

Maternal Depression and Time Investments in Children in Early Life

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Abstract

Maternal depression has been linked to poor home environment for children. Prior studies in this topic have focused on the depressed mothers' parenting styles and parent-child relationship. Relative few studies, however, have paid attention to the role of maternal psychological wellbeing in shaping mothers' time with children. This is an oversight because maternal time investments are a key aspect of home environment and are critical for children's healthy development. Using the birth cohort data from the Longitudinal Study of Australian Children (LSAC), this study examines the association between maternal depression and time investments from birth to aged 5. Regression results show that maternal depression is associated with decreased in mother's time in play with child and management child's activities during infancy. However, maternal depression is not related to any category of maternal time investments during toddler year and preschool year. Overall, preliminary results suggest that maternal depression only has a limited effect on time investments in children. Depressed mothers do not substantially reduce their time spending with children. Findings imply that the impact of maternal depression on children's home environment is largely through its influence on family dynamics instead of the amount of time mothers allocated to children. Depression appears not change the gendered nature of child caring responsibilities of women.

Introduction

The healthy development of a child requires substantial parental investments. In literature, the hallmark and broad conceptualization of parental investments is to provide a set of developmental contexts that are associated with children's well-being and learning (Bronfenbrenner 1979). Each context engages children in distinct matrix of activities and interactions that provide children with a particular set of socialization experiences (Lareau 2011). These socialization experiences, either positive or negative, have considerable implications on the developmental outcomes in children. Some are associated with the learning of specific knowledge and skills. Others may carry with liabilities and risks that undermine children's health and well-being. A family that structures its children's time to provide them with specific socialization experiences that offer chances for developing intellectual, social, and emotional competencies is making long-term investment in the economic future and health of its children.

When it comes to parental investments, it not only refers to the materials that parents provide to children. Active management of children's socialization experience and participation of children's learning plays a key role. The most direct assessment of parental involvement in children's life is time spent with children. Parents' time with children matters. Of parental time investments, mothers time with children represent the most significance resources for children, particular in early childhood, for several reasons. For and foremost, women remain the primary caregivers within the household despite the remarkable increase of women's labor force participation in past few decades. Studies across countries all found that mothers spend disproportional time caring children as compared to fathers.

Socioeconomic position, maternal employment, and family structure deeply affect a mother's time spent with children. High SES mothers often place more values on child education and actively monitor children's learning opportunities as compared to their low SES counterparts. Kalil, Ryan, and Corey (2012) consider education as an important way through which mothers increase their "management" skills. Studies show that children whose mothers employ full-time have less time with their mothers than children whose mothers work part-time or not working (Bianchi and Robinson 1997; Hofferth and Sandberg 2001). Similar to maternal employment, single-mothers may find it more difficult to actively participate in children's learning and socialization activities. Thus, the resourcefulness of a family and mothers' education make children from high SES families receive more maternal time investments in activities that are conducive to their successful development.

While prior literature has explored a wide range of factors that are associated with maternal time investments in children, maternal psychological wellbeing receives relatively little attention. This study proposes that maternal psychological wellbeing may be an influential factor in shaping maternal time investments in children. A large volume of literature has identified a strong negative association between maternal depression and family environment. Maternal depression has been linked to harsh parenting, more parent-child conflicts, the decline of parental warmth, and reduced abilities in monitoring children's activities and behaviors. However, to my knowledge, no study has investigated the association between maternal depression and time investments in children.

This study aims to address the gap in literature by examining the role of maternal depression in shaping mothers' time investments in young children. The focus on young children is primary

due to the fact that mothers are the most important caregivers and educators for children aged 0-5. Furthermore, early childhood is critical for children's learning and set trajectory for future academic progress and behavioral development. As such, maternal time investments in early life can have long-lasting imprints on children life chances. Finally, most prior studies on maternal time investments focused on school-aged children. Relatively few studies concerned parental time investments in early childhood. This study also aims to offer new insights into maternal time investments from the very beginning of one's life.

Methods

In this study, I examine the association between maternal depression and time investments in children in early childhood using data from the Longitudinal Study of Australian Children (LSAC; Australian Institute of Family Studies [AIFS], 2009). Information about the study measures came from the LSAC Data User Guide (AIFS, 2009). LSAC is a nationally representative sample of Australian children. LSAC was designed to focus on family and social issues and capture information about child development. Data were collected on a wide range of topics including family socioeconomic status, family process, children's mental and physical health and their child care, home, school, and everyday experiences. LSAC follows two cohorts of Australian children, a birth cohort of children between 0-12 months in 2004 and a kindergarten cohort, between 4 and 5 years old in 2004.

The present study focused on the birth cohort. The recruitment of children took place between March and November of 2004, and families were interviewed every two years. The birth cohort started with approximately 5,000 children. The data collection began at 0-1 years old, 2-3 years old, 4-5 years old, and 6-7 years old. This study relied on the first three waves of data because time-use data were only collected for the first three waves. At the third wave of the interview, the retention rates of the main survey were 74% for the birth cohort (AIFS 2013). The LSAC sample, when weighted, is representative of a recent cohort of Australian children.

These data offer several advantages for the proposed research questions. The time diary approach is a relatively accurate method for measuring mothers time spent with children as compared to asking mothers to estimate the total amount of time spent with children in each activity. Few other nationally-representative surveys have collected information on children's time-use and time spent with mothers in early years. Furthermore, the time-use diary was filled out by mothers which provided fairly accurate estimates of maternal time with children as compared to time diaries filled by others. Finally, the survey's large sample size facilitated comparisons across not only socioeconomic spectrum but also across maternal depression scales.

Maternal Time Investments in Children: One innovative feature of the LSAC dataset was its child time diary data. For each wave of the survey, the LSAC asked mothers to collected time diary for every child for two full days—one randomly selected weekday and one randomly selected weekend day. The time-diary asked questions about the child's flow of activities over a 24 hours period beginning at midnight of the selected day. The time-diary was divided into 96 blocks with each block represented 15 minutes long. The questionnaire asked the primary activity that was going on at that time period, with whom, and where the activity was taking place. The LSAC time-diary listed more than 20 activities, including sleeping, eating, crying, watching TV, reading, listening music, organized activities, indoor play, visiting people, outdoor

activities etc. Appendix A provides detailed information of the pre-coded activities list in the time-diary for each wave.

Using these data, I first computed the amount of time that each child spent on specific activities with mothers on weekday and on weekend day. Next, I estimated weekly time that mothers spent with children on specific activities by multiplying weekday time by 5 and weekend day time by 2. However, activities listed in time-diary change as children age. Activities that are common (e.g., breastfeeding) at young age may not be relevant when children grow up. Thus, to analyze the trajectory of children's time-use, I grouped children's activities into following four categories based on the classification in prior studies (Kalil, Ryan, Corey, 2012; Guryan 2008). These four categories include (1) personal care, (2) play, (3) learning and teaching activities, and (4) management activities.

Maternal Depression: In each wave of the survey, mothers were asked to rate their psychological wellbeing using the 6-Item Kessler Psychological Distress Questionnaire (K6). The K6 is a non-diagnostic, screening tool for assessing mental health conditions in the general adult population. The scale was designed to be sensitive around the threshold for the clinically significant range of the distribution of non-specific distress in an effort to maximize the ability to discriminate cases of serious mental illness from the rest. The scale also shows good psychometric properties. A composite scale was created based on mothers' answer of the six questions. Higher scores indicate severer depressive symptoms of mothers.

Covariates: Because many characteristics of children and families are associated with mothers' time spent with children, several potential confounding variables are included in the analyses. Full control variables included child age, gender, maternal age, maternal education (i.e., less than high school, high school, some college, and bachelor and more), household income, family structure (i.e., two-parent family, single-parent family, cohabitation), Aboriginal/Torres Strait Islander status, urban residence, and state of residence. I did not include maternal employment variables because maternal depression affected mothers' employment and work schedules. Controlling for maternal employment conditions may obscure the relationship between maternal depression and time investments in children.

Analytical Strategy: I began with weighted descriptive statistics of children in the LSAC sample in base line. Next, I used the OLS regressions to link maternal depression to time investments in children at each wave of the survey. I modelled mothers' time with children in each time domain as a function of depression symptoms adjusting for child demographic characteristics, socioeconomic status and other previously described control variables. All regression analyses were weighted.

Results

Table 1 provides the weighted descriptive statistics of children at the baseline. Slightly over half of the children in the sample are male. The mean maternal age in the first wave of survey is approximately 31 years old. Approximately 4% of the sample is aboriginal. About 19% of mothers do not have a high school degree. The average weekly household income is 1236 Australian dollars. Finally, over 70% of children live in two-parent families and about two-third of children live in the city.

Table 2 shows results of regression analysis linking maternal depression and time investments in children in four time categories: personal care, play, learning, and management controlling for all aforementioned covariates. Panel A shows results during infancy, Panel B and Panel C presents results for toddler year and preschool year. Panel A indicates that maternal depression is associated with less time in playing with child and managing child's activities. However, results from Panel B and Panel C suggest that maternal depression does not correlate with maternal time investments in children at 2-3 and 4-5 years old. As such, Table 2 shows that while most of the associations between maternal depression and time investments in children are in the expected direction, I find little evidence that depressed mothers invest less time in children's personal care, play, learning activities, and management.

Discussion

Using nationally representative data from the Longitudinal Study of Australian Children (LSAC), this study examines the association between maternal depression and time investments in children in early life. Results suggest that maternal depression does not have significant association with time investments in children. The only exception is during infancy. Depressed mothers spend less time playing with children, teaching children, and managing children's daily activities. Results from this analysis adds to the literature by looking at whether maternal psychological wellbeing influence maternal time resources as prior research on this topic exclusively focuses on the quality aspect of home environment. It may somewhat surprising that the effects of depression on maternal time investments are minimal. However, theories and studies on gender division of housework may help understand the findings. Despite the dramatic increase of women's education and economic wellbeing during the past few decades, women remain the housekeepers and are responsible for the majority of child caring tasks (Bianchi et al. 2000; Craig 2006). This suggests that maternal depression may not reduce women's child rearing tasks. Depressed mothers (unless very serious) may still need to take care of young children and manage her child's daily activities. In particular, this study examines children aged 0-5, the period when children require substantial amount of their mothers time in helping them on various activities. As such, because of the gendered nature of child care responsibilities, it is not surprising that I find not significant association between maternal depression and time investments in children. However, this does not suggest that maternal depression has no effect of children's home environment. An additional analysis (results not shown) show that maternal depression is strongly related to lower rating in parental warmth and higher rating in haring parenting. Since maternal depression is not related to a decrease of maternal time with children but is associated with poorer parent-child interactions, children with depressed mothers in fact are exposed to harsh parenting for a substantial amount of time. This may be even more detrimental for children's development if depressed mothers spend *less* time with children. As such, the non-effect of maternal depression on time investments in children remain have important implications for children's development and wellbeing.

References

- Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social forces*, 79(1), 191-228.
- Bianchi, S. M., & Robinson, J. (1997). What did you do today? Children's use of time, family composition, and the acquisition of social capital. *Journal of Marriage and the Family*, 332-344.
- BRONFENBRENNER, U. (1979). *THE ECOLOGY OF HUMAN DEVELOPMENT*. Harvard University Press.
- Craig, L. (2006). Does father care mean fathers share? A comparison of how mothers and fathers in intact families spend time with children. *Gender & Society*, 20(2), 259-281
- Guryan, J., Hurst, E., & Kearney, M. S. (2008). *Parental education and parental time with children* (No. w13993). National Bureau of Economic Research.
- Hofferth, S. L., & Sandberg, J. F. (2001). How American children spend their time. *Journal of Marriage and Family*, 63(2), 295-308.
- Kalil, A., Ryan, R., & Corey, M. (2012). Diverging destinies: Maternal education and the developmental gradient in time with children. *Demography*, 49(4), 1361-1383.
- Lareau, A. (2011). *Unequal childhoods: Class, race, and family life*. Univ of California Press.

Table 1: Weighted Descriptive Statistics of Longitudinal Study of Australian Children at Baseline

	Total Sample Mean (SD) or %
Child Male	51.11
Maternal Age	30.97
Aboriginal Status	4.00
Urban Residence	62.54
Maternal Education	
Less than High School	18.67
High School	12.49
Some College	37.31
College	18.19
Postgraduate	13.34
Household Income (per week)	1236
Family Structure	
Single Parent	8.93
Cohabitation	17.78
Married	73.21

Table 2: Associations of Maternal Depression and Time Investments in Children (in Minutes)

	Personal Care	Play	Learning and Teaching	Management
	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)	Coefficient (S.E.)
A. Infancy (Aged 0-1)				
Maternal Depression	-14.63 (22.47)	-96.53 (32.78)**	-40.22 (21.25)	-47.14 (17.01)**
B. Toddler (Aged 2-3)				
Maternal Depression	-8.04 (16.23)	-39.80 (25.44)	-2.96 (12.34)	-21.49 (18.97)
C. Preschool (Aged 4-5)				
Maternal Depression	-7.09 (15.27)	-18.01 (24.34)	-11.14 (18.50)	-8.33 (17.62)

*** P< 0.001; ** P<0.01; * P<0.05

Appendix A: List of Pre-Coded Activities in the Longitudinal Study of Australian Children Time Diary Questionnaire

	Wave 1	Time Domain	Wave 2 & Wave 3	Time Domain
1	Not sure		Not sure	
2	Sleeping		Sleeping	
3	Awake in bed		Awake in bed	
4	Looking around		Eating, drinking, being fed	Personal Care
5	Bathing	Personal Care	Bathing, health care	Personal Care
6	Breastfeeding	Personal Care	Doing nothing	
7	Eating, drinking, being fed	Personal Care	Crying	
8	Crying		Fighting	
9	Destroy things		Destroying things	
10	Held, cuddled		Being reprimanded	Teaching
11	Watching TV		Being held	
12	Listening to CDs, music		Watching TV	
13	Read a story	Teaching	Listening to CDs, radio	
14	Look at book	Teaching	Using computer	
15	Organized activities	Management	Being read	Teaching
16	Crawl, climb	Play	Drawing	Play
17	Other play	Play	Quiet free play	Play
18	Visiting people	Management	Active free play	Play
19	Taken places with adult	Management	Being taught	Teaching
20			Visiting people	Management
21			Organized lessons/activities	Management