

Quantity versus Quality of Care: Maternal Employment, Children's Time Use
and Child Wellbeing

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Introduction

Over the past three decades in the United States, female labor participation, especially among women with young children, has increased dramatically. The percentage of employed women with children under the age of 6 nearly doubled between 1970 and 2001, increasing from 39% to 65% (Ruhm, 2004). This trend has caused concern regarding the effect of early maternal employment on child wellbeing because women remain children's primary caregivers and because recent studies have shown that the first five years of life are crucial to brain development as well as children's cognitive and socio-emotional development (Shore, 1997; Danziger and Waldfogel, 2000). The literature suggests that the effect of early maternal employment has an overall negative effect on child wellbeing but the findings are not conclusive (Bianchi, 2000) with some studies suggesting a negative correlation with cognitive ability and educational achievement when employment occurs at young ages (i.e. under age 6) (Ermisch and Francesconi, 2000; Bernal, 2002; Brooks-Gunn et al., 2002; Ruhm, 2002), or a negative correlation with cognitive ability but only for boys from middle class families (Desai et al., 1989) or only for white children but not for African American or Hispanic children (Han et al., 2001; Waldfogel et al., 2002).

Despite these findings, the literature does not clearly identify the mechanism through which maternal employment should affect child wellbeing. Underlying much of the research is the assumption that women's labor force participation necessarily reduces both the *quantity* and *quality* of maternal time inputs necessarily for children's cognitive and psych-socio growth. However, this assumption may be misleading in light of recent time diary studies that suggest that working parents may also be re-allocating their non-labor time in an effort to maximize their time with children (Bianchi, 2000; Sayer et al. 2004).

First, time diary studies show that while employed mothers of pre-school children do spend less time on childcare than stay-at-home mothers, the difference in direct childcare is not as great as one might expected. Mothers who remain in the workforce until their children reach adulthood spend about 82% of the time spent by non-working mothers on childcare (Bianchi, 2000). Second, most of the difference is due to employed mothers spending less time on passive childcare activities, such as performing household work while supervising children, which involve minimum amounts of child-parent interaction (Nock and Kingston, 1988). Studies also challenge the popular belief that children are better off with stay-at-home mothers. For example, children of employed mothers spend less time watching television and spend a greater proportion of their parent-child time performing activities that enhance human capital (Bianchi and Robinson, 1997; Yeung and Stafford, 2003). Third, time diary research also shows that men have increased involvement in childcare, particularly married men with working spouses (Sandberg and Hofferth, 2001; Yeung et al. 2001). This suggests that children from working, intact families may be benefiting from greater involvement from their fathers. Finally, lack of data on the quality of formal daycare may be driving the observed relationship between maternal employment and child wellbeing. Research shows that formal childcare does not jeopardize parent-child attachment (Howes and Hamilton, 1993) and that consistent, quality childcare may be associated with positive child outcomes (Garces et al., 1995).

The descriptive time diary evidence suggests that maternal employment cannot be viewed as a proxy for either the quantity or the quality of parental care children receive because employed mothers and their spouses are re-allocating their time to prevent work from interfering with childcare. Therefore, it is important to examine more direct measures of parental involvement and to identify which aspects of involvement matter for children's cognitive and behavioral development. For example, can concentrated amounts of quality, active care spent

playing, reading, and talking with children compensate for greater quantities of passive care (i.e. being available but not in direct contact with children)? Does maternal employment have a significant effect on child outcomes independent of the quantity or the quality of time children receive from their parents? Does paternal involvement have the same effect on children as maternal involvement?

Research Goals

My research uses children's time use data, along with traditional demographic and socioeconomic data, from the Panel Study of Income Dynamics (PSID) and its Child Development Supplement (CDS) to examine the effect of maternal employment and parent-child involvement at early ages (0-5 years old) on later child cognitive and behavioral outcomes (5-10 years old). My research offers several important extensions to previous work, including incorporating direct measures of parental involvement rather than inferring the extent of these interactions from employment status. Additionally, I distinguish between the different contexts within which children receive parental care and explore whether certain contexts of care are more important for child wellbeing. For example, I distinguish between the time children spend performing activities when parents are available but not directly participating from time children spend when parents are directly participating. I also distinguish between the types of activities children perform with their parents in order to determine whether children simply benefit from parental involvement *per se*, irrelevant of the activity being performed, or whether time spent on specific types of activities matter, such as activities that are believed to help develop children's cognitive and social capacities. My research pays particular attention to the time young children spend with their fathers in determining their later wellbeing. My research asks the extent to which quality of emotional support and cognitive stimulation in the home environment and the quality of childcare arrangements outside the home contribute to children's cognitive and

behavioral development. Finally, I examine whether maternal employment has an independent effect on child development.

Additionally, this paper extends previous studies that use contemporaneous time use and child outcome data. A recent study using contemporaneous data from the PSID-CDS shows significant associations between patterns of time use and children's achievement and behavioral outcomes (Hofferth and Sandberg, 2001). The current research exploits the newly available second wave of PSID-CDS data to better identify causal relationships between time use and child outcomes and to quantify the persistence of early parenting behavior on children's later development.

Data and Methods

This study uses children's time diary data and traditional survey data from the Child Development Supplement (PSID-CDS) of the Panel Study of Income Dynamics (PSID), a longitudinal study of a nationally representative sample of individuals and families in the United States, with over-samples of low-income and immigrant families. Starting in 1997, the PSID conducted the PSID-CDS, which collected data on children's time use, child development, home environment, and family characteristics for approximately 3,600 children between the ages of 0 and 12. In 2002, 2,907 of the original sample of children were re-contacted for the second round of data collection.

The literature shows that early childhood experiences have a crucial and long lasting impact on children's psychological and cognitive wellbeing (Shore, 1997; Han et al., 2001). My research concentrates on examining the role of early parent-child interactions among the sample of 0-5 year olds in 1997 on their later behavioral and cognitive development (i.e. measured 5 years later in 2002). Exploiting the longitudinal aspects of the PSID-CDS, data from 1997 is

used to measure various aspects of early parent-child interaction and 2002 data is used to measure later child outcomes.

Children's Time Diary Data

A unique aspect of the PSID-CDS is its children's time use module. Detailed information on children's time use was collected for up to two children within each family. Like other time use surveys, information was collected regarding the type of activity performed and the amount of time spent on each activity over the duration of a specified 24-hour period. Unique to the PSID-CDS, additional questions such as "who was doing the activity with the child?" and "who (else) was there but not directly involved in the activity?" were also included in the questionnaire (PSID-CDS User's Guide, 1997). As a result, time use data from the PSID-CDS provides information on the flow of children's activities, as well as the degree of adult involvement associated with each activity. In order to make daily diaries more representative of children's time use over the course of a full week, the PSID-CDS collected diaries for a random weekday and a random weekend for each child. My sample consists of 952 children (age 0-5 in 1997), which represents 79% of the sample of children (age 0-5 in 1997) who completed both weekend and weekday time diaries.

Time diaries focus on capturing the chronology of events over a short period of time. Data collected from this approach has been shown to be more reliable and less subject to social desirability bias than data collected from other methodologies, including traditional, survey-based questions that ask individuals how much time they spend performing specific activities (PSID-CDS User Guide, 1997). Additionally, survey-based methods are not reliable for capturing activities that are performed infrequently or sporadically throughout the day (Juster and Stafford, 1985). While there are no baseline studies that have tested the consistency, validity, and

reliability of time use reports from survey-based methods, substantial research has shown the time diary approach to be reliable and valid (Juster and Stafford, 1985).

Dependent Variables: I am interested in examining two key aspects of child wellbeing, cognitive development and behavioral problems. The Woodcock Johnson Revised Test of Achievement (WJ-R) is used to assess cognitive ability. The WJ-R provides a widely recognized measure of intellectual development and reading and mathematical competence (PSID-CDS User's Guide, 1997). Two subscales are used in this analysis: applied problems and letter-word. The Behavioral Problem Index (BPI) is used to assess behavioral problems such as aggressiveness and/or withdrawnness.

Independent Variables: Using the unaggregated time diary data from the 1997 PSID-CDS, I attempt to capture the multiple contexts within which children receive parental care. For each activity performed by the child, the unaggregated time diaries provide information on who was participating with the child, who was present but not directly participating, the type of activity performed, and for how long the activity was performed. For this paper, I am interesting in studying 3 contexts of care that may matter in terms of child wellbeing: who is providing the care, the level of involvement, and the type of activity.

First, I distinguish between children's time with mothers, fathers and other adult relatives. Then, I identify level of involvement by distinguish the time children spend with mothers, fathers, or other adult relatives in active care from the time they spend in passive care. Following Folbre et al. (2005), active and passive care is defined from the child's perspective. Active care is measured as the total time a child receives direct involvement from an adult (i.e. "who was doing the activity with the child"). Passive care, from a child's perspective, includes 1) total amount of time a child spends alone or with another child and no adult is recorded as participating or available 2) amount of time an adult was noted as available but not participating

(i.e. “who (else) was there but not directly involved in the activity?”) 3) time children spend sleeping or in personal care (Folbre et al., 2005). I use these two measures of context of care in a model that examines the role of parental involvement at early ages in explaining later child outcomes.

In a following model, I further distinguish within the categories of active and passive care by activity type. Following Bittman et al. (2004), I distinguish between parent-child interactions that may directly foster cognitive and emotional development from those that may not. These categories include: active-developmental care, active-childcare, passive-developmental care, and passive childcare. Active, developmental childcare includes direct maternal and paternal involvement in activities that have been shown to enrich children’s language, cognitive and social capacities (Bittman et al., 2004). This includes one-on-one activities such as reading, teaching, playing games, and disciplining children. Active childcare includes all high contact childcare activities, such as feeding, bathing, and dressing, which may help to develop children’s sense of security and emotional wellbeing. Passive developmental care includes time children spend performing developmental activities but with the direct involvement of the parent. This type of activity includes children doing homework and watching educational programs by themselves but under the supervision of their parents. Passive childcare includes low contact childcare activities such as time spent sleeping and playing with other children under the supervision of parents.

Other Independent Variables: Children of with working mothers spend more time in formal daycare than children of non-working mothers (Hofferth and Sandberg, 2001) and as result, the quality of formal, non-familial childcare may contribute to children’s cognitive and emotional growth. Failing to account for the quality of formal care may result in confounding the unobserved effect of poor quality childcare with the observed negative effects of maternal employment in past research. Childcare costs and retrospective information on children’s past

childcare experience in the PSID-CDS is included to capture the quality of childcare and past exposure to formal childcare. While childcare costs is not a precise measure of the quality of formal childcare arrangements, research has shown that it is moderately associated with quality of care and that cost of care can be a useful proxy (NICHD Child Care Research Network, 1997).

Selection bias is an important concern in estimating the effects of early maternal employment because the characteristics of women who work may be systematically different than those who do not. Likewise, unobserved heterogeneity in the characteristics of children may also introduce bias (Ruhm, 2002; Bernal, 2002). I include an extensive set of child, mother and family characteristics in an attempt to control for such characteristics than may be associated with child outcomes. These variables include: child's gender and age, children's health (e.g. disabilities and health problems during childhood), sibship size, mother's age and education at child's birth, mother's cognitive skills and psychological wellbeing, parenting attitudes, mother's marital status, and family income 1 year prior to birth, and Home Observation for Measurement of Environment (HOME) Scale of physical home environment and degree of home cognitive stimulation.

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