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Were the mental health benefits of a housing mobility intervention larger for adolescents in higher socioeconomic status families?

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ABSTRACT

Moving to Opportunity (MTO) was a social experiment to test how relocation to lower poverty neighborhoods influences low-income families. Using adolescent data from 4 to 7 year evaluations (aged 12–19, $n=2829$), we applied gender-stratified intent-to-treat and adherence-adjusted linear regression models, to test effect modification of MTO intervention effects on adolescent mental health. Low parental education, welfare receipt, unemployment and never-married status were not significant effect modifiers. Tailoring mobility interventions by these characteristics may not be necessary to alter impact on adolescent mental health. Because parental enrollment in school and teen parent status adversely modified MTO intervention effects on youth mental health, post-move services that increase guidance and supervision of adolescents may help support post-move adjustment.

1. Introduction

Living in areas of concentrated poverty has been linked to an array of harmful outcomes including worse mental and physical health, delinquency, and risky sexual behaviors for adolescents (Kim, 2008; Leventhal and Brooks-Gunn, 2000; Mair et al., 2008; Pickett and Pearl, 2001; Sampson et al., 2002). Although this evidence is mounting, most studies are observational and, therefore, potentially biased due to unaccounted for differences between comparison groups (Oakes, 2004). The Moving to Opportunity study with its strong experimental design has unique potential to inform the literature on neighborhood characteristics and housing policy as causes of health and illness.

The Moving to Opportunity (MTO) for Fair Housing Demonstration Project was a randomized housing mobility experiment designed to understand how relocation from high- to lower-poverty neighborhoods influences families. Families in public housing were randomly allocated an offer of a rental subsidy/housing voucher to rent private apartments in lower-poverty neighborhoods. Their outcomes were compared with control members who remained in public housing. Although MTO treatment predicted improvements in neighborhoods, housing, and safety, as well as better mental health for mothers, it had little impact on employment and earnings of adults (Orr et al., 2003).

Regarding outcomes among youth, previous MTO studies have documented beneficial effects on adolescent girls but null (Kling et al., 2007; Orr et al., 2003; Sanbonmatsu et al., 2011) or harmful (Osypuk et al., 2012a, 2012b) effects in several mental health domains among boys. These striking opposite gender effects of MTO may be better understood in light of other effect modification co-occurring with the gender effect modification. For example, recently researchers found that MTO benefits to girls' psychological distress and behavior problems were concentrated among those in families without recent violent victimization (Osypuk et al., 2012a) or health/developmental vulnerabilities at baseline (Osypuk et al., 2012b). Additionally, the adverse treatment effects for boys for these outcomes were concentrated among those in families with baseline violent victimization or health vulnerabilities. These studies illustrate the crosscutting set of adversities facing youth, and suggest that although MTO intervened to address housing, its effects may depend upon the presence of

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multiple vulnerabilities across other domains of the child, including health, development, and prior trauma.

Identifying subgroups who are likely to benefit most from social interventions may also allow us to target the intervention more effectively. Moreover, if some subgroups are potentially harmed by the intervention, it is critical to identify such subgroups and modify the intervention appropriately. Other investigations have examined heterogeneity in MTO treatment effects by age for academic achievement (Sanbonmatsu et al., 2006) and adolescent outcomes in New York three years after randomization (Leventhal and Brooks-Gunn, 2003). Notably, though MTO generated mental health effects for youth, it had little impact on youth physical health overall. For example, there was some suggestion of adverse effects on asthma and self-rated health for younger adolescents aged 11–15, but effects were null for those aged 16–20 at the interim survey (Fortson and Sanbonmatsu, 2010).

To date, no published studies have examined whether family SES or household structure alter the impact of the MTO experiment on youth mental health, despite observational research documenting a link between family SES and adolescent mental health. Lower family SES and having a single parent are each associated with higher odds of DSM-IV disorders (Kessler et al., 2012), psychiatric symptoms (Barrett and Turner, 2005) and problem behaviors (Hoffmann, 2006; Miech et al., 1999) among adolescents. These processes may be mediated by fewer economic resources, differences in family processes (e.g., family cohesion, perceived support), chronic strains, and traumatic life events that vary by family SES and household structure (Barrett and Turner, 2005). Furthermore, lower family SES correlates with worse adolescent physical health (Goodman, 1999)—which may negatively impact adolescent mental health. Although residential mobility may have benefits, it is also a stressor for children, involving challenges such as breaking or straining existing social ties, forming new relationships, and adapting to new cultural norms (Adam, 2004; Adam and Chase-Lansdale, 2002; Anderson, 2000). Families with fewer resources may already face more stressors to their mental health, making the new challenges associated with relocation more difficult to manage (Simmons et al., 1987). For example, some studies have shown that residential mobility adversely affects school progress only among children whose parents had lower education (Straits, 1987), or for families without two biological parents (Tucker et al., 1998).

Family characteristics may influence actual use of the offered housing voucher, for instance, if lower SES families were less able to use the voucher to find an appropriate apartment to rent. Since there are many steps involved in actually using a rental voucher, more vulnerable families might have less time to navigate a move, or it may have been more difficult for them to comply with program rules. Family characteristics like SES or marital status may also influence the types of neighborhoods families consider and/or select as destinations. For instance, using the Panel Study of Income Dynamics, South and Crowder found that conditional on moving, among blacks, being married and having more years of schooling increased the likelihood of moving into predominantly white census tracts. Among whites, higher SES was also linked to moving to census tracts with greater proportions of whites (South and Crowder, 1998). Indeed, the choice sets that parents construct, from which they will select a destination for a move, may be substantially different by family SES (Bell, 2009). Differences in destination neighborhoods may, in turn, produce differences in adolescent outcomes, especially since families with lower SES already face stressors to their health (Lynch and Kaplan, 2000) and may have fewer resources to adapt to new neighborhoods. Thus, family SES may be an important effect modifier for MTO for a variety of reasons.

The MTO population is among the most disadvantaged in the United States (US); these are primarily minority, very-low income, single-headed families receiving housing support, and are recruited from some of the highest-poverty neighborhoods in the US. Nonetheless, at baseline, there was meaningful variation in baseline socioeconomic and household structure characteristics. More than half of household heads had a high school diploma or greater, about a quarter were employed, about 1 in 7 were in school, and three-fifths had never been married (Orr et al., 2003). The investigation of treatment heterogeneity in the MTO population is valuable given that low-income families are the targets of current policies such as the Housing Choice Vouchers program that assists families in affording rental housing (U.S. Department of Housing and Urban Development, 2012).

1.1. Study aims and hypotheses

No published studies have examined whether baseline family SES or household structure alter the impact of the MTO housing voucher experiment on youth outcomes. Therefore, the aim of this study is to test whether the MTO treatment effect on adolescent mental health differed by family SES or household structure. Even though prior studies have established opposite MTO effects on mental health by gender (Kling et al., 2007; Osypuk et al., 2012a, 2012b), we hypothesize that family vulnerability assessed by socioeconomic status and household structure will reduce benefits (or enhance the harm) of the treatment for both boys and girls. Nonetheless, the size of the treatment effect modification may differ by gender and/or the family characteristics under consideration.

2. Methods

MTO was a $70 million federally-funded housing mobility experiment carried out by the U.S. Department of Housing and Urban Development (1996) in 5 cities: Boston, Baltimore, Chicago, Los Angeles, New York. Eligible low-income families had children under age 18, qualified for rental assistance, and lived in public housing or project-based assisted housing in high poverty neighborhoods. 5301 families volunteered and 4610 families were eligible and randomized (Orr et al., 2003).

2.1. Treatment assignment

Families were randomized to one of three groups in 1994–1998. The "low-poverty-neighborhood" treatment group was offered Section 8 housing vouchers that they could use to subsidize renting an apartment in the private market, with the restriction that these vouchers were redeemable only in neighborhoods where $<10\%$ of households in the census tract were poor. Housing counseling was available to this group to assist in relocation. The low neighborhood poverty restriction expired one year after relocating—after which families in this treatment group could move to another apartment regardless of the poverty level of its census tract and retain their housing voucher. The "regular section 8" treatment group was offered traditional Section 8 housing vouchers with no neighborhood poverty constraints or housing counseling. Finally, the control group was given no further assistance, but could remain in public housing (Goering et al., 1999).

2.2. Assessments

Our data includes surveys completed at baseline (1994–1998) and during the interim follow-up 4–7 years after randomization (2001–2002) among household heads and their children. At