills among parents; d) prevent repeat pregnancies during the teen years; and d) promote parental health and well-being. Initiated in 2007, the program evaluation used a randomized controlled trial design to examine program effects on outcomes related to the program goals. Young primiparous women seeking home visiting services (n = 837) were randomly assigned to either the program (62%) or the control (38%) groups. Eligibility criteria included being female, 16 years of age or older, not having previously received services, English or Spanish fluency, and being cognitively able to provide informed consent. A total of 704 mothers (response rate of 84%) participated in evaluation activities, which included, at a minimum, an agency data release or an initial (time 1 [T1]) phone interview. Data were collected at three time points (T1, T2, T3) separated by 12 months, over 2 years. Phone interviews were completed in either English or Spanish by 684 mothers at T1 (97%), 564 at T2 (80%), and 594 at T3 (84%). T1 assessments occurred approximately 1 month after randomization; participants were not blinded to their treatment group. Procedures were approved by the Institutional Review Board at Tufts University. All participants provided informed consent. The complete study protocol is described elsewhere (AUTHORS BLINDED, 2015). Analyses for the current paper were restricted to a subsample (n = 400) of women who were prenatal at T1 and had a live birth by T2. Demographic characteristics of the participants are presented in Table 1.

Measures

Maternal depression

The Center for Epidemiological Studies-Depression (CES-D; Radloff, 1977) was used to measure maternal depressive symptomatology at T1, T2, and T3. The 20-item CES-D assesses symptoms experienced during the past week rated on 4-point Likert scales (0 = not at all; 3 = a lot). An overall score, reflecting severity of symptoms, was created by summing the 20 items (possible range, 0–60). Scores of 16 or higher are considered to be “clinically significant” (Radloff, 1991). The CES-D has...
demonstrated strong psychometric properties in both clinical and epidemiological studies with diverse groups, including Hispanic, Black, and Asian-American samples, adolescents, and pregnant and postpartum women (Diego et al., 2009; Naughton & Wiklund, 1993). The Cronbach alpha of the scale in this study was 0.89.

Perinatal and birth outcomes

Data on gestational age, birth weight, 5-minute Apgar score, pregnancy risk factors, complications of birth and delivery, and abnormal conditions of the newborn were derived from the Electronic Birth Certificate, collected by the Department of Public Health at the time of the mothers’ discharge from the hospital. Conditions indicating pregnancy risk included maternal diabetes, hypertension, anemia, seizure disorders, vaginal bleeding, inappropriate weight gain or loss, and so on. Complications of birth and delivery included precipitous or prolonged labor, premature or prolonged rupture of membrane, nonvertex presentation, excessive bleeding, seizures during labor, and other complications. The list of abnormal conditions of the newborn included acidosis, hypotonia, anemia, hypoxia, antibiotics for suspected neonatal sepsis, intracranial hemorrhage, congenital infection, jaundice, positive toxicology screen, significant birth injury, seizure or serious neurologic dysfunction, and other conditions.

Child behavioral adjustment

The Brief Infant-Toddler Social and Emotional Assessment (BITSEA; Briggs-Gowan & Carter, 2006) was used to assess behavior problems at T3. This nationally standardized 44-item questionnaire covers a broad range of socioemotional problems in young children (1–3 years). Mothers indicated how true statements were for their child using a 3-point Likert scale (0 = not true/rarely to 2 = very true/often). The problem score is created by summing 31 problem items (range, 0–62); higher scores indicate greater levels of behavioral problems. The Cronbach alpha of the scale in this study was 0.80. A cut score was created using norm tables provided in the scoring manual to indicate whether a child’s behavior is in the range of clinically significant problems (25th percentile). These cut scores are adjusted for prematurity, child’s age, and sex. The BITSEA has been found to have good psychometric properties with Hispanic and Spanish-speaking populations, as well as low-income families (Hungerford, Garcia, & Bagner, 2015).

Statistical Analyses

Participants were divided into two groups based on their T1 depression score: antenatally depressed group (ADG; n = 160), if the score was above the cutoff of 16, indicating presence of clinically significant symptoms of depression, or healthy3 GROUP (HG; n = 238), if their score was below the cutoff. Depression trajectories of these two groups of mothers were analyzed using latent growth curve modeling (LGCM). LGCM uses repeated observations to model the following latent (unobserved) scores: 1) the mean initial level of depression (the intercept); 2) the mean change in depression over time (the slope); and 3) the variance and covariance terms describing the distribution of individual departures from the mean trend. In addition to describing group- and individual-level growth, the LGCM also can be used to study predictors and consequences of change (Duncan & Duncan, 2004).

We used a multigroup approach to LGCM, which is useful when several distinct developmental pathways, rather than a single underlying trajectory for all individuals, are hypothesized. We fit the conceptual model illustrated in Figure 1 separately for HG and ADG participants, and compared their estimated mean intercepts and slopes, the amount of variability around these mean trends, and the effects of intercept and slope on the variables of interest (Apgar score, gestational age, pregnancy risk, and child behavioral problems at T3). To formally test the differences between HG and ADG participants, we compared the model fit statistics of the hypothesized model against the fit statistics of a series of models in which parameters are restricted to be the same (invariant) in both groups (e.g., the slopes of each group are restricted to be equal). If the more restrictive model was found to fit the data as well as the fully relaxed model, we would conclude that the model parameter was not significantly different across the groups. Analyses were conducted in Mplus 7.3.

Missing Data

Primary reasons for missingness were study attrition (12%) and absence from the Department of Public Health dataset (11%). Full-information maximum likelihood estimation was used to account for missing data. In full-information maximum likelihood estimation, a likelihood function for each individual is estimated based on the variables that are present (Enders, 2013). Full-information maximum likelihood estimation has been shown to produce unbiased parameter estimates and standard errors under the missing at random assumption (Schafer & Graham, 2002).

Table 1

Demographic Socioeconomic Characteristics of Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n (%)/M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at initial assessment</td>
<td>18.46 (1.28)</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>White non-Hispanic</td>
<td>139 (35%)</td>
</tr>
<tr>
<td>Black non-Hispanic</td>
<td>83 (21%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>136 (34%)</td>
</tr>
<tr>
<td>Other non-Hispanic</td>
<td>36 (9%)</td>
</tr>
<tr>
<td>Place of birth</td>
<td></td>
</tr>
<tr>
<td>U.S. mainland</td>
<td>312 (79%)</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>31 (8%)</td>
</tr>
<tr>
<td>Foreign born</td>
<td>51 (13%)</td>
</tr>
<tr>
<td>Preferred language</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>286 (72%)</td>
</tr>
<tr>
<td>Spanish</td>
<td>19 (5%)</td>
</tr>
<tr>
<td>English and other language</td>
<td>88 (22%)</td>
</tr>
<tr>
<td>Other language</td>
<td>1</td>
</tr>
<tr>
<td>Employed</td>
<td>101 (26%)</td>
</tr>
<tr>
<td>In school</td>
<td>209 (53%)</td>
</tr>
<tr>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>&lt;11 grades</td>
<td>249 (63%)</td>
</tr>
<tr>
<td>High school or GED</td>
<td>109 (28%)</td>
</tr>
<tr>
<td>Any year of college</td>
<td>25 (6%)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>103 (26%)</td>
</tr>
<tr>
<td>Married</td>
<td>12 (3%)</td>
</tr>
<tr>
<td>Unmarried, but in relationship</td>
<td>270 (71%)</td>
</tr>
<tr>
<td>Pregnancy planned</td>
<td>45 (11%)</td>
</tr>
<tr>
<td>Timing of first assessment</td>
<td></td>
</tr>
<tr>
<td>First trimester</td>
<td>55 (14%)</td>
</tr>
<tr>
<td>Second trimester</td>
<td>192 (49%)</td>
</tr>
<tr>
<td>Third trimester</td>
<td>118 (30%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>30 (8%)</td>
</tr>
<tr>
<td>Male child</td>
<td>215 (55%)</td>
</tr>
</tbody>
</table>
mean trends were similar in both groups. Significant testing that the intercepts and slopes of ADG and HG were group (HG). Model invariance tests (not shown in table) deter-
rate of 1.01, resulting in a 2 point increase by T3 from the mean
group. Depressive symptoms of the HG mothers increased at the
initial depression, but not in the rate of change over time in this
around the slope was not, indicating individual differences in the
variance around the intercept was signiﬁcantly different (p < .001), but the variances around these mean trends were similar in both groups.

### Results

#### Bivariate Associations with AD

Results of t tests and chi-square analyses comparing HG and ADG are presented in Table 2. Both groups had similar pregnancy characteristics and birth outcomes. The only significant difference between these two groups was in their children’s behavioral outcomes at T3.

#### Characteristics of Depression Trajectories

Results of the multigroup LGCM are summarized in Table 3 (see Model 1). The average depression score for AD mothers was 24.86 at T1, and decreased over time at a rate of 4.38, resulting in an average depression score of 16.10 by T3. The variance around the intercept was signiﬁcant, but the variance around the slope was not, indicating individual differences in the initial depression, but not in the rate of change over time in this group. Depressive symptoms of the HG mothers increased at the rate of 1.01, resulting in a 2 point increase by T3 from the mean initial score of 8.31. There were signiﬁcant individual differences in both the initial level and the rate of change in the healthy group (HG). Model invariance tests (not shown in table) determined that the intercepts and slopes of ADG and HG were signiﬁcantly different (p < .001), but the variances around these mean trends were similar in both groups.

#### Path Models of Child Behavior Problems

Model 2 in Table 3 summarizes estimated parameters of the mediation model illustrated in Figure 1. No evidence of a

* Tests statistics are reported for differences at p < .05.

\( \chi^2(t, p \text{ Value}) \)

\( \text{Healthy} \quad n \quad \text{M (SD)/%} \quad \text{Antenatally Depressed} \quad n \quad \text{M (SD)/%} \)

<table>
<thead>
<tr>
<th>Depressive symptoms</th>
<th>Healthy</th>
<th>M (SD)%</th>
<th>Antenatally Depressed</th>
<th>M (SD)%</th>
<th>( \chi^2(t, p \text{ Value}) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum score (T1)</td>
<td>238</td>
<td>8.30 (4.27)</td>
<td>160</td>
<td>25.08 (7.69)</td>
<td>( t(396) = -27.90, p &lt; .0005 )</td>
</tr>
<tr>
<td>Sum score (T2)</td>
<td>199</td>
<td>10.02 (8.97)</td>
<td>125</td>
<td>17.72 (11.03)</td>
<td>( t(322) = -6.88, p &lt; .0005 )</td>
</tr>
<tr>
<td>Percent above cutoff (T2)</td>
<td>22%</td>
<td>49%</td>
<td></td>
<td>22%</td>
<td>( \chi^2(1) = 26.0, p &lt; .0005 )</td>
</tr>
<tr>
<td>Sum score (T3)</td>
<td>200</td>
<td>10.13 (9.09)</td>
<td>142</td>
<td>16.42 (9.53)</td>
<td>( \chi^2(1) = 6.18, p &lt; .0005 )</td>
</tr>
<tr>
<td>Percent above cutoff (T3)</td>
<td>22%</td>
<td>52%</td>
<td></td>
<td>52%</td>
<td>( \chi^2(1) = 33.32, p &lt; .0005 )</td>
</tr>
</tbody>
</table>

* We also tested the hypothesis that random assignment to the home visiting group would moderate the proposed mediated paths. Results were not signiﬁcant and are not presented here.

High rates of depression among adolescent mothers underscore the importance of understanding the course of depressive symptoms in this population, and their effects on child development. Few studies, however, have examined trajectories of depressive symptoms in young mothers, explicitly modeling change over time and accounting for individual variability in developmental change. The present study is based on prospective assessments of symptoms in a relatively large sample of pregnant young women, who varied with regard to prenatal levels of depressive symptoms. Results provided evidence for distinct profiles of depression trajectories, rather than a single developmental trend that describes all mothers equally well. Specifically, women who were depressed during pregnancy (ADG) tended to report a decrease in symptoms, whereas prenatally asymptomatic women (HG) reported a slight increase in symptoms over the course of 2 years. Further, women in the HG varied signiﬁcantly around the mean symptom trajectory, which suggests that some women in this group might have experienced depression after birth.
In addition to offering a nuanced view of the course of young mothers’ depression across pregnancy to after birth, our study adds to the body of literature about those characteristics of maternal depression (i.e., timing, chronicity) that make it more detrimental for child development (McLearn, Minkovitz, Strobino, Marks, & Hou, 2006). We found that both AD and symptomatology in the postnatal period predicted elevated mother-reported child behavior problems 2 years later. Specifically, our results showed that, on the one hand, AD had a significant direct effect on reports of children’s behavior problems, even after controlling for the effect of later symptoms. On the other hand, the effect of a one point increase in depressive symptoms each year was 50% more detrimental to the children of mothers in the HG, compared with ADG (effect sizes 1.44 vs. 0.99).

Taken together, these findings suggest multiple patterns in which maternal depression detrimentally affects children, each with a different set of risk factors. In the antenatal onset pattern, a child is exposed to maternal depression over a longer period, starting in utero; as such, developmental problems of the infant may be a function of the combined (cumulative) effects of AD and symptoms after birth. For this group of infants, the risk factor is chronicity; even though this group experienced a decrease in symptoms over time, on average, depression scores remained above the clinical cutoff. In the HG, increased symptoms in the parent after the birth are linked to a more negative reaction that may result in more child behavioral problems. In other words, for this group of children, the key risk factor might be the change in the parent who was previously healthy. It is possible that a mother who develops depressive symptoms after the birth of her child may experience greater difficulty focusing on the needs of the child, compared with a chronically depressed mother. For example, one study found that concurrent depressive symptoms could be associated with less time spent with the child, less safety and child development practices than earlier depressive symptoms (Boyce, 2006).

We did not find support for the hypothesis that the effect of AD on mother-reported child behavior problems would be mediated by a higher risk of obstetrical outcomes; however, we hesitate to interpret this finding as an indication that no such mediated pathway exists. It seems that our sample is unusual in that AD was not related to more adverse obstetrical outcomes (low birth weight, preterm delivery, and pregnancy risk), despite a large

### Table 3

**Characteristics of Depression Trajectories and Predictors of Child Behavioral Problems in Antenatally Depressed and Healthy Mothers**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy group (n = 238)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean depression intercept</td>
<td>8.32 (0.28)**</td>
<td>8.32 (0.28)**</td>
<td>8.32 (0.28)**</td>
<td></td>
</tr>
<tr>
<td>Mean depression slope</td>
<td>1.01 (0.32)**</td>
<td>0.99 (0.32)**</td>
<td>1.00 (0.32)**</td>
<td></td>
</tr>
<tr>
<td>Depression intercept variance</td>
<td>12.78 (5.45)**</td>
<td>11.48 (5.60)**</td>
<td>12.66 (5.45)**</td>
<td></td>
</tr>
<tr>
<td>Depression slope variance</td>
<td>10.04 (3.82)**</td>
<td>9.38 (3.77)**</td>
<td>10.37 (3.66)**</td>
<td></td>
</tr>
<tr>
<td>Intercept and slope covariance</td>
<td>−3.57 (3.31)</td>
<td>−2.86 (3.41)</td>
<td>−3.53 (3.27)</td>
<td></td>
</tr>
</tbody>
</table>

Path model

- Intercept → pregnancy risk
- Intercept → Apgar score
- Intercept → gestational age
- Intercept → child problems
- Slope → child problems
- Pregnancy risk → child problems
- Apgar → child problems
- Gestational age → child problems

Antenatal depression group (n = 160)

- Mean depression intercept | 24.86 (0.62)** | 24.91 (0.62)** | 24.87 (0.62)** |
- Mean depression slope | −4.38 (0.46)** | −4.36 (0.46)** | −4.35 (0.46)** |
- Depression intercept variance | 33.30 (15.49)** | 38.28 (16.24)** | 34.20 (15.50)** |
- Depression slope variance | 15.62 (8.02) | 18.91 (7.78)** | 17.46 (7.62)** |
- Intercept and slope covariance | −8.76 (8.49) | −11.56 (8.68) | −9.24 (8.33) |

Path model

- Intercept → pregnancy risk
- Intercept → Apgar score
- Intercept → gestational age
- Intercept → child problems
- Slope → child problems
- Pregnancy risk → child problems
- Apgar → child problems
- Gestational age → child problems

- Mean depression intercept | 24.91 (0.62)** | 24.87 (0.62)** | 24.87 (0.62)** |
- Mean depression slope | −4.38 (0.46)** | −4.36 (0.46)** | −4.35 (0.46)** |
- Depression intercept variance | 33.30 (15.49)** | 38.28 (16.24)** | 34.20 (15.50)** |
- Depression slope variance | 15.62 (8.02) | 18.91 (7.78)** | 17.46 (7.62)** |
- Intercept and slope covariance | −8.76 (8.49) | −11.56 (8.68) | −9.24 (8.33) |

Path model

- Intercept → pregnancy risk
- Intercept → Apgar score
- Intercept → gestational age
- Intercept → child problems
- Slope → child problems
- Pregnancy risk → child problems
- Apgar → child problems
- Gestational age → child problems

**Abbreviations:** CFI/TLI, comparative fit index/Tucker Lewis index; RMSEA, root-mean-square error of approximation; SRMR, standardized root mean square residual. Lower values of RMSEA and SRMR (<0.08) and higher values of CFI and TLI (>0.90) indicate good fit.

- *p < 0.05; **p < 0.01; ***p < 0.001.
literature documenting this link in adult mother samples (Grote et al., 2010). It is even more unexpected given the strong evidence for a link between teen pregnancy and elevated risk of low birth weight and other adverse birth outcomes (Heron et al., 2010; Swamy, Edwards, Gelfand, James, & Miranda, 2012). Most participants in our study had healthy pregnancies and births, including mothers with AD. Our findings may not match those from other epidemiologic studies because the sample was drawn in a state with universal healthcare, high access to quality prenatal care, and low rates of preterm births (The Annie E. Casey Foundation, 2014). Further, our intervention study excluded very young mothers (<16 years old), thus potentially omitting the most at-risk mother–child dyads; research documents that the youngest adolescent mothers and their children are at greatest risk for adverse outcomes (Levine, Pollack, & Comfort, 2001).

Strengths and Limitations

The strengths of this study include a large sample size and a longitudinal design, which allowed us to test a complex media-
tion hypothesis using latent growth curve analysis. However, our study is not without important limitations. First, the instrument we used to collect information on mothers’ depressive sympt-
oms identifies only a risk of having the disorder. Future research should follow-up these results with a diagnostic assessment. It is also possible that CES-D overestimates the prevalence of depression when administered prenatally, because it includes items that describe somatic symptoms that are typical in preg-
nancy (e.g., trouble sleeping, appetite changes). Additionally, mothers who experienced higher depressive symptoms may have over-reported children’s behavior problems. For this reason, findings should be replicated using independent ob-
servations of child development difficulties. A recent study (Guyon-Harris et al., 2016) found similar results to those reported here when using maternal reports of toddler problems, but not when using an observational measure of toddler affect.

Further, although our study used a longitudinal design, women were assessed only once during the prenatal period, which does not provide information about the stability of symptoms during pregnancy. Next, because ADG and HG groups were created based on their depression scores at T1, we cannot rule out regression to the mean as an alternative explanation to the findings. Given that our research questions pertained spec-
cifically to young mothers, generalizability beyond this specific population is in question. We do not know whether results would be similar for older mothers, mothers with older children, or multiparous women. Finally, our findings are generalizable to a specific population of young mothers—those who sought to receive home visiting services. Notwithstanding these important limitations, results of our investigation begin to fill the gap in the literature pertaining to AD in young mothers by documenting distinct trajectories of symptoms across the transition to parenthood (pregnancy through toddlerhood) and highlighting complex mechanisms underlying effects of maternal depression on the child.

Implications for Practice and/or Policy

One of the main implications to emerge from this study is the importance of prenatal screening for depression in young mothers. Results indicate that 40% of the sample endorsed a level of symptoms during pregnancy consistent with a clinical diag-

nosis. To compare, studies have found the rate of AD in women across all ages to be 14% (Wisner et al., 2013). A public health approach would include screening for depression during preg-
nancy and, if warranted, initiating treatment during pregnancy and early postpartum. There is evidence that beginning treat-
ment during pregnancy may be more effective, both in prevent-
ing continued depression after birth, and in fostering healthy mother–child relationship functioning (Meltzer-Brody et al., 2013). There is a need to educate health care providers about the implications of AD for not only the mothers, but for their children as well. We found that children exposed to maternal depression in utero may be at highest risk, which suggests that obstetric care providers need to recognize the importance of early detection to promote healthy development of the child.

Finally, our results also highlight the need for service improve-
ments toward an integrated system of care that would support mothers during the prenatal, as well as postpartum, periods. A sizable proportion of mothers in our study exhibited elevated symptoms only after giving birth, suggesting that antenatal screening is not sufficient to detect all cases of maternal depression. Although women’s health service providers spend considerable amounts of time with pregnant women, postpartum care typically is limited, which may cause depression to go undetected in a large number of women. Pediatric services, on the other hand, may not be equipped to identify depression in mothers. As such, public health initiatives aimed at mitigating maternal depression should focus on coordi-

nating different systems that interact with mothers (e.g., ob-

stetric, pediatric, primary care, and infant mental health programs) to support and strengthen the whole family (Guyon-

Harris et al., 2016). For example, mothers might benefit from consultations, assessments, and counsel on treatment options offered during well-child visits. The benefit of such prevention-focused services during the post-birth period could go beyond mothers’ mental health and affect their overall health as well. For instance, caring for an infant may negatively affect women’s physical activity and dietary habits, thus increasing the risk for obesity and heart disease. Postnatal depression and maternal obesity might share common roots (Milgrom, Skouteris, Worotniuk, Henwood, & Bruce, 2012). These risks could be reduced using an integrative, family-centered approach to women’s care after birth.

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