Published in final edited form as:

J Res Adolesc. 2018 June ; 28(2): 456–472. doi:10.1111/jora.12347.

Family Instability and Exposure to Violence in the Early Life Course

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At the midpoint of the twentieth century, most adolescents in the U.S. grew up in homes with both biological parents (Furstenberg, 2007). Today, the majority exit adolescence having spent at least some time in another family structure, often experiencing multiple family structure transitions in the process (Brown, Stykes, & Manning, 2016; Cherlin, 2010; Kennedy & Bumpass, 2008). Such dynamic experiences have been implicated in the diverging trajectories of U.S. youth, as certain family structures—and family structure changes above and beyond any one structure—are negatively associated with many aspects of social, psychological, and academic functioning during adolescence that lay the foundation for adulthood (Cavanagh, Schiller, & Riegle-Crumb, 2007; Fomby & Cherlin, 2007; Fomby & Sennott, 2013; Wu & Thomson, 2001). The connections between aspects of family structure and adolescent outcomes have been attributed to many mechanisms. One commonality across conceptual models relates to the ways family structure (and changes in structure) can shape parents' ability to consistently supervise, control, and engage with their children as they navigate a crucial developmental period characterized by heightened peer orientation, a propensity towards risky behavior, and a still-maturing sense of self-regulation (Cavanagh, 2008; Steinberg, 2008). That mechanism suggests that the risks of dynamic family structures in adolescence may be evident in how adolescents traverse the larger communities in which they live. To be sure, selection processes that shape family structure history (e.g., education, income) also shape the kinds of neighborhoods young people live in and the level of violence they may be exposed to. Still, if changes in parents' own lives disrupt their ability to enact social controls for their children in the home, youth may be exposed to more problematic ecologies outside the home.

In this spirit, this study attempts to connect *family instability*—the term we use here to refer to family structure at specific time points linked to family structure changes across time points (see Cavanagh & Huston, 2006; Fomby & Cherlin, 2007; Osborne & McLanahan, 2007; Wu & Martinson, 1993)—to adolescents' *secondary exposure to violence*. This outcome encompasses adolescents' witnessing of violent events, including seeing others hit, threatened, or murdered (see Brennan, Molnar, & Earls, 2007; Pinchevsky, Fagan, & Wright, 2014; Zimmerman & Messner, 2013). Its absence in the family instability literature is notable. Not only is such exposure bad for adolescents (raising the odds of future victimization, criminality, and mortality) and for society (increasing community disorder,

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crime, and health care and criminal justice costs), it is linked to adult social control practices (Browning, Leventhal, & Brooks-Gunn, 2004) and is most prevalent in communities in which family instability tends to be most pronounced (Cerdá, Tracy, Sánchez, & Galea, 2011; Kirk & Hardy, 2012; Zona & Milan, 2011). Thus, examining whether family instability raises adolescents' secondary exposure to violence across a range of neighborhoods can elucidate the potential long-term risks of family instability, contextualize adolescents in overlapping ecological contexts, and connect literatures on adolescent development, family demography, and community crime. Moreover, exploring these links across segments of the adolescent population who, on average, observe varying amounts of violence, adds a 'person x context' interplay that more effectively determines which adolescents are most in need of intervention. Specifically, demographic factors such as age, gender, and race/ethnicity may facilitate or block the translation of family instability into violence exposure across communities (Zimmerman & Messner, 2013).

Drawing on multilevel longitudinal data from the Project on Human Development in Chicago Neighborhoods (PHDCN) is valuable for exploring these associations for several reasons. This dataset, which tracked Chicago youth of varying ages and backgrounds across a long span of developmental time, provides rich data on family structure histories and exposure to violence and allows local violent crime rates and other community characteristics to be taken into account. The setting of the study is Chicago during the late 1990s and early 2000s; thus, the young people in the sample were growing up in communities marked by high but variable levels of violence and the social disorganization that affected them, their families, and the larger social and institutional systems in which they came of age. As Sampson (2012) argued, the diversity and dynamism across Chicago's neighborhoods represent an enduring feature of social life that both shapes and reflects relationships, behaviors, and perceptions, including those related to the violence that has long been a problem in the U.S. in general and Chicago in particular. Making this context explicit to the study of family instability and adolescents' secondary exposure to violence helps to anchor these associations in space.

Connecting Family Instability to Exposure to Violence

This study links key aspects of the ecology of urban adolescents in the U.S. that have often been disconnected: family and neighborhood (Leventhal, Dupéré, & Shuey, 2014). Such a mesosystem-level perspective recognizes that social contexts do not exist in isolation but can intersect in ways that shape human development (Bronfenbrenner, 1979). Beginning with family, family instability across adolescence is a feature of the home ecology. One dimension of family instability is family structure status. Family structure status at any one time, which captures the composition of parents and their partners in the home, proxies the time and resources—socioemotional and financial—that parents can draw upon and invest in their children as they develop. Commonly studied family structure categories combine parents' union statuses and their biological ties to children, with children residing in families headed by married biological parents, cohabiting biological parents, married stepparents, cohabiting stepparents, and a single parent. A second dimension is family structure change. Family structure change across time, which captures the movement of parents or partners in and out of children's homes, can alter parenting practices, the home environment, and where

families live above and beyond family structure itself. The combination of these factors—which, again, we refer to as family instability—can affect the degree to which the home ecology undermines youth development (Cavanagh & Huston, 2006; McLanahan, 2004).

Turning to neighborhoods, young people's secondary exposure to violence is a feature of the broader ecology. U.S. youth are exposed to violence in their homes, schools, and communities at levels greater than adults (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009; Hashima & Finkelhor, 1999). Although many youth are resilient even when exposed, some undergo lasting physical, mental, and emotional harm. Consequences of such exposure can include post-traumatic stress disorder, elevated blood pressure and cortisol production, aggression, anxiety and depression, and conduct problems (Finkelhor et al., 2009; Gibson, Morris, & Beaver, 2009). Thus, exposure can have implications for development in adolescence but also in later stages of life.

Why might these two aspects of adolescent ecology be connected? Children's secondary exposure to violence reflects something about the neighborhoods in which they live, the schools they attend, the kinds of monitoring and supervision their parents and other kin provide as well as family dynamics in their home. Each of these factors, in turn, is tied to family instability.

Beginning with the family structure component of family instability, young people residing in married two-biological parent families during middle childhood and adolescence may be less exposed to secondary violence than all other youth. This advantage reflects, in part, the better financial position of married parent families that often translates into neighborhoods and schools with lower levels of violence (Cavanagh & Fomby, 2012; McLanahan & Percheski, 2008). Young people in such families also benefit from having parents in the home who can partner in ways that provide the monitoring, engagement, and social control needed to protect adolescents from risky situations (Coleman, 1988; Stattin & Kerr, 2000). Still, not all two-parent family structures provide the same kind of protection. For example, the more precarious economic position of cohabiting families (regardless of biological ties with children) combined with lower levels of parent-child closeness and parental investment among stepparents (Ganong & Coleman, 1997; Sweeney, 2010; Thomson, Mosley, Hanson, & McLanahan, 2001), suggests that stepparent families might be less able to protect young people from negative outside forces. For single mothers, the absence of a second parent might further erode these protections (McLanahan & Sandefur, 1994). Single parents are also more likely to raise children in neighborhoods marked by higher levels of violence (Sampson, Raudenbush, & Earls, 1997), further increasing their risk of exposure.

Turning to the family structure change component of family instability, the change in family structure that comes when a parent or parent's partner enters or exits the home can set in motion inconsistent parenting behaviors, economic insecurity, changes in a resident parent's work schedule, feelings of loss, and/or adjustment to new household members (Amato, 2000). These changes, in turn, can introduce uncertainty into young people's lives, affecting how close they feel to their parents and how much freedom they have in and out of the home, especially when accompanied by residential moves and changes in children's friendship groups (Conger, Ge, Elder, Lorenz, & Simons 1994; Fomby & Sennott, 2013;

South, Crowder, & Trent, 1998). Because parent-child closeness, adolescent disclosure, and parental knowledge of the neighborhood, school, and peer groups help to determine the effectiveness of their social control and monitoring activities at a risky period of the life course (Baumrind, 1991; Dubow, Huesmann, Boxer, & Smith, 2016; Hair, Moore, Garrett, Ling, & Cleveland, 2008; Kerr, Stattin, & Burk, 2010; Smetana, 2008), family structure changes can increase opportunities for young people to be exposed to violence.

The first aim of this study, therefore, is to test the hypothesis that family structure and family structure changes are associated with secondary exposure to violence. In this hypothesis, family structure represents the baseline family ecology around the cusp of adolescence, and subsequent family structure changes between waves capture disruptions into and through adolescence in this baseline ecology. Overall, we hypothesize that residing in a household other than married, two biological parent family at Wave 1 and experiencing family structure change across waves will be associated with greater exposure to violence later on at Wave 3.

Selection and the Links between Family Instability and Exposure to Violence

As compelling as this conceptual model is, it—like other family-focused models of child and adolescent development—is bedeviled by issues of selection and endogeneity (Biblarz & Raftery, 1999; Fomby & Cherlin, 2007; Hao & Xie, 2002; Lee & McLanahan, 2015; Wu, 1996). Although no social group is immune to family instability, important social structural and individual differences in the likelihood of experiencing family instability exist. These differences, in turn, are also related to the neighborhoods in which families live and how parents *parent* their children. Given these complex interrelationships, observed links among family instability and adolescent secondary exposure to violence that do not account for underlying selection processes can overestimate the family instability effect (Fomby & Cherlin, 2007).

The only way to determine the causal significance of family instability is by randomly assigning families to different family structure trajectories—a design that is implausible for practical and ethical reasons. Short of that, researchers have used different statistical methods (e.g., fixed effects, random effects, marginal structural models; Lee & McLanahan, 2015) and included different indicators (e.g., mother's education level before the child's birth; Fomby & Cherlin, 2007) that tap observable factors associated with selection processes. This study takes into account various conditions and characteristics of youths' family and neighborhood contexts as a way of isolating, however imperfectly, the degree to which the family structure and family structure change are linked with young people's secondary exposure to violence. These conditions and characteristics include parental age at birth, educational attainment, residential stability, and employment in the family context and the official violent crime rates, level of concentrated disadvantage, immigrant concentration, and residential mobility and turnover in the neighborhood context.

Variations in the Links between Family Instability and Exposure to Violence

An important feature of the ecological perspective is that different adolescents can react to the same ecological (including mesosystem) process in different ways (Bronfenbrenner & Morris, 1998; Lerner, 1991). Such person x context interactions bridge developmental science and demography when the person is conceptualized in terms of demographic attributes that locate adolescents in the broader social structure. In other words, age, gender, and race/ethnicity say something about adolescents but also their social positions in a neighborhood. Each factor is related to both family instability and secondary exposure to violence, but we look at them here as moderators of their association.

First, age could moderate the link between family instability and secondary exposure to violence. As young people move into and through adolescence, their social world shifts from the family into public life. As such, they increasingly spend time outside their parents' purview (Côté, 2009; Entwisle & Alexander, 1993; Larson, 2001). Thus, their emerging independent lives change the way parents monitor and supervise them and offer them more opportunities to engage in behaviors and relationships that expose them to violence (Collins, 1984; Kerr, Stattin, & Trost, 1999; Patterson & Stouthamer-Loeber, 1984). A 12 year old and 18 year old, for example, are 'watched' by parents and other adults in different ways and are also in settings that can produce different kinds of behaviors. At the same time, a 12 year old and 18 year old may disclose different kinds of information to parents about their behaviors. These normative challenges to parents' abilities to know, monitor, and control adolescents could be magnified by family instability (Cavanagh, 2008), such that we expect the link between family instability and secondary exposure to violence will increase with age.

Second, gender could also moderate this link because of how gender shapes the ways parents and other adults monitor young people (e.g., Clampet-Lundquist, Edin, Kling, & Duncan, 2011; Griffin, Botvin, Scheier, Diaz, & Miller, 2000), the kinds of spaces in which boys and girls spend time (e.g., Eccles, Barber, Stone, & Hunt, 2003), the behaviors in which they engage (e.g., Byrnes, Miller, & Schafer, 1999), and the kinds of threats they are exposed to (e.g., Popkin, Leventhal, & Weismann, 2010). In general, boys are given more autonomy and freedom than girls, and their parents have broader conceptions of acceptable behavior for them. As a consequence, boys tend have more opportunities to be exposed to violent acts like seeing someone hit, attacked or shot at than girls (Selner-O'Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998). Girls, of course, are not immune from violence, but the violence they observe and experience is likely different and more sexual in nature, including sexual harassment, intimate partner violence, and sexual victimization (Chan Tack & Small, 2017; Popkin, et al., 2010). Moreover, evidence suggests that the negative implications of family instability may be more pronounced for boys than girls, including in adolescence (Cavanagh, Crissey, & Raley, 2006; Cooper, Osborne, Beck, & McLanahan, 2009). Thus, even though girls tend to be more vulnerable to the effects of secondary exposure to violence compared with boys (Zahn-Waxler, Shirtcliff, & Marceau, 2008; Zona & Milan, 2011), family instability may lead to higher secondary exposure to violence for boys.

Third, links between family instability and secondary exposure to violence could vary by race/ethnicity. Evidence suggests that the developmental effects of family instability are typically greater for White youth than for African-American and other youth across an array of domains, in part because family instability is more normative in many non-White groups, which have adapted strong social customs and kin networks to buffer against it (Fomby & Cherlin, 2007; Fomby, Mollborn, & Sennott, 2010; Sarkisian & Gerstel, 2004; Wu & Martinson, 1993; Wu & Thomson, 2001). Exposure to violence, we argue, could be one exception to this general rule. By virtue of persistent racial segregation and discrimination in neighborhoods and schools, African-American and Latino/a youth are more likely to navigate unsafe spaces in their everyday lives than Whites (Peterson & Krivo, 2010). Their opportunity structure for exposure to violence is simply greater, even among more socioeconomically advantaged families (Hipp, 2007; Martin, Gordon, & Kupersmidt, 1995; Peguero, Popp, & Koo, 2015). As a result, if family instability disrupts the kinds of parenting practices and household organization that keep young people from potentially risky situations outside the home, it may be more likely to expose young people of color to secondary violence.

The second aim of this study, therefore, is to test the hypotheses that the association between family instability and secondary exposure to violence during and after the transition into adolescence will be moderated by age, gender, and race/ethnicity, net of neighborhood crime rates and other factors. Specifically, we hypothesize that the associations between family instability and secondary exposure to violence will be stronger for older youth, for boys, and for African-American and Latino/a youth, net of important selection factors. Unpacking the associations among family instability and young people's secondary exposure to violence with respect to individual characteristics can move us beyond a list of correlates of violence to a more systematic way of understanding how family context—anchored in place—shapes young people's development outside the home.

Method

Data

The PHDCN is a multilevel, longitudinal study examining the family, school, and neighborhood contexts of youth development. The design of the PHDCN consisted of two major components: an analysis of Chicago's neighborhoods and the Longitudinal Cohort Study. Our data came primarily from the PHDCN Longitudinal Cohort Study, a multilevel, longitudinal survey of several cohorts of children and their primary caregivers based on the sampling design developed in the PHDCN's analysis of Chicago neighborhoods. The initial Community Survey in 1994 and 1995 measured neighborhood characteristics with a sampling scheme that first combined the 847 census tracts in Chicago into 343 neighborhood clusters that were geographically contiguous and homogenous in terms of racial/ethnic and socioeconomic composition. The Longitudinal Cohort Study then collected information about children and their primary caregivers who resided in 80 of the 343 neighborhood clusters from the Community Survey. Thus, the Longitudinal Cohort Study respondents were independent of the Community Survey but resided in the same neighborhoods. Households with children within six months of birth, ages 3, 6, 9, 12, 15,

and 18 were then randomly selected within clusters, resulting in a sample of 6,228 participants across 21 strata of racial/ethnic groups and socioeconomic levels. During three waves over a period of seven years (1994–1997–1997–1999–2000–2001), researchers studied these developing youth and their changing social contexts. The neighborhood data for this study come from linked data from law enforcement and the 1990 Census provided information on other neighborhood characteristics.

To capture children's transition into and through adolescence, the analytical sample ($n = 2,201$) included respondents from Cohorts 6, 9, and 12 across all three waves of the Longitudinal Cohort Study whose primary caregivers at Wave 1 were their biological mothers. Those children were ages 6, 9, and 12 at Wave 1 and 12, 15, and 18 by Wave 3. They were 50% female, 15% White, 50% Latino/a, 32% African-American, and 3% other race/ethnicities (see Table 1). Primary caregivers were, on average, 35 years old at Wave 1.

These analyses exclude the two youngest cohorts (age 0 at Wave 1, age 6 at Wave 3; age 3 at Wave 1, age 9 at Wave 3) and two oldest cohorts (age 15 at Wave 1, age 21 at Wave 3; age 18 at Wave 1, age 24 at Wave 3). We did so because the opportunity structure for exposure to violence among 6 and 9 year olds, on one hand, and 21 and 24 year olds, on the other, would be quite different than the opportunity structure for exposure to violence for 12, 15, and 18 year olds at Wave 3. Even controlling for age, the associations between family instability and secondary exposure to violence might mean very different things for those on the tail ends of the age distribution. At the same time, we sought to maximize consistency in the ways data were collected across cohorts. Unlike the younger cohorts, young people in the oldest (Cohort 18) cohort provided all the family structure information across all waves and those in Cohort 15 provided family structure information at Waves 2 and 3, making their reports different from maternal reports of family structure transitions provided for younger cohorts.

Measures

Secondary exposure to violence—At Wave 3, nine items measured whether or not youth had seen the following types of violence in the past year: seeing someone chased, hit, attacked, shot, shot at, killed, or threatened, hearing a gun shot, and seeing an accident. One approach to measuring exposure to violence would be to sum up the number of violent acts seen in the past year. As Kindlon and colleagues (1996) point out, such a scale would imply that all items are weighted equally, despite clear qualitative differences between them. For example, hearing a gun shot in the distance almost certainly has different psychological implications than directly observing someone getting shot. In order to address this problem, we drew on item response theory (IRT) to conceptualize youth's secondary exposure to violence as a latent continuous factor. Specifically, a 2-parameter logistic model, further described below in the Plan of Analyses section, incorporated the dichotomous responses to seeing each of the above types of violence in the past year (1 = yes; 0 = no) into a scale of exposure to violence.

Family structure and family structure change—At Wave 1, biological mothers who were primary caregivers reported their marital status, whether they were living with a

romantic partner, and whether that partner was the child's biological father. Those maternal reports were combined into a categorical variable that measured family structure at Wave 1 (i.e., mother's union status) as: married to the child's biological father, cohabiting with the child's biological father, married to a new partner in a stepfamily, cohabiting with a new partner in a stepfamily, or single (i.e., no co-residential partner). We then created two dummy variables that reflected changes in maternal reports of union status over time. The one family structure change measure indicated a single union status change across the observation window, either between Waves 1 and 2 or between Waves 2 and 3 (1 = one transition; 0 = no transition) (e.g., single at Wave 1, cohabiting with a new partner at Waves 2 and 3). The two family structure change measure (1 = two transitions; 0 = no transition) indicated a union change at each wave (e.g., married to the child's father at W1, single at W2, and cohabiting with a new partner at W3). When measuring family structure at Wave 1, we collapsed married step-parent and cohabiting step-parents into one category due to small cell sizes. Still, if a mother transitioned from cohabitation with a step-parent to marriage with a step-parent across waves, her child would still be coded as undergoing one family structure change.

These indicators only captured change in status at each interview, not the kinds of transitions (e.g., exits or entrances) or the total number of transitions between waves 1 and 3. Because no retrospective questions about union status between waves is asked, we are likely underestimating the number of transitions young people experience. For example, a child may live in a single parent household during the interviews but her mother might have had short term unions between waves that are not captured with these measures. Still, this common operationalization of these dimensions of family instability allows for the observed effects of family structure change to be non-linear (Lee & McLanahan, 2015).

Child, family, and neighborhood covariates—In order to account for the possibility of other factors confounding associations between family instability and secondary exposure to violence, covariates were measured at multiple levels. First, a set of child control variables were measured at Wave 1. Age was represented by cohort (Cohorts 6, 9, and 12), gender was a dichotomous variable (1 = female, 0 = male), and race/ethnicity was represented by four categories (White, Latino/a, African-American, and other). Each characteristic was also treated as a potential moderator in the link between family instability and secondary exposure to violence in our multiple group models.

Second, a set of family and household controls included a dichotomous indicator of whether the mother was employed at Wave 1 and a categorical measure of the mother's level of education at Wave 1 (less than a high school degree, high school, or more than high school). Residential stability was a dichotomous indicator of whether the family had remained in the same residence for five years or more. Maternal age was measured in years at Wave 1 and divided by 10 to achieve lower variance. We included a dichotomous variable that tapped whether the mother reported any prior co-residential romantic relationships with partners other than the child's biological father after the birth of the focal child. This was asked only at Wave 1 and provides a proxy for early partner change. We also included a PHDCN-composite measure that captured the mother's household income, educational attainment, and occupational prestige at Wave 2. To ensure that youth's secondary exposure to violence

was not simply due to violence associated with mothers' romantic partners, a binary variable measured any intimate partner violence (across 13 items, e.g., being slapped, raped, beaten up) between the primary caregiver and her partner at Wave 2.

Finally, neighborhood-level conditions were measured by three PHDCN-generated factor regression scores with data at the census tract level from the 1990 Census (see Sampson et al., 1997 for the construction of these factors). First, the residential mobility and turnover composite (not to be confused with the family residential stability covariate) captured both the percentage of residents living in the same house in 1985 and 1990 and the percentage of housing occupied by owners in 1990. Second, immigrant population concentration was comprised of the percentage of Latino/a and foreign-born residents in 1990. Third, concentrated disadvantage was a composite measure that captured aspects of the neighborhood associated with concentrated poverty: percentage of individuals living below the poverty line, individuals receiving public assistance, female-headed families, unemployment, density of children, and the percentage of African-American residents (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007; Sampson et al., 1997). We also examined the neighborhood's prior violent crime rate, which was constructed from incident-based records of the Chicago Police Department on murder, robbery, rape, and aggravated assault in 1993 (Sampson et al., 2005).

Table 1 displays descriptive statistics on key analytic variables for the overall study sample and by cohort, gender, and race/ethnicity.

Plan of Analyses

The first stage of our analysis involved fitting a 2-parameter logistic (2PL) model to nine dichotomous items measuring youth's secondary exposure to violence in the past year. Within an IRT framework, we assumed that youths' secondary exposure to violence was best conceptualized as a continuous latent variable, where individual responses about each violent act (e.g., heard a gun, saw someone threatened) were governed by a person's underlying risk of exposure (Raudenbush, Johnson, & Sampson, 2003; Sampson, Morenoff, & Raudenbush, 2005). Thus, differences in reports between people were not random but reflected differences in this underlying risk (Kindlon, et al., 1996). The 2PL model estimated a parameter describing the strength of the association between each item and the latent factor, as well as a difficulty or severity parameter that describes how much of the latent construct (in this case, propensity to be exposed to violence) an individual must possess in order to be at least 50% likely to endorse that item (Wirth & Edwards, 2007). To put it differently, youth with a relatively low propensity of being exposed to violence may have been likely to say that they heard a gunshot in the past year. This same youth would likely not report seeing someone stabbed in the past year because that act would be so much more severe. Only youth with higher propensities to be exposed to violence would likely report seeing someone shot. In this way, the 2PL model offered a more sophisticated measure of secondary exposure to violence that accounted for the differing levels of severity across the nine exposure to violence items.

Next, a series of multivariate models that predicted youth's secondary exposure to violence. Model 1 included the focal association between family structure, family structure changes,

and secondary exposure to violence, net of individual covariates. Model 2 then added family-level covariates. Model 3 added neighborhood covariates. Because PHDCN respondents were nested in neighborhoods, we accounted for the survey design in several ways. In Models 1 and 2, which did not include the neighborhood covariates, we used the TYPE=COMPLEX and CLUSTER commands with the neighborhood ID to adjust standard errors for neighborhood clustering. In Model 3, we switched to the TYPE=TWOLEVEL command and specified individual respondents and families at the “within” level and neighborhood characteristics at the “between” level in order to explicitly model the neighborhood-level covariates in addition to adjusting the standard errors.

In the final phase of analysis, multiple group modeling tested whether the association between family instability and secondary exposure to violence varied by youth’s age cohort, gender, and race/ethnicity. For example, if there was a significant link between family structure and family structure change and secondary exposure to violence, was this association only apparent among certain subgroups? These models included all covariates included in Model 3. The multiple group models by race/ethnicity focused only on Latino/a, African-American, and White youth because there were too few adolescents who identified as an “other” racial/ethnic identity to comprise their own group. For each moderator, we estimated an unconstrained model in which the family structure change and family structure coefficients were allowed to vary across the sociodemographic variable of interest (e.g., boys versus girls). Next, a series of models constrained the coefficients for each family structure change and family structure dummy variable to be equal across groups. All models were estimated using maximum likelihood estimator with robust standard errors (the MLR estimator option in Mplus). When using this estimator option, we compared the fit of the unconstrained model with the fit of each constrained model using log likelihood ratios (Muthén, 1998–2004). These log likelihood ratio tests assessed whether the constrained models led to significant decline in model fit, indicating significant differences in the focal parameters by age, gender, or race/ethnicity. In addition, post-hoc Wald chi-square tests examined whether specific coefficients differed significantly across groups.

Multivariate analyses were conducted in MPlus 7.0 (Muthén & Muthén, 1998–2010), which handles missing data with full-information maximum likelihood (FIML) procedures that fit the covariance structure model directly to the observed raw data for each respondent. Under missing completely at random and missing at random missing data conditions, FIML provides the most unbiased and efficient estimates compared to other common techniques to account for missing data (Enders & Bandalos, 2001).

Results

Connecting Family Instability with Secondary Exposure to Violence

The first aim of this study was to test the hypothesis that family instability was associated with youths’ secondary exposure to violence. The first column of Table 2 displays the unstandardized family structure and family structure change coefficients estimating secondary exposure to violence for the full analytical sample, net of child characteristics. These coefficients can be interpreted like ordinary least squares regression coefficients. Because exposure to violence is a latent continuous variable, however, its scale does not

have substantive meaning. Instead, we interpret these coefficients based on their directionality (i.e., positive versus negative associations with youth's exposure to violence), magnitude, and statistical significance.

In Model 1, young people residing in single parent families at Wave 1, net of subsequent family structure change, were exposed to significantly more violence. In addition, those who reported family structure changes across both waves experienced significantly greater exposure to violence, net of other factors. Experiencing family structure change across one wave was also associated with greater exposure to violence, although this association failed to reach conventional levels of significance. As was seen in the descriptive statistics, older, non-White, and male adolescents saw more violence. Model 2 added family-level covariates. The family instability associations (residing in a single parent family and experiencing two family structure changes) with secondary exposure to violence remained statistically significant once family-level characteristics were taken into account. The coefficients for the child-level covariates remained largely unchanged with the addition of family covariates, except that youth in the "other" racial category saw only marginally more violence compared to White adolescents.

Lastly, Model 3 added a multilevel framework with neighborhood-level covariates. Living in a single-parent family at Wave 1 continued to be associated with seeing more violence. Similarly, the association between two family structure changes and secondary exposure to violence remained statistically significant. Youth who experienced family structure changes across both waves were exposed to more violence than those with no family structure change. Boys, African-Americans, and older adolescents were exposed to more violence net of all other child, family, and neighborhood covariates. Latino/as were no longer statistically different from Whites once neighborhood-level covariates were taken into account.

Variation by Gender, Race/Ethnicity, and Age

The second aim of this study was to test the hypotheses that the association between family instability and secondary exposure to violence would be stronger for older youth, boys, and African-American and Latinos, respectively. Table 3 shows unstandardized coefficients from multiple group analyses of the full, multilevel models predicting secondary exposure to violence by age/cohort, gender, and race/ethnicity. For each comparison (Cohort 6 versus Cohort 9 versus Cohort 12, boys versus girls, and Latino/as versus African-Americans), log likelihood ratio tests revealed that constrained models fit the data significantly worse than the unconstrained models ($p < 0.001$). These tests suggest that the models estimating secondary exposure to violence, therefore, did significantly differ across age cohort, gender, and race/ethnicity, respectively.

Columns 1–3 of Table 3 display the results for the multiple group models by age/cohort. Previous models suggested that, in general, older youth saw more violence than their younger counterparts. The multiple group models, however, revealed that associations between dimensions of family instability and secondary exposure to violence did not vary in statistically significant ways across different age groups. Furthermore, none of the family structure or family structure change coefficients were significant in the multiple group model, which may be due to the reduction in power when looking at each group separately.

According to Wald tests, the coefficients for family structure and family structure change did not significantly differ across age groups.

Turning to the multiple group models by gender, columns 4 and 5 in Table 3 show that for both boys and girls, living with a single parent at Wave 1 was associated with greater exposure to violence, as was the case in the overall sample. This association, however, did not vary significantly by gender according to Wald tests ($\chi^2 = 0.446, p = 0.504$). These models also revealed that the previously observed association for family structure change was largely driven by boys. In other words, experiencing one or two family structure changes compared to no change was significantly associated with greater secondary exposure to violence for boys but not girls. Wald tests showed that the coefficients for one family structure change ($\chi^2 = 5.191, p = 0.023$), but not two family structure changes ($\chi^2 = 2.709, p = 0.100$), were significantly different for boys and girls.

Lastly, columns 6–8 of Table 3 display the unstandardized coefficients for the multiple group models by race/ethnicity. Because there were too few adolescents reporting “other” race/ethnicity, we focus on comparisons between Latinos/a, African-American, and White youth. Still, the results for Whites should be interpreted with caution. Because White adolescents witnessed so much less violence than other racial groups, the White-only subsample did not have enough variation in exposure to violence to generate reliable estimates. For example, no White adolescents saw someone killed in the past year, compared to about 2% of Latino/as and 3% of African-American adolescents. White adolescents were also far less likely to hear a gun shot or see someone attacked compared with Latino/a or African-American adolescents. Due to the imprecision of the estimates for Whites, post-hoc log likelihood ratio and Wald tests focused on the differences between Latinos/as and African-American youth.

Some differences between African-Americans and Latinos/as in the associations between family structure at baseline and exposure to violence were detected. For African-Americans, living with step-parents was marginally associated with greater exposure to violence. For Latinos/as, this association was the opposite, although it was not statistically significant. Still, these coefficients significantly differed between African-Americans and Latinos/as ($\chi^2 = 5.413, p = 0.020$). In addition, living with a single parent at Wave 1 was significantly associated with greater exposure to violence for African-Americans, but only marginally so for Latinos/as; these coefficients marginally differed from one another according to Wald tests ($\chi^2 = 3.131, p = 0.077$). Still, this finding suggests that Black youth might be driving the single parent effect observed in the full sample. Associations between indicators of family structure change and exposure to violence by race were modest. Specifically, experiencing one family structure change was marginally associated with seeing more violence among Latino/a youth whereas two family structure changes was marginally associated with seeing more violence for African-Americans. Based on Wald tests, these estimates were not significantly different from each other.

Discussion

Secondary exposure to violence was common among adolescents living in Chicago in the 1990s and early 2000s—and, as recent headlines show, it is today. Half of the PHDCN analytical sample witnessed less severe types of violence (saw someone hit, heard a gun) and non-trivial numbers of youth were exposed to extreme violence (saw someone shot, saw someone killed) in the past year. Still, secondary exposure to violence varied in important ways by age, gender, and race/ethnicity and across family contexts. This study explored the ways these varied dimensions of social life came together to shape a key influence on youths' social psychological development and health. Two general themes emerged.

First, the association between family instability and greater secondary exposure to violence among young people illustrates the interplay between youths' family and neighborhood ecologies. Compared to youth who experienced no changes in family structure during the survey window, youth who experienced one or two changes witnessed more violence at Wave 3, associations that reached conventional levels of statistical significance for two family structure changes but only marginal significance levels for one such change. We had hypothesized that such changes could translate into stress and distraction in parents' lives, making them less able to parent in ways that limit young people's exposure to violence (e.g., Osborne & McLanahan, 2007). Family structure changes could also play a role in the degree to which young people disclose risk to parents as well as how they spend their time and with whom (Dubow et al., 2016; Smetana, 2008). Together, these shifts in parent and youth behavior and the parent-youth relationship during adolescence could contribute to young people's exposure to violence.

Worth stressing is that the measurement of family structure change likely undercounted the amount of change occurring. We only identified family structure changes across distinct data collection windows and could have missed multiple changes within any one window. For example, we could not distinguish a change that occurred when a respondent's mother was cohabiting with a partner who was not the youth's biological father at Wave 2 and then cohabiting with a new partner at Wave 3. Our indicator would measure no change but possibly miss a partner exit, a spell of single parenthood, and the entrance of a new partner (3 changes). Still, these indicators provided insight into the dynamic family experiences of children transitioning into adolescence in Chicago, and gave a sense of how such experiences could be linked with young people's secondary exposure to violence.

Living in a single parent family was also associated with witnessing significantly more acts of violence relative to living in a married biological parent family, net of individual, family, and neighborhood characteristics. This finding suggests that a second parent in the home may provide additional supervision or adult control practices that limit young people's unstructured time in ways that translates into lower secondary exposure to violent acts. At the same time, factors that increase the likelihood that a young person lives in a two-parent family might also lower their exposure to violence.

Still, the observed associations between dimensions of family instability and children's secondary exposure to violence persisted despite an extensive set of individual, family, and

neighborhood level controls. Taken together, these findings suggest that family instability is likely to play a role in youths' secondary exposure to violence. A next step in this line of research is to better understand the mechanisms that link dimensions of family instability to secondary exposure to violence. We argued that that parenting practices, including monitoring and supervision, as well as changes in parent-child closeness and disclosure might underlie these observed associations. Recent qualitative interviews with elementary age children in Chicago have highlighted the ways that neighborhood violence can shape how young people think about friendships and seek out specific kinds of friends in an effort to ensure both physical safety and social status (Chan Tack & Small, 2017). Exploring changes within the household as well as changes in young people's friendship groups can broaden the way we think about risk and support young people undergoing family instability in neighborhoods marked by violence.

Second, these findings inform understanding of the ways characteristics like age, gender, and race/ethnicity pattern young people's exposure to violence. Contrary to expectations, we did not find evidence of significant variation in the association between dimensions of family instability and secondary exposure to violence by age. Although older youth were more likely to witness violence in general, the link between dimensions of family instability and secondary exposure to violence was not more or less pronounced for any age group.

Similarly, we did not find evidence of significant variation by race/ethnicity. Although model fit improved with the multiple group models, no significant differences in the association between dimensions of family instability and secondary exposure to violence by race/ethnicity was evident. White youth estimates were unreliable due to their lower rates of exposure to violence, and the family structure change coefficients did not differ significantly between Black and Latino/a adolescents. Still, there is some evidence that African-Americans may be driving the observed associations between family instability and exposure to violence. Such a pattern is noteworthy. Across outcomes (e.g., early sexual debut, non-marital births, externalizing problem behaviors, marijuana use) and samples (e.g., NLSY79, CNLSY, Add Health), the deleterious effects associated with family structure transitions has been concentrated among White children and adolescents but not for African American children and adolescents (Cavanagh, 2008; Fomby & Cherlin, 2007; Fomby, et al., 2010; Wu & Martinson, 1993; Wu & Thomson, 2001). It is possible that exposure to violence might operate differently. Again, the findings here are modest but do suggest that future research should explore outcomes related to violence to better understand the conditions under which family instability may matter for adolescent development.

Dimensions of family instability did operate different for boys and girls. Living in a single parent family was associated with a greater likelihood that both boys and girls observed violence, with no difference by gender. Still, family structure change was associated with significantly higher exposure to violence for boys but not girls. Not only did boys witness more violence than girls, family structure change translated into greater exposure to violence for boys but not girls. These findings provide additional evidence of boys' elevated vulnerability to family structure change in terms of social behavior (see Cavanagh & Huston, 2008; Cavanagh, Crissey, & Raley, 2008; Cooper et al., 2011). Adolescent girls, on the other hand, were exposed to significantly less violence overall and such exposure was not shaped

by family instability. Still, as mentioned above, girls may be more likely to be exposed to types of violence not captured in our measure, like sexual harassment.

One of the limitations of this study is that we did not present a detailed picture of youth's exposure to violence, including where it occurs. PHDCN data on where youth witnessed such violence were limited to the last occurrence and had a fair amount of missingness. Importantly, we did include a control variable for intimate partner violence between mothers and their romantic partners. Although some exposure to violence may have occurred in youth's homes, we attempted to preclude any violence that would be dependent on family structure or specific to family structure changes. Future research should aim to provide more detail about the locations where youth witness violence, differentiating between their neighborhoods, homes, and schools. Another limitation is that we presented an overview of the link between family instability and secondary exposure to violence but did not address the mechanisms that explain this link. Family context, neighborhood context, and young people's developmental stage likely all come together to shape what their home environments are like, how much time they spend in their neighborhoods, and whom they interact with. A more careful consideration of family relationships, such as parental monitoring, quality of the parent-child relationship, children's unstructured time use—and how those relationships might change in conjunction with family structure change—can give insights into the ways family structure and family structure change are linked with young people's secondary exposure to violence.

Moreover, additional neighborhood characteristics could enrich this research, where we examine negative attributes like crime and poverty levels but also the collective efficacy embedded in neighborhoods that can reduce the chances that violence occurs in neighborhoods as well as buffer disruptions in parenting that might expose children to violence. Here, we controlled for important dimensions of the neighborhood in which children live but more work can be done.

Still, this research combines insights from family demography into the adolescent crime and delinquency literature to consider how family instability shapes young people's secondary exposure to violence in a time and place marked by high but variable rates of violence. These findings suggest that family instability matters for young people's greater exposure to violence in Chicago. Exploring these links across key demographic groups reveal interesting insights. First, family instability effects were stronger for boys and to some extent African-Americans, groups at higher risk of observing violence to begin with. Additionally, living in a single parent family appears to be associated with the risk of secondary exposure to violence among all youth in this PHDCN sample. For these young people, family instability (or living with a single parent) may facilitate an extant risk.

Acknowledgments

The authors acknowledge the support of grants from the National Institute of Justice (2014-IJ-CV-0025) to the first and fourth authors and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24 HD042849) to the Population Research Center at the University of Texas at Austin. Opinions reflect those of the authors and not necessarily the opinions of the granting agencies.

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Table 1

Descriptive Statistics for Full Sample, by Gender, Race/Ethnicity, and Age Cohort

	Frequency (%) or Mean (Standard Deviation)								
	Full sample	By Age/Cohort			By Gender		By Race/Ethnicity		
		Cohort 6	Cohort 9	Cohort 12	Boys	Girls	Latinos/as	African-Americans	White
Exposure to Violence at Wave 3									
Saw someone chased	35.8	28.6	36.9	44.9	40.4	31.3	34.7	44.1	23.6
Saw someone hit	51.6	39.1	52.9	67.8	55.7	47.6	49.2	59.4	42.8
Saw someone attacked	13.3	10.1	11.4	19.7	16.9	9.7	11.0	21.4	4.0
Saw someone shot	5.5	3.5	5.2	8.7	7.3	3.8	5.2	7.8	2.4
Saw someone shot at	8.4	4.2	7.8	15.1	9.6	7.3	7.5	12.9	2.8
Heard a gun	49.2	38.7	50.6	62.4	51.8	46.7	50.3	63.1	19.8
Saw an accident	19.8	19.1	19.1	21.4	20.4	19.1	17.2	25.4	13.7
Saw someone killed	1.9	2.3	1.4	1.7	2.1	1.6	1.5	3.3	0.0
Saw someone threatened	19.3	15.8	17.8	25.8	22.3	16.4	17.2	24.7	15.3
Family Structure at Wave 1									
Married biological parents	52.0	52.4	53.5	49.9	51.9	52.1	63.9	22.6	74.0
Cohabiting biological parents	6.2	8.2	6.5	3.4	6.3	6.2	9.2	3.8	2.1
Step parents	11.1	8.4	10.8	14.7	11.9	10.3	8.4	16.6	8.3
Single parent	30.7	31.0	29.1	32.0	29.9	31.4	18.5	57.0	15.6
Family Structure Changes									
No family structure changes	74.0	73.5	73.5	75.1	74.4	73.6	76.6	65.8	82.7
One changes	20.0	19.9	20.7	19.5	19.6	20.5	18.0	25.6	15.1
Two changes	6.0	6.6	5.8	5.4	6.0	5.9	5.4	8.6	2.2
Individual-Level Covariates									
Child race/ethnicity									
Latino/a	49.6	49.8	50.2	48.9	48.5	50.7	100.0	0.0	0.0
Child race/ethnicity									
African-American	31.9	30.9	31.7	33.5	31.8	32.1	0.0	100.0	0.0
White	14.9	15.5	14.4	14.5	15.2	14.6	0.0	0.0	100.0

	Frequency (%) or Mean (Standard Deviation)									
	Full sample	By Age/Cohort			By Gender		By Race/Ethnicity			
		Cohort 6	Cohort 9	Cohort 12	Boys	Girls	Latinos/as	African-Americans	White	
Other race/ethnicity	3.6	3.8	3.7	3.1	4.5	2.6	0.0	0.0	0.0	
Child gender										
Male	50.1	49.6	52.4	48.4	100.0	0.0	49.0	49.9	51.0	
Female	49.9	50.4	47.6	51.6	0.0	100.0	51.0	50.1	49.0	
Child age cohort										
Cohort 6	38.4	100.0	0.0	0.0	38.0	38.8	38.5	37.2	40.1	
Cohort 9	31.8	0.0	100.0	0.0	33.3	30.4	32.2	31.6	30.9	
Cohort 12	29.8	0.0	0.0	100.0	28.7	30.8	29.3	31.2	29.1	
Family-Level Covariates										
Household SES at Wave 2 (mean)	-0.3 (1.4)	-0.3 (1.4)	-0.2 (1.4)	-0.3 (1.4)	-0.3 (1.4)	-0.3 (1.4)	-0.8 (1.2)	-0.2 (1.2)	1.0 (1.4)	
Age of primary caregiver /10 (mean)	3.5 (0.6)	3.2 (0.6)	3.5 (0.6)	3.8 (0.6)	3.5 (0.6)	3.5 (0.6)	3.5 (0.6)	3.4 (0.6)	3.6 (0.6)	
Any pre-W1 family instability	21.6	18.3	21.9	25.0	20.4	22.7	18.2	27.6	20.6	
Any IPV at W2	9.7	9.1	11.1	9.0	10.9	8.5	9.2	13.5	4.0	
Mother employed at W1	54.0	50.4	54.1	58.7	56.8	51.2	49.0	57.1	64.7	
Mother's education										
Less than high school	44.6	44.0	42.9	47.3	44.1	45.2	65.1	27.5	21.5	
High school degree	12.7	11.6	14.2	12.5	11.9	13.6	11.0	12.8	17.5	
More than high school	42.6	44.4	42.9	40.1	44.1	41.2	23.9	59.7	61.0	
Lived at residence > 5 years	40.5	36.0	44.4	42.2	39.9	41.2	37.1	39.4	54.3	
Neighborhood-Level Covariates										
Violent crime (mean)	-0.1 (1.9)	-0.1 (1.9)	-0.1 (1.9)	-0.1 (1.8)	-0.1 (1.9)	-0.1 (1.9)	0.0 (1.7)	0.7 (1.9)	-1.8 (1.5)	
Poverty (mean)	0.0 (0.7)	0.0 (0.7)	0.0 (0.7)	0.0 (0.7)	0.0 (0.7)	0.0 (0.7)	-0.1 (0.5)	0.4 (0.7)	-0.7 (0.5)	
Immigrant population (mean)	0.5 (1.0)	0.5 (1.0)	0.5 (1.0)	0.5 (1.0)	0.5 (1.0)	0.5 (1.0)	1.2 (0.8)	-0.3 (0.9)	0.2 (0.5)	
Residential mobility, turnover (mean)	-0.1 (0.9)	-0.1 (0.9)	-0.1 (0.9)	-0.1 (1.0)	-0.1 (0.9)	-0.1 (0.9)	-0.4 (0.7)	0.3 (1.1)	0.1 (1.0)	
N	2,201	845	701	655	1,103	1,098	1,091	702	327	

Table 2**Multilevel Models Predicting Exposure to Violence with Family Structure Changes**

	Unstandardized Coefficients (Standard Error)		
	Model 1	Model 2	Model 3
Family structure at Wave 1 (reference: Married biological parents)			
Cohabiting biological parents	0.149 (0.155)	0.090 (0.155)	0.084 (0.153)
Step parents	0.116 (0.125)	0.094 (0.126)	0.069 (0.124)
Single parent	0.330 *** (0.075)	0.264 ** (0.080)	0.257 ** (0.082)
Family Structure Change Wave 1–3 (Reference: No Change)			
One change	0.190 [†] (0.101)	0.179 [†] (0.103)	0.186 [†] (0.097)
Two changes	0.298 * (0.136)	0.300 * (0.139)	0.326 * (0.140)
Individual Characteristics			
Female	−0.394 *** (0.075)	−0.399 *** (0.078)	−0.395 *** (0.077)
Race (reference: White)			
Latino/a	0.539 *** (0.111)	0.327 ** (0.116)	0.198 (0.121)
African-American	0.864 *** (0.121)	0.793 *** (0.127)	0.597 *** (0.137)
Other	0.407 * (0.208)	0.357 [†] (0.207)	0.255 (0.193)
Age (reference: Cohort 6)			
Cohort 9	0.364 *** (0.084)	0.357 *** (0.088)	0.359 *** (0.089)
Cohort 12	0.827 *** (0.095)	0.812 *** (0.109)	0.816 *** (0.108)
Family Characteristics			
Family structure change prior to Wave 1		0.022 (0.086)	0.041 (0.087)
Age of primary caregiver		0.006 (0.058)	0.023 (0.064)
Socioeconomic status at Wave 2		−0.104 ** (0.030)	−0.081 ** (0.029)
Intimate partner violence at Wave 2		0.077 (0.116)	0.067 (0.112)

	Unstandardized Coefficients (Standard Error)		
	Model 1	Model 2	Model 3
Residential stability		0.072 (0.067)	0.034 (0.067)
Maternal employment		0.038 (0.073)	0.061 (0.074)
Maternal education (reference: Less than high school)			
High school degree		-0.101 (0.116)	-0.079 (0.110)
More than a high school degree		-0.134 (0.100)	-0.112 (0.089)
Neighborhood Characteristics			
Concentrated disadvantage			2.456 (1.530)
Immigrant population			0.721 (0.606)
Residential mobility/turnover			0.764 (0.548)
Violent crime			0.051 (0.288)

Note: Models adjust estimates for the clustering of respondents within neighborhoods;

[†]
 $p < .1$,

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$.

Table 3
Multilevel Multiple Group Models Predicting Exposure to Violence by Gender, Race/Ethnicity, and Age

	Unstandardized Coefficients (Standard Error)							
	By Age/Cohort				By Gender			
	Cohort 6	Cohort 9	Cohort 12	Boys	Girls	Latinos/as	African-Americans	Whites
	1	2	3	4	5	6	7	8
Family Structure (reference: Married biological parents)								
Cohabiting biological parents	0.199 (0.392)	-0.052 (0.301)	0.036 (0.247)	0.050 (0.192)	0.149 (0.242)	-0.071 (0.182)	0.271 (0.275)	0.956 [*] (0.446)
Step parents	0.248 (0.819)	0.077 (0.319)	-0.120 (0.404)	0.122 (0.159)	0.055 (0.182)	-0.270 ^b (0.173)	0.343 [†] (0.199)	-0.139 (0.410)
Single parent	0.307 (0.666)	0.288 (0.202)	0.112 (0.446)	0.225 [*] (0.110)	0.318 ^{**} (0.107)	0.197 [†] ^b (0.111)	0.445 ^{**} (0.128)	0.043 (0.253)
Family Structure Change (Reference: No Change)								
One change	0.143 (0.212)	0.257 (0.211)	0.105 (0.254)	0.426 ^{**a} (0.133)	-0.053 (0.154)	0.219 [†] (0.117)	0.208 (0.145)	0.357 (0.396)
Two changes	0.283 (0.262)	0.343 (0.239)	0.406 (0.278)	0.585 ^{**} (0.211)	0.075 (0.206)	0.209 (0.175)	0.396 [†] (0.208)	0.206 (0.632)
Individual covariates								
Female	-0.388 ^{***} (0.097)	-0.388 ^{***} (0.097)	-0.388 ^{***} (0.097)	---	---	-0.391 ^{***} (0.078)	-0.391 ^{***} (0.078)	-0.391 ^{***} (0.078)
Race (reference: White)								
Latino/a	0.118 (0.823)	0.118 (0.823)	0.118 (0.823)	0.217 [†] (0.125)	0.217 [†] (0.125)	---	---	---
African-American	0.481 (0.841)	0.481 (0.841)	0.481 (0.841)	0.581 ^{***} (0.151)	0.581 ^{***} (0.151)	---	---	---
Other	0.167 (0.645)	0.167 (0.645)	0.167 (0.645)	0.259 (0.185)	0.259 (0.185)	---	---	---
Age (reference: Cohort 6)								

Unstandardized Coefficients (Standard Error)									
By Age/Cohort			By Gender			By Race/Ethnicity			
	Cohort 6	Cohort 9	Cohort 12	Boys	Girls	Latinos/as	African-Americans	Whites	
	1	2	3	4	5	6	7	8	
Cohort 9	---	---	---	0.347*** (0.089)	0.347*** (0.089)	0.359*** (0.091)	0.359*** (0.091)	0.359*** (0.091)	
Cohort 12	---	---	---	0.791*** (0.108)	0.791*** (0.108)	0.857*** (0.102)	0.857*** (0.102)	0.857*** (0.102)	

Note: Models adjust for neighborhood clustering and control for pre-Wave 1 family structure change, primary caregiver's age, Wave 2 socioeconomic status and intimate partner violence, residential moves, maternal employment and education, neighborhood concentrated disadvantage, immigrant population, residential instability, and violent crime;

^c $p < .1$,

^{*} $p < .05$,

^{**} $p < .01$,

^{***} $p < .001$,

^a significantly different than girls,

^b significantly different than African-Americans ($p < .10$).