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Maltreated and comparison adolescents' recollections of lifetime residences: Relationship to delinquency and marijuana use

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Abstract

Both childhood maltreatment and frequent childhood residence changes are associated with poor behavioral outcomes including drug use and delinquency. It is not clear whether a higher number of residences results in poorer outcomes for maltreated adolescents compared to adolescents living in the same community but without child welfare-documented maltreatment. Our study of child welfare-affiliated maltreated youth ($n=216$) and comparison youth ($n=128$) from the same community (age $M=18.21$, $SD=1.42$) examined: 1. whether child/caregiver characteristics and maltreatment status were associated with lifetime number of residences and 2. whether child/caregiver characteristics, residences, and maltreatment status were associated with delinquency and marijuana use. The outcomes of this study, number of residences, delinquency, and marijuana use, were all skewed, and consequently negative binomial regressions were used. Maltreatment status, ever living with a non-parent caregiver, and being older are associated with more residence changes during childhood. More residences and male sex are associated with person offense delinquency and marijuana use. In lower income neighborhoods, such as where the adolescents in this study lived, residence changes are not unusual, but in this study maltreated youth moved more often than youth from the same community. It is important to help caregivers who live in disadvantaged neighborhoods, especially families with child welfare involvement, understand the behavioral consequences of residence changes and provide support for stable long-term housing.

Keywords

adolescents; residence changes; marijuana use; delinquency; maltreatment

Introduction

Childhood maltreatment is associated with a myriad of poor outcomes for adolescents, including drug use and delinquency (Thornberry, Huizinga & Loeber, 2004). The prevalence of maltreatment is high in the U.S. In 2012, 42.7 children of 1000 children were referred to child welfare agencies for a maltreatment investigation and child maltreatment was identified by child welfare agencies in 9.2 of 1000 children (U.S. Department of Health and Human Services, 2013). A higher number of residences in childhood is also associated with drug use and delinquency for adolescents and these outcomes differ by sex and ethnicity (Porter & Vogel, 2014). In the U.S, changing residences is not uncommon. According to Waves 6 and 7 data from the U.S. Census Bureau, Survey of Income and Program Participation, between 2010–2011, 9.7 percent of the population moved residences at least one time (Mateyka, 2015). It is not clear whether a higher number of residences results in poorer outcomes for maltreated adolescents compared to adolescents living in the same community but without child welfare-identified maltreatment.

A higher number of residences in childhood are associated with poor outcomes for adolescents and adults without child welfare-identified maltreatment. Residential mobility (i.e., moving residences) is related to mental health problems in adolescence, including externalizing problems, depression, and schizophrenia (Adam & Chase-Lansdale, 2002; Jolleyman & Spencer, 2008; Paksarian, Eaton, Mortensen, & Pedersen, 2014). In adulthood, frequent moves in childhood were related to smoking and suicide, although when the models controlled for adverse childhood experiences, these relationships to poor health outcomes were reduced (Dong et al., 2005). However, another study with younger children found that residential mobility, even when it is frequent, was associated with few effects on a child's well-being when family and child characteristics (e.g. employment, parental education, single parenthood, and child sex) were taken into account (Murphey, Bandy, & Moore, 2012).

Most studies regarding residence mobility in maltreated children are specifically about foster care, however even maltreated children who remain in their home of origin can have residential changes. Evidence shows that most children with child welfare-identified maltreatment remain in their home of origin (Burgess & Borowsky, 2010). For the minority of maltreated children who enter foster care, fewer children are changing foster care placements. For example, in California in 2000 only 18 percent of children who entered foster care and remained in foster care for a year stayed in their first placement. Whereas in 2007, the percentage increased to 26 percent (Danielson & Lee, 2010). Caregivers of youth who do not reside with their birth parent can either be related or unrelated to the child, but many children investigated by child welfare who live with their relatives are in informal kinship arrangements and not in foster care (Stein et al, 2014). Birth parents with children in informal kinship arrangements can have life changes that allow them to reunite with their children, and thus lead to residence changes for their children (Gleeson, 2009). Caretaker instability (e.g. changing from a parent to a relative) in children without child welfare involvement is also not uncommon (Jaffee et al., 2002) and may result to more changes of residences.

Delinquency is greater in maltreated youth compared to youth without maltreatment, however for those in foster care, research indicates that changes in placement increased the chances of delinquency compared to those who remained with their birth parent (Ryan and Testa, 2005). The same study also found a higher number of residences was associated with increased delinquency in males but not in females, although they did not compare the effect of more residences on delinquency between maltreated and non-maltreated youth (Ryan & Testa, 2005). Other research has shown that any substantiated maltreatment during young adolescence increased the odds of arrest, general offending, and illicit drug use in older adolescence and young adulthood, even controlling for sociodemographic characteristics and prior levels of problem behavior (Smith, Ireland, & Thornberry, 2005). For girls already in the juvenile justice system, self-reported sexual abuse was strongly associated with substance abuse (Smith & Saldana, 2013). However, the association between substance abuse and maltreatment may not hold into adulthood. In a study using child welfare records to document maltreatment, when other adverse childhood experiences were controlled for, maltreatment history was not related to adult substance abuse (Jonson-Reid, Kohl, & Drake, 2012).

Factors associated with frequent residence changes are similar to those that increase delinquency and include unmarried parents, unsafe neighborhoods, exposure to violence, and families with financial problems (Porter & Vogel, 2014). Delinquency and drug use often co-occur in adolescents (Mercado-Crespo & Mbah, 2013) and can differ based on ethnicity/race and sex. Using data on youth in high school from the National Longitudinal Study of Adolescent Health (Add Health), researchers studied the effect of race/ethnicity on delinquency and drug use (Felson & Kreager, 2015). Although the effects were inconsistent, Black adolescents were more likely than White youth to engage in violent acts, but were similarly likely to commit property offenses, and less likely to use illegal substances. Sex differences in the prevalence of delinquency have been found. Delinquency is higher for boys than girls in adolescence, although for younger children the difference in delinquency is less pronounced yet boys still had more delinquency than girls (Wong et al., 2013). Sex differences have also been found in terms of the association between drug use and more residence. For example, drug use initiation was strong for males who had a higher number of residences whereas females who had a higher number of residences were less likely to report early initiation of marijuana (DeWit, 1998).

Researchers have found that residential mobility interacts with neighborhoods, families, and individual factors and affects youth well-being (Jelleyman & Spencer, 2008; Porter & Vogel, 2014). In the present study, the neighborhoods were similar for the maltreated and comparison adolescent populations but the adolescents and their families differed in their exposure to child welfare-documented maltreatment and their contact with child welfare services. There has been little research on the number of residences for maltreated versus comparison youth from similar neighborhoods. The study aims were to investigate: 1. whether maltreatment status, ever having a non-parent as a caregiver, and adolescent demographics were associated with a higher number of residences 2. whether maltreatment status, number of residences, ever having a non-parent as a caregiver, and adolescent demographics were associated with delinquency and marijuana use. We hypothesized that maltreated youth and youth who ever had a non-parent as a caregiver would have a higher

number of residences and that both maltreatment and a higher number of residences would be associated with delinquency and marijuana use. Findings from this study can help child welfare professionals and other health and social service providers better understand risk and protective factors that affect drug use and delinquency in adolescents as well as design preventive programs that address these factors.

Method

Participants

Data were collected at four assessment points (approximately 1 year from Time 1 to Time 2, 1.5 years from Time 2 to Time 3, and 5 years from Time 3 to Time 4; $M = 7.2$ years from Time 1 to Time 4) of an ongoing longitudinal study examining the effects of maltreatment on adolescent development. The enrolled sample featured 454 adolescents aged 9–13 years at Time 1 (303 maltreated and 151 comparison). Of the original sample, 77% completed the Time 4 assessment ($N = 350$). Participants not seen at Time 4 were more likely to be in the maltreatment group ($OR = 2.45, p < .01$) and male ($OR = 1.86, p < .01$). However, the current study included only participants who completed a household stability questionnaire at Time 4 ($n = 347$). Three subjects were removed from the final sample; one youth could not recall residence history prior to 7 years of age and the other two could recall less than 1 year of their residence history. Thus, the final sample was 344 participants (216 maltreated and 128 comparison).

The maltreatment group was recruited from active cases in the child welfare department (CWD) of a large city in California. The inclusion criteria were: (a) a new substantiated referral to the CWD during the preceding month for any type of maltreatment; (b) child age of 9–12 years (some children turned 13 years old between when they enrolled and were interviewed); (c) child identified as Latino, Black, or White (non-Latino); and (d) child resided in one of 10 zip codes in a designated county at the time of referral to the CWD. With the approval of the CWD, the county juvenile court, and the institutional review board of the affiliated university, potential participants were contacted by mail. Of the families referred by CWD, 77% agreed to participate.

The comparison group was recruited using school lists of children aged 9–12 years residing in the same 10 zip codes as the maltreated sample. Comparison caregivers were contacted the same way as the maltreated group. Comparison families were cross-checked in the CWD database to ensure they had no previous or ongoing experience with child welfare agencies. Approximately 50% of the comparison families contacted agreed to participate.

Procedures

Assessments were conducted at an urban research university. After assent and consent were obtained from the adolescent and caregiver, respectively, the adolescent completed questionnaires and tasks during a 4-hour protocol. Both the child and caregiver were paid for their participation according to the National Institutes of Health standard compensation rate for healthy volunteers.

Measures

Demographics and caregiver type—Caregivers provided information at Time 1 about the youth's birthdate, sex, ethnicity and race. Caregiver type for the sample was dichotomized as youth who reported having a birth parent or adoptive parent as their primary caregiver at all four time points versus youth who reported living with a non-parent caregiver at any time point. At Time 4, 15.74% ($n = 34$) of the maltreated youth and 5.47% ($n = 7$) of the comparison youth were not living with any caregiver. When no caregiver was listed at Time 4, we used caregiver information from Time 1, 2, and 3.

Measures in the following sections came from data collected at Time 4.

Number of residences—Youth completed a household stability questionnaire designed for this study to measure lifetime residence history. In this interviewer-administered survey, youth were asked to list their first residence and sequentially account for all residences until the present. Number of residences was totaled based on this self-report.

Delinquency—Youth completed the Adolescent Delinquency Questionnaire (adapted from Huizinga & Elliott, 1986) via computer to protect participant confidentiality. The present study used two scales from the original questionnaire: person offenses (7 items, e.g., “attacked someone with a weapon or with the idea of seriously hurting them,” $\alpha = .74$) and property offenses (10 items, e.g., “damaged or destroyed someone else's property on purpose,” $\alpha = .92$). All questions had six possible answers: 0, 1, 2, 3, 4, and 5 or more times during the previous 12 months. Scores had a possible range of 0 to 35 on the person offense scale and 0 to 50 on the property offense scale.

Marijuana use—Adolescents reported their own substance use on the Adolescent Delinquency Questionnaire (adapted from Huizinga & Elliott, 1986). Marijuana use was captured by one item that asked about frequency of marijuana or hashish use during the previous 12 months. Potential responses were 0, 1, 2, 3, 4 and 5 or more times.

Analyses

All analyses were conducted using SAS 9.4. Descriptive statistics (t -tests) were used to compare the maltreated and comparison groups in terms of adolescent demographics, number of residences, delinquency, and marijuana use. Due to skewness for the outcome variables, (i.e., number of residences, delinquency, and marijuana use) negative binomial regressions were used. Unstandardized coefficients were calculated from these models. The first regression model examined the effects of maltreatment status, caregiver, and adolescent demographics on the number of lifetime residences. The second regression models examined the effect of maltreatment status, number of residences, caregiver, and adolescent demographics on delinquency and marijuana use. The three outcomes, person offense delinquency, property offense delinquency, and marijuana use, were tested in separate regression models. An interaction term between maltreatment status and number of residences was included in second regression models, but this interaction was not significant and thus was dropped from the final analyses.

Results

Table 1 reports demographic information for the adolescent and means of the outcome variables for the total sample and by group (maltreated versus comparison). The final sample was predominantly Latino or Black (77.33%), with a fairly equal number of girls and boys (male = 50.87%). The average age was slightly more than 18 years old ($M = 18.21$, $SD = 1.42$). Almost one half (47.69%) of maltreated youth reported living with a non-parent caregiver at one or more of the four time points whereas only 6.25% of comparison adolescents reported living with a non-parent caregiver at any time point ($t(342) = -8.77$, $p < .001$). Regarding demographic variables, no group differences were noted for age, sex, or race and ethnicity.

The overall average number of residences was 4.91 ($SD = 3.40$, range = 1–17). There was a group difference in number of residences with maltreated youth reporting more residences ($M = 6.03$, $SD = 3.56$, range = 1–17) than comparison youth ($M = 3.02$, $SD = 2.01$, range = 1–11; $t(342) = -8.75$, $p < .001$). No group differences for person delinquency, property delinquency, or marijuana use were found.

In the regression analysis predicting number of residences, age ($b = 0.07$, $p < .001$), maltreatment status ($b = 0.61$, $p < .001$), and caregiver ($b = 0.17$, $p < .05$) were significant (see Table 2). Participants who were older, maltreated, or had ever lived with a caregiver other than a birth parent or adoptive parent had a higher number of residences.

The second regression model predicting delinquency showed that being male ($b = 0.68$, $p < .01$) and number of residences ($b = 0.09$, $p < .05$) were significant predictors of person offense delinquency after controlling for maltreatment and caregiver (see Table 3). Property offense delinquency was also tested, but being male was the only significant predictor ($b = 0.67$, $p < .01$). For marijuana use, male sex ($b = 0.44$, $p < .05$), racial and ethnic minority status ($b = 1.05$, $p < .01$), and number of residences ($b = 0.06$, $p < .05$) were significant after controlling for maltreatment and caregiver. Maltreatment was not significantly associated with either delinquency or marijuana use.

Discussion

This study explored predictors of a higher number of residences in maltreated and comparison adolescents as well as the relationship of the number of residences, child and caregiver characteristics, and maltreatment status to behavioral outcomes. Maltreatment status, ever living with a non-parent caregiver, and being older was associated with a higher number of residences during childhood. For maltreated and comparison adolescents, number of lifetime residences was related to self-reported person offense delinquency and marijuana use. Contrary to our hypothesis, maltreatment status was not related to behavioral outcomes in our analysis after controlling for adolescent demographics, ever having a non-parent as a caregiver, and number of residences. Both the maltreated and comparison adolescents lived in the same neighborhoods, thus neighborhood influence may have overshadowed some the effect of maltreatment experiences on poor behavioral outcomes. Also, being male was a consistent predictor of person and property offense delinquency and marijuana use.

Maltreated youth had a higher number of residences than the comparison youth and more residences were associated with ever not having a parent as their caregiver. Some of those maltreated youth without a parent as their caregiver were in a foster care setting. Because of the temporary nature of foster care, children can have a series of placements in foster care followed by returns to their birth parents over their childhood (Shaw, 2006). Also, foster care instability (moving from one foster home to another) is an unfortunate reality and may have led to more lifetime residences (Gauthier, Fortin, & Jeliu, 2004). Maltreated adolescents not in foster care who lived with relatives may have had more residences because they may have been shifted between relatives or back and forth from their relatives to their birth parents (Gleeson, 2009). There were very few comparison adolescents who ever lived with a non-parent caregiver, but they, too, may have had similar experiences where caregiver instability was the reason for a change in residence. Along with maltreatment and ever having a non-parent as a caregiver, older age was associated with a higher number of residences for the whole sample. This may be explained by the fact that older participants simply had more time to have moved residences. Also, older adolescents and young adults are more likely to change residences (Schachter, 2004).

Being male was associated with person delinquency, property delinquency, and marijuana use. This finding is consistent with other studies of maltreated adolescents and adolescents without documented maltreatment (Ryan & Testa, 2005; Wong et al., 2013). Sanders (2011) postulates that for working-class males, substance use and delinquency are a form of “doing masculinity” or “protest masculinity,” although he identifies that it is not clear which variable precedes the other. Boys experience more psychosocial risk exposure for delinquency and lower levels of protective factors, and this combination can help to explain higher rates of delinquency among boys (Fagan et al., 2007).

In the present study, minority status only predicted marijuana use and not delinquency. This finding is different than the Add Health study, in which Black adolescents were more likely to engage in violent acts, but less likely than White youth to use illegal substances (Felson & Kreager, 2015). The minority adolescents in the present study were almost equally Latino and Black and a large number of the adolescents were identified as biracial. In a post-hoc analysis, each minority group, Latino, Black, and Biracial, was significantly associated with higher marijuana use compared to Whites whereas for person and property delinquency, none were significant. Contrary to our findings, other studies have shown the highest rates of marijuana use among Latino youth, with rates among Black youth being lower or the same as White youth (Amey & Albrecht, 1998; Shih, Miles, Tucker, Zhou, & D'Amico, 2010). In a study using the National Longitudinal Survey of Youth, researchers did not find any moderation effects by ethnicity on measures of neighborhood disadvantage, and neighborhood disadvantage was strongly correlated to conduct disorders (Goodnight et al, 2012). Thus it could be in this study that the neighborhood and not ethnicity/race was the primary influence on delinquency.

There are limitations to consider. The study population is primarily minority and urban which limits generalizability. Although none of the comparison adolescents had maltreatment documented by the child welfare system at the beginning of the study, it is possible that they also had maltreatment experiences that were unreported. The adolescents

self-reported their lifetime residences, but their recollections may have not been completely accurate. Also, the adolescents' self-report of delinquency behaviors and marijuana use may have been affected by social expectations. Although information about other substances was included in the survey, the frequencies of use of substances other than marijuana were not high enough to be analyzed. Adolescents reported the type of caregiver they were living with but did not report whether they were in formal foster care. The inability to determine foster care status of the participants made it more difficult to compare our findings to studies which examined placement instability in foster care. The findings are subject to some bias since fewer males and maltreated youth were interviewed at Time 4.

In conclusion, for this population of adolescents living in an underprivileged urban community, a greater number of residences during childhood and adolescence was associated with poor behavioral outcomes. The long-term consequences of this type of chaotic childhood experience can be serious, but protective family factors such as nurturing parents and less stressful family environments can increase resiliency in maltreated youth and other low-income youth as well as could possibly mitigate the influence of frequent residential moves (Rhule, McMahon, Spieker & Munson, 2006; Trickett, Kurtz, & Pizzigati, 2004). More investigation on why youth move and whether the type of housing they were moving out of or into was stable or unstable would offer more a more complete picture. Nevertheless, this study found that both maltreated and comparison adolescents, especially males, with a higher number of residences during childhood were at risk for person offense delinquency and marijuana use. In lower income neighborhoods, such as where the adolescents in this study lived, residence changes are not unusual (U.S. Department of Housing and Urban Development, 2014), but in this study maltreated youth moved more often than youth from the same community. It is important to bring awareness to parents and caregivers who live in disadvantaged neighborhoods, especially for families with child welfare involvement, regarding the behavioral consequences of frequent residence changes and support them as they try to pay for adequate housing for their families. The U.S. Department of Housing and Urban Development has programs that provide affordable housing to low-income families who live in communities with very high rents (Newman, 2008). Los Angeles, where this study took place, has some of the highest rents in the nation (Logan, 2015). Locally, some communities have been able to improve residential stability with programs such as rent control, which encourages families stay in their residences for longer periods of time (Scalon & Devine, 2001). A coordinated effort by local and federal agencies to improve residential stability is needed to help families stay in their residences since in this study more residence changes was associated with adolescent risk behavior outcomes. Possibly linking these efforts by local and federal agencies with child welfare agencies will help parents with child welfare involvement increase their access to adequate and secure long-term housing.

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Table 1

Adolescent Characteristics and Descriptive Statistics for Study Variables

	Total Sample (<i>n</i> = 344)	Maltreated (<i>n</i> = 216)^a	Comparison (<i>n</i> = 128)	
	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>	<i>p</i> ^a
Age (years)	18.21 (1.42)	18.24 (1.34)	18.16 (1.57)	0.63
Gender				
Female	169 (49.13)	113 (52.31)	56 (43.75)	0.13
Male	175 (50.87)	103 (47.69)	72 (56.25)	0.13
Race and ethnicity				
Black	137 (39.83)	92 (42.59)	45 (35.16)	0.17
Latino	129 (37.50)	75 (34.72)	54 (42.19)	0.17
White	33 (9.59)	20 (9.26)	13 (10.16)	0.79
Mixed or biracial	45 (13.08)	29 (13.43)	16 (12.50)	0.81
Caregiver				
Biological or adoptive	233 (67.73)	113 (52.31)	120 (93.75)	<.001
Non-parent	111 (32.27)	103 (47.69)	8 (6.25)	<.001
Number of residences	4.91 (3.40)	6.03 (3.56)	3.02 (2.01)	<.001
Person offense delinquency ^b	2.25 (4.42)	2.46 (4.67)	1.89 (3.97)	0.25
Property offense delinquency ^c	3.65 (7.76)	3.63 (8.38)	3.67 (6.62)	0.96
Marijuana use ^d	1.80 (2.22)	1.81 (2.19)	1.77 (2.28)	0.84

^aGroup differences tested using independent samples *t*-test.

^bResponse options were 0, 1, 2, 3, 4, and 5 or more times during previous 12 months; seven items; score range of 0–35.

^cResponse options were 0, 1, 2, 3, 4, and 5 or more times during previous 12 months; 15 items; score range of 0–75.

^dResponse options were 0, 1, 2, 3, 4, and 5 or more times during previous 12 months; one item; score range of 0–5.

Table 2

Negative Binomial Regression Predicting Number of Residences

	b		SE
Total sample ($n = 344$)			
Age	0.07	***	0.02
Gender ^a	-0.07		0.06
Race and ethnicity ^b	0.14		0.11
Maltreated or comparison ^c	0.61	***	0.08
Caregiver ^d	0.17	*	0.07

^a0 = female, 1 = male.^b0 = White, 1 = Black, Latino, or mixed or biracial.^c0 = comparison, 1 = maltreatment.^d0 = birth parent or adoptive parent, 1 = unrelated or related caregiver*
 $p < .05$.**
 $p < .01$.***
 $p < .001$.

Negative Binomial Regression Predicting Person and Property Offense Delinquency and Marijuana Use

Table 3

	Person Offenses		Property Offenses		Marijuana Use	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Total sample (<i>n</i> = 344)						
Age	−0.05	0.10	0.08	0.09	0.07	0.07
Gender ^a	0.68 **	0.23	0.67 **	0.24	0.44 *	0.18
Race and ethnicity ^b	−0.03	0.44	0.18	0.43	1.05 **	0.34
Maltreated or comparison ^c	0.16	0.28	−0.20	0.28	−0.13	0.21
Caregiver ^d	−0.35	0.30	−0.13	0.30	0.10	0.20
Number residences	0.09 *	0.04	0.05	0.04	0.06 *	0.03

^a0 = female, 1 = male.^b0 = White, 1 = Black, Latino, or mixed or biracial.^c0 = comparison, 1 = maltreatment.^d0 = birth parent or adoptive parent, 1 = unrelated or related caregiver.* *p* < .05.** *p* < .01.*** *p* < .001.