How Young Mothers Manage: Searching for Heterogeneity after an Early Birth

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There has been much debate in the social sciences about the socioeconomic consequences of adolescent pregnancy and childbearing. Early scholarship argued that teenage motherhood increases the likelihood of cash assistance and hinders women's educational attainment and earnings (Card and Wise 1978). Others disputed these claims and argued that adolescents' prospects would have been limited even in the absence of an early birth (Geronimus and Korenman 1992). These contradictory perspectives have encouraged scholars to think critically about issues related to selection, statistical modeling, and unobserved heterogeneity. As a result, an emerging area of research relies on instrumental variables, fixed effects, and propensity score models in an attempt to estimate the causal effect that teenage childbearing has on women's attainments. These approaches implicitly focus on *average* effects, and very few studies consider how adolescents may differ in their response to parenthood. Our research fills a critical gap in the literature by allowing the effect of teen childbearing to vary across individuals. Studying such heterogeneity can help us understand what allows young women to thrive in spite of becoming mothers at young ages and identify those who are most likely to struggle. We rely on recent methodological advances that detect such heterogeneity in the presence of systematic selection (Morgan and Todd 2008; Xie et al. 2012). If there is evidence of effect heterogeneity, we ask under what conditions these young mothers can achieve socioeconomic success. By understanding how young women differentially respond to pregnancy, our research informs policy to better serve mothers and their children.

Background

Although past work argued that early childbearing was strongly detrimental to the educational and labor market outcomes of young women, a new generation of research finds much more modest impacts on mothers' outcomes (Ashcraft 2013; Lee 2010). Nonetheless, compared to women who postpone childbearing, teenage mothers have lower wages and income, are more likely to receive welfare, and are less likely to graduate high school and enroll in postsecondary institutions (e.g. Fletcher and Wolfe 2009). There are several possible mechanisms for these effects, but they are rarely explored. Mothers may have to divert time, money, and energy away from investments in themselves toward investments in their children; the stigma of being a teen mother may fracture social relationships or cause psychological distress; or young women may not have accumulated the socioemotional resources necessary to balance motherhood and their own pursuits.

Focusing on the mechanisms by which childbearing affects young mothers implies variation in the outcomes. The claim that a teenage birth has little effect on poor women because of their bleak prospects regardless of motherhood implicitly suggests that early childbearing has a more

negative effect on women with greater socioeconomic prospects, because they must sacrifice their own opportunities in exchange for childrearing. The consequences may also be greater for teen mothers who receive less support from their parents, partners, or others in their social networks than for those with such resources (Roye and Balk 1996).

Psychological responses to motherhood likely vary as well. Some may struggle with the stigma or stress that accompanies teen motherhood, whereas others may derive an enhanced sense of responsibility, stability, and self-worth (Brubaker and Wright 2006; Unger et al. 2000). Qualitative research finds that many low-income women believe motherhood has improved their quality of life. Some young mothers claim that having a child deterred them from alcohol/drug use, provided a sense of order and routine, and created greater incentives for acquiring more education and finding employment (Edin and Kefalas 2005; Zachry 2005). Others argue that teen pregnancy serves as an adaptive strategy for underprivileged adolescents—particularly young black women—due to their shorter life expectancy and limited opportunities for advancement (Geronimus 2003). Given that a number of qualitative studies have identified perceived *benefits* to early childbearing, it is puzzling that demographic research has yet to examine heterogeneity in the consequences of teenage fertility. Our project looks for variation in the effects of teenage fertility on mothers' academic performance, educational attainment, and total family income by asking the following questions:

1) Is there evidence of systematic selection into teenage childbearing, where those who would reap greater benefits are most likely to become mothers (positive selection), or where those with the most to lose are more likely to become mothers (negative selection)?

2) Are the sources of heterogeneity tied to the social, psychological, or material resources available to young mothers?

Data and Method

We rely on data from the Child and Young Adult cohorts of the National Longitudinal Survey of Youth 1979 (CNLSY79). These data track a well-defined population from birth through young adulthood and provide multiple assessments of children's cognitive skills, psychological attributes, and attitudes and expectations about future family and educational outcomes. As of 2010, there were approximately 11,500 children and young adults in the sample. Links to maternal data in the NLSY79 also provide several measures of family background and related characteristics.

Popular methods for estimating heterogeneous treatment effects in the presence of selection use propensity score techniques to model selection and examine variation in the effect of interest across individuals' propensity to receive the treatment, either through reweighting, stratification, or matching techniques (Morgan and Todd 2008; Xie et al. 2012). If the propensity score model can effectively balance the treated and untreated groups on potential confounders, these methods account for the heterogeneity that is systematically related to treatment selection.

For the purposes of this study, treatment refers to childbearing prior to age 20, and our control group consists of female respondents who delayed childbearing until age 21 or older. We model

the propensity of becoming a young mother as a function of variables related to family background, prior academic outcomes, relationship quality with parents and significant others, psychological attributes related to internalizing and externalizing behaviors, as well as attitudes and expectations about fertility and educational outcomes.

Our first analysis examines effect heterogeneity using Xie and colleagues' (2012) stratification-multilevel method. This method entails stratifying individuals into categories based on their propensity score, estimating treatment effects for each stratum, and statistically testing the relationship between propensity stratum and effect size in a multilevel model. As mentioned earlier, a positive relationship indicates positive selection, whereas a negative association indicates negative selection into teen childbearing.

A weakness of propensity-score based methods is that they specify heterogeneity across a composite of variables that may have no clear theoretical interpretation. Our second analysis relies on insights from Morgan and Todd (2008) to test the ability of specific variables of interest to explain the heterogeneity captured by the propensity score composite. Heterogeneity is assessed by employing regression models to estimate the effects of early childbearing on our outcomes of interest under different weighting schemes; we compare the estimated effect when the sample is weighted to represent those most likely to become young mothers to the estimated effect when the sample is weighted to represent those least likely to become young mothers. We seek to explain this overall heterogeneity by adding theoretically motivated interactions into the regression model. Specifically, we focus on the indicators discussed earlier, which include measures the quality of relationships with parents and significant others, parents' financial resources, and women's own cognitive skills and psychological dispositions.

Implications

To gain a more complete understanding of how women's socioeconomic trajectories are shaped by early fertility, we must move beyond assessing the *average* effects of teenage pregnancy. Our research employs two recent methodological innovations to test for heterogeneity following a teenage birth, and also evaluates the importance of social, financial, and psychological resources available to mothers. Answering these questions can better inform social policy to improve the well-being of young mothers and their children. If we can understand how women differentially respond to an early birth, we can better identify those who are most vulnerable to early fertility and learn how others thrive in spite of early motherhood.

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