

## **PAA 2008 – Extended Abstract**

### **Maternal Depression and Children’s Cognitive Achievement during Elementary School: The Role of Maternal Education and School Involvement**

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#### **Background**

The effects of parents’ psychological functioning on children’s adjustment have long been of interest to researchers (Elder 1974). More recently, as researchers look for factors mediating the association between family structure, socioeconomic disadvantage, and child outcomes, researchers are increasingly taking note of the role of maternal depression (Brown 2004; Carlson and Corcoran 2001; Petterson and Albers 2001). Although the causal links between family structure or socioeconomic disadvantage and mothers’ depressive symptoms are still being debated (Hao and Xie 2001), there is general agreement among researchers that depression affects the quality of mothers’ parenting, which subsequently reduces children’s well-being (Amato 2005; Jackson, Brooks-Gunn, Huang, and Glassman 2000).

The effects of maternal depression on parenting practices have typically been observed within the home environment. In general, researchers find that maternal depressive symptoms are associated with less parental supervision, punitive or inconsistent disciplinary practices, and less emotional support of children (Amato 2005). Researchers have been less inclined, however, to examine the interconnection between maternal depression, parenting practices, and children’s well-being in other domains of family life, such as the school. Indeed, there is good reason to believe that depression may affect mothers’ abilities to promote their children’s academic success at school. For example, depressed mothers may communicate less frequently with teachers. Less frequent communication, in turn, would reduce mothers’ opportunities for partnering with school personnel to promote their children’s learning or for intervening at school to protect and advance their children’s interests (Hill et al 2004; Parcel and Darfur 2001). Because parental involvement at school is linked to children’s academic achievement (Useem 1992), it is important to consider the factors related to variations in levels of mothers’ school involvement. To date, most studies on school involvement look at the sociodemographic characteristics of families, such as SES, race/ethnicity, and education (Lareau, 1989; Baker and Stevenson, 1987). Thus, the first part of this study builds on prior research by exploring the effect of maternal depression on school involvement and children’s academic achievement across the elementary school years.

The second part of this study focuses on the individual-level factors that may reduce the negative effect of depression of children’s achievement. This is an important second step

because it addresses not only the factors that hinder children's development, but also the factors that help. Furthermore, children of depressed mothers (compared to children of non-depressed mothers) are more likely to be living in low-income families or with single parents, and therefore experiencing multiple disadvantages (Pettersson and Albers, 2001). Hence, it is all-the-more important to consider protective factors along side risk factors. In this second step, I look specifically at the role of maternal education in reducing the association between depression, school involvement, and children's educational achievement. While depression is also linked to education (Mirowsky and Ross 2003), with less educated mothers reporting greater depressive symptoms, education also provides women with valuable resources that help mothers navigate their children's passage through school. For example, education provides women with more knowledge about what is needed for their children to succeed in school, and provides women with the confidence to interact regularly with school personnel (Hill et al 2004; Lareau 1989). In fact, the positive effect of education is likely to persist, net family structure variables or socioeconomic status. As such, the academic disadvantages associated with maternal depression may be reduced for children whose mothers possess more education.

## **Data and Measures**

This study draws on data from the NICHD Study of Early Child Care and Youth Development (SECCYD), a longitudinal study following children from birth through high school. The SECCYD was designed to understand children's experiences in child care, at home, and at school, and the implications of these experiences for their long-term development (see NICHD ECCRN, 2005 for more information). The families who participated in this study were recruited from hospitals in ten U.S. cities where, during selected 24-hour sampling periods in 1991, 8,986 women were visited in the hospital shortly after giving birth. The mother had to be at least 18 years of age and conversant in English, the infant had to be a singleton and healthy, and the family could not be planning to move within the following year. When infants were one month old, 1,364 families were enrolled in the study. Although the sample was not nationally representative, it was economically, geographically, and racially diverse. These families participated in interviews, diagnostic tests, and observations in home, laboratory, and eventually school visits at regular intervals up through the target children's ninth grade year.

When children were in elementary school, the key variables in our study were collected at first, third, and fifth grade—with the exception of maternal education, which was measured at the time of the child's birth. The analytic sample for this study ( $N = 819$ ) includes children that participated in the SECCYD through fifth grade, and who had valid data on the measure of maternal involvement and the Woodcock-Johnson subsets for all three time points. The key variables in this study are described below.

*Maternal Depression.* Depression was measured using the “My Feelings” questionnaire, which was developed directly from the Center of Epidemiological Studies Depression

Scale (CES-D). Mother's responses were summed to create a scale of depression ranging from 0-60, with higher values denoting higher levels of depressive symptomology. The raw items used to create the maternal depression score had high internal reliability. Cronbach's alphas ranged from = .90 (at the third grade data collection) to .91 (at third and fifth grade data collection).

*School Involvement.* Mothers' level of school involvement was measured by the *parent encouragement of school* composite variable. This variable was created by adding the responses to a 10-item teacher questionnaire that was designed to specifically assess the degree to which mothers displayed various aspects of school involvement. Items were scored on a five-point Likert scale, ranging from 1 = "Never" to 5 = "A Great Deal." The questionnaire included items such as: "How often does this parent ask questions or make suggestions about his/her child?" and "How involved is this parent in his/her child's education and school life?" The raw items used to create the parent encouragement of school score had high internal reliability. Cronbach's alphas ranged from = .91 (at the first grade data collection) to .93 (at the fifth grade data collection).

*Cognitive Achievement.* Academic achievement was measured by two subtests of the *Woodcock-Johnson Psycho-Educational Battery-Revised (WJ-R)*. The WJ-R is a widely used, wide-range comprehensive set of individually administered tests used for measuring cognitive abilities and achievement. The Applied Problems subtests—which included simple math problems and calculations—gauged math achievement at each time point. The Letter Word Identification subtest—which included items on symbolic learning and reading identification—gauged reading achievement at each time point.

*Maternal education* was measured by mother reports of the total number of years of education they had received and their highest level of degree attainment. In most instances, the value of maternal education directly corresponded with the number of years mothers spent in school. Mothers with either multiple postgraduate degrees were assigned a value of 21. Mothers with a GED were assigned a value of 12.

## **Analysis Plan**

In order to examine (1) the associations among maternal depression, school involvement, and children's achievement, (2) the protective role of maternal education, (3) and ways in which these associations may change across the elementary school years, I use latent growth curve modeling. Not only does latent growth curve modeling allow me to estimate changes in behavior over time and individual differences in these changes, but it also allows me to estimate the direct effects of specific variables while simultaneously estimating their net effect, adjusted for the effect of other factors. Thus, for maternal education, I can estimate how much of the association between changes in maternal depression and changes in parental involvement has to do with the level of maternal education, adjusted for its direct effect on other variables.

To begin, the first model in this study will examine the effect of the level and slope of maternal depression on the level and slope of maternal involvement in school. As a second step, I will add in education, thereby adjusting the model coefficients for the direct effect of education on depression and involvement. As a final step, I will add children's academic achievement across first, third, and fifth grade into the model. All models will be estimated in Mplus, which uses a maximum likelihood estimator that uses information from all observations to estimate missing data.

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