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Childhood experiences and housing insecurity in adulthood: The salience of childhood emotional abuse

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ABSTRACT

The majority of recent research and interventions related to childhood experiences and young adult housing challenges has been focused on the role of foster care involvement. However, we know much less about how a wider range of childhood experiences, such as maltreatment, relate to adult economic and housing outcomes. Informed by the Stress Process Model, the present study uses data from 11,764 individuals from Waves 1, 3, and 4 in-home surveys of the National Longitudinal Study of Adolescent to Adult Health. Bivariate tests and logistic regressions explored whether a history of foster care involvement, running away before age 18, being kicked out of home, or frequency of incidents of child maltreatment (physical, emotional, or sexual abuse) prior to age 18 are related to housing insecurity in adulthood, measured by inability to pay rent/mortgage, being evicted, or inability to pay utilities in the past 12 months in adulthood (ages 26–32). Multivariate models demonstrated that the higher number of adverse experiences in childhood, the higher the odds of experiencing housing insecurity in adulthood, controlling for demographic and other factors. In the multivariate model testing the relationship of individual types of adverse experiences, only childhood emotional abuse remained significantly related to higher likelihood of housing insecurity in adulthood after controlling for multiple comparisons. Compared with those who experienced no emotional abuse in childhood, those who reported that they experienced emotional abuse more than ten times in their childhood had approximately 39% higher odds (OR = 1.39, $p < 0.01$) of experiencing housing insecurity in adulthood. The salience of emotional abuse for increased housing insecurity should receive greater attention in both the housing and child welfare sectors.

1. Introduction

Homelessness and housing insecurity at the population level are generally associated with housing affordability and other structural factors (Benjaminsen & Andrade, 2015). However, individuals also vary in their risk for housing insecurity due to individual characteristics and experiences (Shinn, 1992). Adverse childhood events in particular may contribute to an individual's chance of experiencing poor housing outcomes. We know that individuals who experience homelessness in adulthood are much more likely to have experienced adverse events in childhood than those in the general population who have not experienced homelessness (Herman, Susser, Stuening, & Link, 1997; van den Bree et al., 2009; Sundin & Baguley, 2014). However, homelessness is widely seen as the most extreme form of housing insecurity (Frederick, Chwalek, Hughes, Karabanow, & Kidd, 2014). We still know little about how adult housing insecurity more broadly may relate to negative childhood experiences such as running away or getting kicked out of the home; foster care involvement; or childhood maltreatment. The present study aims explores these relationships from a large national longitudinal survey of individuals from adolescence (ages 11–21) to adulthood (ages 26–32).

2. Literature review

2.1. Terminology and measurement of housing insecurity

There is still a lack of agreement around the terminology and measurement of housing insecurity in the Unites States. Housing insecurity is an umbrella term referring to housing unaffordability (e.g. high income-to-rent burden) and housing instability (e.g., frequent moves; Warren & Font, 2015). Measures of housing insecurity can include homelessness and/or doubling up; inability to meet household expenses (such as rental payments; Bauman, 1999; Rector, Johnson, & Youssef, 1999); and evictions (e.g. Bauman, 1995; Rector et al., 1999). Some refer to measures of difficulty paying rent or utilities in particular as “bill-paying hardship,” a form of “material hardship,”

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which assesses whether basic needs such as food and shelter are being met (Heflin, Sandberg, & Rafail, 2009).

Most of the literature on the relationship between childhood experiences and housing insecurity focuses on the extreme form of housing insecurity, homelessness, with some exceptions (Berzin, Rhodes, & Curtis, 2011; Courtney, Dworsky, Lee, & Rapp, 2010). The present study thus builds on prior work regarding the relationship between childhood experiences and subsequent homelessness in adulthood by exploring common precursors to homelessness: evictions and inability to afford rent and/or utilities. Understanding how childhood experiences may relate to housing insecurity more broadly may help us identify targeted interventions or supports that could be provided well before an individual becomes homeless. While I refer to these housing challenges as "housing insecurity," I am exclusively focusing on the domain of "housing unaffordability" (Heflin et al., 2009).

2.2. Relationship between childhood experiences and housing insecurity in adulthood

There is a growing body of evidence suggesting that negative childhood experiences may have consequences for well-being in adulthood (Sansone, Leung, & Wiederman, 2012; Zielinski, 2009). In particular, individuals who faced these negative childhood experiences such as running away or being kicked out of the home; being placed in foster care; or child maltreatment may face higher risk of homelessness in adulthood (e.g. Berzin et al., 2011; Fothergill et al., 2012), though we know much less about how these childhood experiences may be related to a wider range of housing challenges.

Stressful childhood experiences may weaken personal or social resources that are needed to attain stable housing in adulthood (Milburn & D'Ercole, 1991). In particular, a childhood context of disruptions and family dysfunction, including child maltreatment, may weaken family bonds or personal well-being needed for stability and well-being in adulthood (Norman et al., 2012; Shonkoff et al., 2012). The Stress Process Model (Pearlin, 1999) informs our understanding of how stressful childhoods or other victimization can be pivotal in the process toward homelessness or other experiences of housing insecurity (Milburn & D'Ercole, 1991). Generally, the stress process model describes how a stressor in one domain of one's life might contribute to an accumulation of stressors in other domains. These interconnections between various stressors in one's life can create a chain of consequences (Pearlin, 1999). For example, those in disadvantaged social positions may be less likely to develop economic and social resources that they can use to cope with future stressors, which can in turn weaken future well-being (Lippert & Lee, 2015; Pearlin, Menaghan, Lieberman, & Mullan, 1981). This framework can inform an understanding of the impact of childhood stressors on adult housing insecurity and homelessness. Childhood stressors may weaken resources that young people may need to successfully transition to adulthood, and this may set one on a challenging path. Recent research informed by the stress process model suggests that individuals who experience childhood adversity are more vulnerable to later stressful events (Nurius, Green, Logan-Greene, & Borja, 2015). Below we outline our current understanding and gaps in knowledge regarding the role of childhood adversities (including foster care history; running away or being kicked out of the home; or child maltreatment) and homelessness and/or housing insecurity in adulthood.

2.2.1. Foster care history

A relatively high rate of negative childhood experiences including foster care history and maltreatment have been documented among homeless adults surveyed in shelters, compared to the general population (Herman, Susser, Struening, & Link, 1997; Park, Metraux, & Culhane, 2005; van den Bree et al., 2009). While there has been growing interest in the association between aging out of or emancipating from foster care and risk of homelessness (e.g., Berzin et al., 2011; Curry and Abrams, 2014; Dworsky, Napolitano, & Courtney, 2013), both retrospective and prospective studies indicate a link between *any* foster care involvement in childhood and homelessness in adulthood (Berzin et al., 2011; Park, Metraux, & Culhane, 2005; Shelton, Taylor, Bonner, & van den Bree, 2009). In adult samples, those with childhood foster care experience are also more likely to experience homelessness, with estimates ranging from 9% to 39% (Park et al., 2005; Koegel, Melamid, & Burnam, 1995). While most studies on housing outcomes of former foster youth focus primarily on incidence of homelessness, findings from the Midwest Evaluation of the Adult Functioning of Former Foster Youth ("Midwest Study") document housing insecurity among emancipated foster youth who had been in foster care at age 17 (Courtney, Dworsky, Lee, & Rapp, 2010). Many of the youth in this study faced challenges maintaining safe and stable housing; these emancipated foster youth were more likely to report being evicted in the past 12 months (8.6%), difficulty paying rent (28%), or difficulty paying their utility bills (26.9%) compared to a representative sample of peers who did not have a foster care history (0.7%, 7.4%, and 11.8% respectively) (Courtney et al., 2010).

2.2.2. Running away or kicked out of the home

Studies have suggested that there may be long-term effects of running away in adolescence on risk of adult homelessness (Fothergill, Doherty, Robertson, & Ensminger, 2012; Sznajder-Murray, Jang, Slesnick, & Snyder, 2015) and poor adult physical health, mental health, and substance use (Tucker, Edelen, Ellickson, & Klein, 2011). In a prospective study of childhood precursors to homelessness in a community population of African Americans in a neighborhood in Chicago, Fothergill et al. (2012) reported that running away from home prior to age 15 was a strong predictor for any homelessness between the ages of 15 and 42. Others suggest that multiple runaway episodes in adolescence, but not single runaway episodes, are significantly related to homelessness in young adulthood (Sznajder-Murray et al., 2015). In in-depth interviews, homeless young adults report that they ran away or were kicked out of the home most commonly at ages 12–15 due to conflict with or between caregivers, or due to abuse (Tyler & Schmitz, 2013). However, we still know little about the effects of running away or being kicked out of the home on housing insecurity in adulthood.

2.2.3. Childhood maltreatment

We also know that childhood maltreatment may lead to poor physical and mental health, educational attainment, employment, and socioeconomic status among adults (Currie & Spatz Widom, 2010; Gilbert et al., 2009; Sansone, Leung, & Wiederman, 2012; Zielinski, 2009). In particular, a history of childhood sexual and physical abuse may create challenges that can negatively impact employment outcomes and socioeconomic well-being in adulthood (Sansone et al., 2012; Zielinski, 2009). Survivors of any form of childhood maltreatment are twice as likely to live under the federal poverty line and those who experienced physical abuse or multiple forms of maltreatment are twice as likely to be unemployed in adulthood (Zielinski, 2009). In a longitudinal cohort of adults who had experienced documented abuse or neglect as children, Currie and Spatz Widom (2010) found lower earnings, lower educational attainment, lower employment, and fewer assets (such as owning a vehicle, a home, or stocks) than matched control cases without documented abuse or neglect, controlling for background characteristics.

Some forms of childhood maltreatment have also been linked to adult homelessness, though we know little about how child maltreatment relates to housing insecurity more broadly. For example, self-reported childhood physical abuse among homeless adults is widely variable across studies, one meta-analysis reported an estimated average prevalence of 37% (Sundin & Baguley, 2014). This prevalence estimate is larger than the estimated prevalence of 18% in the general population (Finkelhor, Turner, Shattuck, & Hamby, 2013). Sundin and Baguley's (2014) meta-analysis also suggested that prevalence rates of

childhood sexual abuse are higher among homeless adults (32% and 10% for women and men, respectively) compared to the general population (10% and 5% among women and men, respectively). Unlike other forms of child abuse, studies of adult homeless populations have not measured childhood emotional abuse (Sundin & Baguley, 2014). However, homeless young adults in qualitative interviews frequently report childhoods in which they felt unwanted or rejected by caregivers (Ferguson, 2009). Yet, we still do not know how childhood emotional abuse relates directly to housing insecurity in adulthood.

While there is increasingly wider recognition of emotional abuse and other forms of child maltreatment and consequences on health and development throughout the life course, there is still much to be understood about the relationship between childhood experiences and a wider range of housing outcomes in adulthood, including housing insecurity. This study builds on prior work on the relationships between homelessness and childhood maltreatment, foster care involvement, running away and being kicked out of the home to understand how these childhood experiences relate to housing insecurity, in particular evictions and hardship in paying rent and/or utilities.

3. Current study

The present study seeks to understand the relationship between certain childhood experiences and housing insecurity in adulthood by posing the following research questions: 1) Does a history of foster care involvement, running away in adolescence, being kicked out of home, or frequency of incidents of child maltreatment (physical, emotional, or sexual abuse) relate to housing insecurity in adulthood (as measured by inability to pay rent/utilities and/or a recent eviction)? and 2) Does the risk of housing insecurity in adulthood increase for those who experience multiple types of these childhood experiences? It was expected that the more types of negative childhood experiences one reports, the higher their risk for housing insecurity in adulthood. Given the association between adult homelessness and childhood experiences of physical abuse, sexual abuse, foster care history, and running away (Fothergill et al., 2012; Park et al., 2005; Sundin & Baguley, 2014; van den Bree et al., 2009), it was expected that there would be a higher risk of inability to pay rent/utilities and/or a recent eviction in adulthood among individuals who experienced these childhood experiences than those who did not. Further, given the association between childhood physical abuse and sexual abuse and risk of poor employment and socioeconomic outcomes in adulthood (Sansone et al., 2012; Zielinski, 2009), it was expected that individuals who experienced these types of childhood abuse would also have higher risk of inability to pay rent/utilities and/or a recent eviction in adulthood than those who did not experience childhood physical or sexual abuse. Lastly, given limited evidence demonstrating that homeless adults report childhoods in which they felt unwanted or rejected by caregivers (Ferguson, 2009), it was expected that being kicked out of the home or experiencing emotional abuse would relate to higher risk of inability to pay rent/utilities and/or a recent eviction in adulthood than among those who did not experience emotional abuse or being kicked out of the home.

4. Methods

4.1. Data and sample

This study uses Waves 1, III and IV in-home surveys of 11,764 respondents in the National Longitudinal Study of Adolescent to Adult Health (Add Health). To date, four waves of data include longitudinal data on the health, social, economic and psychological status of adolescents as they move through the life course. In 1994–1995, Add Health collected Wave I data from approximately 90,000 adolescents in 7th through 12th grade (ages 11–21). From these 90,000 students, 20,745 were selected through stratified sampling by gender and grade to participate in an in-home survey. Wave II of data collection occurred in 1996 with 14,738 of the same adolescents who had participated in the in-school survey in Wave I.

In 2002, Wave III included follow-up in-home interviews with 15,170 Wave I respondents (76% response rate), who were ages 18–26 (Chantala, Kalsbeek, & Andraca, 2005). In 2008, Wave IV of the study followed up with 15,701 of the original Wave I respondents, representing a response rate of 80.2%.

The sample for this study includes individuals who participated in Add Health Waves I, III, and IV in-home surveys and excludes those who were did not participate in all three waves. Wave II was excluded because many Wave II participants were, by design, not included in subsequent waves. Of the total 20,745 participants included in the in-home sample at Wave I, 5578 were not included in Wave III of data collection. Another 2135 who participated in both Waves I and III did not participate in Wave IV. In addition, 571 did not have sample weights for Wave IV and were excluded. An additional 1043 were missing responses to key study variables. Multiple Imputation (MI) was used to assign missing values using are auxiliary values (Sinharay, Stern, & Russell, 2001). Five imputations were used to acquire estimates. After missing values were imputed, the total sample for this study was 11,764.

4.2. Measures

4.2.1. Dependent variable

Housing insecurity in adulthood (ages 26–32) was measured in Wave IV. Respondents were asked a series of questions about whether in the past 12 months there was a time when they (or their household): (1) “didn't pay the full amount of the rent or mortgage because you didn't have enough money?”, (2) “were evicted from your house or apartment for not paying the rent or mortgage?”, (3) “didn't pay the full amount of a gas, electricity, or oil bill because you didn't have enough money?” or (4) “had the service turned off by the gas or electric company, or the oil company wouldn't deliver, because payments were not made?” In this study, a dichotomous variable represents housing insecurity. Those who indicated “yes” on any of these questions were coded “1” on this variable and those who answered “no” on all of these questions were coded “0.” Eviction was combined with other forms of housing insecurity because of the small number of individuals in the analytic sample who experienced eviction.

4.2.2. Childhood adversity

Child maltreatment was measured retrospectively in Wave IV. Respondents were asked a series of questions about mistreatment by adults prior to their 18th birthday. Emotional abuse was measured based on frequency of occurrence before age 18, categorized as “one time,” “two times,” “three to five times,” “six to ten times,” “more than ten times,” or “this never happened.” The same response categories measured childhood physical abuse. Lastly, to measure sexual abuse, the responses for “one time” and “two times” were combined, as were “three to five times,” “six to ten times” and “more than ten times” because of low numbers of responses in many of the categories. Foster care placement was measured retrospectively in Wave III. Respondents were asked “Did you ever live in a foster home.” Responses were simply “yes” or “no.” Running away was measured retrospectively in Wave III. Respondents were asked “Have you [did you] ever run away from home?” Having been kicked out of home was also measured retrospectively in Wave III. Respondents were asked “Have your [did your] parents ever order you to move out of their house?”

A composite variable was also created to measure the number of types of childhood adversity and risk of housing insecurity in adulthood. First, variables were dichotomized to represent *any* of the following: foster care involvement, physical abuse, sexual abuse, emotional abuse, running away, or being kicked out of the home. Then, a measure quantifying the number of total experiences from “0” to “4 or more” was created (e.g. reporting “physical abuse” and “sexual abuse”

but no other types would equal a value of two).

4.2.3. Control variables

Covariates included gender; race/ethnicity; age; parental educational attainment in Wave 1; substance use; depression; socioeconomic status in Wave III; relationship status; receipt of housing assistance, welfare benefits, or food stamps as an adult; and respondent's number of children. Race/ethnicity was constructed from responses in Wave I to the questions: “Are you of Hispanic or Latino origin” and “What is your race.” The variable was re-coded as dummy variables for White, Black, Asian, and Other. Additionally, there was a dummy variable for Hispanic ethnicity. This allowed an individual who is both black and Hispanic, for example, to be coded as both. Gender was reported in Wave 1. The variable was coded female = 1 and male = 0. Age was measured in Wave IV. The variable was calculated by subtracting birth year and month from interview date.

Parental educational attainment was included as a proxy for the child's socioeconomic status in childhood. This was measured using respondent's responses to Wave 1 in-home surveys asking about the highest level of education they had completed. For each parent respondents were asked, “How far did in school did {this person} go?” For those living in homes headed by a single parent, the education level for that parent was used. For those in two-parent households, the highest education level from either parent was used.

Problematic substance use, including alcohol and drugs, has been associated with housing insecurity among young adults (Berzin et al., 2011), and therefore measures of alcohol use in Wave IV (in adulthood) were included as control variables in the models. Alcohol use in Wave IV was measured in terms of frequency and duration. A measure capturing the estimated frequency and duration of alcohol consumed in the past 12 months was a product of these two questions. First, respondents were asked on how many days during the past 12 months they had an alcoholic drink. Response categories included “none,” “1 or 2 days in the past 12 months,” “once a month or less (3 to 12 days in the past 12 months)” “2 or 3 days a month,” “1 or 2 days a week,” “3 to 5 days a week,” or “every day or almost every day.” Next, to measure quantity of alcohol drinking, respondents were asked on a continuous scale how many times they had a drink during the past 12 months. Reponses ranged from 1 drink to 18 drinks. This measure was truncated at 10 drinks per drinking session because of an overly skewed distribution. A measure of the total estimated number of drinks in the past 12 months, the variable indicating number of days drinking and the variable measuring average number of drinks each time were multiplied together. The range of the product of the frequency measure and quantity of alcohol included a range from 0 to 3650 estimated drinks in the past 12 months. Given that the quantity measure was truncated at 10 drinks per drinking session, the quantity multiplied by the frequency measure was also truncated at 10 times 365 days per year, which equals a maximum value of 3650 drinks per year.

Marijuana use was measured based on how many days within the past 12 months the respondent had used marijuana in Wave IV (adulthood). The categories were re-coded to “none,” “once a month or less (“1 or 2 days in past 12 months” or “once a month or less”), “2–3 days per month,” “weekly” (“1–2 days a week” or “3–5 days a week”) or “every day or almost every day.”

If respondents responded in the affirmative to the question in Wave IV, “Have you ever used any of the following drugs: steroids; cocaine; crystal meth; other types of illegal drugs, such as LSD, PCP, ecstasy, heroin, mushrooms, or inhalants” they were subsequently asked, “Which one type have you used most frequently in your lifetime?” They were then asked “During the past 12 months, on how many days did you use {favorite drug}?” The categories were re-coded to a binary variable indicating “none” or “at least one time in the past 12 months.”

Depression is considered a risk factor for homelessness (Greenberg & Rosenheck, 2010), and was thus included as a covariate in the present study. Respondents were asked five questions in Wave IV from the original twenty questions in the Center for Epidemiologic Series Depression Scale (CES-D) (Goodman, 1999). Previous research has indicated that the 5-item CES-D is valid (Perreira, Deeb-Sossa, Harris, & Bollen, 2005). Respondents were asked how often in the past seven days they 1) were bothered by things that usually don't bother them, 2) could not shake off the blues, even with the help from your family or friends, 3) felt depressed, 4) had trouble keeping their mind on what they were doing and 5) felt sad. Item response options ranged from 1 — “never” to 4 — “very often.” The scale thus ranged from 0 to 20 points.

4.2.4. Socioeconomic status

Household income in Wave IV was measured according to gross household income, including non-legal sources. Categories were collapsed into five categories. Subjective debt in Wave IV was measured by the question, “Suppose you and others in your household were to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay off all of your debts. Would you have something left over, break even, or be in debt?”

Marriage and cohabitation status were measured in Wave IV. Those who answered the question “Do you live alone or with others” as “with others” were asked “What is their relationship to you.” Those who answered “husband/wife” were coded “yes” for “married” and those who answered “yes” for “partner/boyfriend/girlfriend” were coded “yes” for “cohabitating.” Receipt of housing assistance, public assistance, and food stamps in adulthood was measured using a question asked in Wave 4. Respondents were asked “Between 2002 and {2006/2007/2008}, did you or others in your household receive any public assistance, welfare payments, or food stamps?” Number of children was measured using a final question asked about their own or a partner's pregnancies and live births. Respondents were asked “How many of these children are still living?” A new variable to measure number of living children was created and those who legitimately skipped the question regarding how many were still living were coded “0.” Weighted descriptive measures can be found in Table 1.

4.3. Statistical analysis

4.3.1. Analysis weights

Due to the unequal selection probabilities for schools and students of the original schools in Wave I, sampling weights were developed to adjust for over-sampling of particular populations so that the data represent the entire population of youth in the U.S. Weights are constructed from Wave I, so respondents must have valid weights at both the most recent wave and at Wave I. In the present study, weights for those included in all three waves were used (Chen & Chantala, 2014).

4.3.2. Analyses to test hypotheses

Binomial logistic regressions were used to test the direct relationship between each indicator of childhood adversity (foster care, physical abuse, sexual abuse, emotional abuse, kicked out of home and/or running away) on indicators of housing insecurity in adulthood. First, bivariate relationships between each indicator of childhood adversity and housing insecurity were tested using Stata 13. Next, housing insecurity was regressed on the composite variable measuring number of types of adverse childhood experiences controlling for demographic and other factors. Then housing insecurity was regressed on all five measures of childhood adversity and control variables. Lastly, the Holm Bonferroni sequential approach was used to correct for multiple comparisons and risk of Type I error (Holm, 1979).

5. Results

5.1. Bivariate analyses

Table 2 shows the unadjusted binomial logistic regressions for each

Table 1
Weighted descriptive statistics (n = 11,764).

	n	Weighted mean (LSE)/%
Dependent variables		
Housing hardship		
Yes	2119	18.01
No	9645	81.89
Childhood adversity		
Foster care		
Yes	254	2.16
No	11,510	97.80
Physical abuse		
Never happened	9679	82.27
1 time	613	5.21
2 times	375	3.18
3–5 times	377	3.20
6–10 times	197	1.67
> 10 times	523	4.44
Emotional abuse		
Never happened	6281	53.39
1 time	1225	10.41
2 times	1142	9.70
3–5 times	1231	10.46
6–10 times	531	4.51
> 10 times	1354	11.51
Sexual abuse		
Never happened	11,193	95.15
1–2 times	286	2.42
3 or more times	285	2.42
Ran away		
Yes	936	7.96
No	10,828	92.04
Kicked out of the home		
Yes	1242	10.55
No	10,522	89.55
Number of types of adverse experiences in childhood		
None	5312	45.15
One type	3698	31.43
Two types	1797	15.27
Three types	668	5.67
Four or more types	289	2.45
Control variables		
Average age at Wave 4	11,764	28.42(0.14)
Race		
White, non-Hispanic	6596	56.06
Black, non-Hispanic	2399	20.39
Asian, non-Hispanic	758	6.44
Other, non-Hispanic	195	1.65
Hispanic, all races	1816	15.43
Gender		
Female	6431	54.66
Male	5333	45.34
Parental educational attainment		
Less than high school	1403	11.90
High school/GED	3520	29.82
Vocational education or some college	2503	21.27
Graduated college	2789	23.71
More than college education	1549	13.15
Income in Wave 4		
$0–$15,000	2844	24.17
$15,001–$30,000	2955	25.11
$30,001–$45,000	2702	22.96
$45,001–$150,000	2674	22.73
$150,001 or more	589	5.00
Educational attainment by W4		
High school grad or less	2598	22.08
Some college/vocational education	5146	43.74
College graduate/some graduate school	2933	24.93
Completed graduate school	1087	9.24
Welfare, public assistance or food stamp receipt between W3 and W4		
Yes	2496	21.21
No	9268	78.78
Subjective debt		
Would have something left over	7233	61.48
Would break even	2135	18.14
Would be in debt	2396	20.36
Quantity of drinking * Frequency of drinking in past 12 months	11,764	199.25(8.48)
Marijuana use past 12 months		
No marijuana use past 12 months	9172	77.96
Once a month or less	1116	9.48
2 or 3 days a month	269	2.28
Weekly	608	5.16
Every day	599	5.09
Other drug use past 12 months		
Yes	1151	9.78
No		
Depression (CESD score)	11,764	2.57(0.03)
Cohabiting but not married		
Yes	1967	16.79
No	9788	83.20
Married		
Yes	4780	40.63
No	6984	59.36
Average number of children	11,764	0.91(0.03)

Table 2
Weighted unadjusted logistic regression models for main childhood adversity independent variables (n = 11,764).

	Housing insecurity	
	OR	95% CI
Foster care	1.72***	1.31, 2.25
Physical abuse (ref = none)		
1 time	1.39**	1.15, 1.69
2 times	1.61***	1.25, 2.05
3–5 times	2.16***	1.71, 2.72
6–10 times	1.68**	1.25, 2.27
10 or more times	2.14***	1.81, 2.53
Sexual abuse (ref = none)		
1–2 times	1.95***	1.48, 2.59
3 or more times	2.71***	1.99, 3.68
Emotional abuse (ref = none)		
1 time	1.28**	1.08, 1.54
2 times	1.59***	1.34, 1.88
3–5 times	1.61***	1.39, 1.86
6–10 times	1.64**	1.24, 2.16
10 or more times	2.21***	1.93, 2.52
Kicked out of home	2.04***	1.79, 2.32
Ran away	2.27***	1.94, 2.65
Number of types of adverse experiences in childhood (ref = none)		
One type	1.49***	1.31, 1.70
Two types	2.09***	1.81, 2.43
Three types	2.85***	2.40, 3.39
Four or more types	4.82***	3.71, 6.26

** $p < 0.01$.
*** $p < 0.001$.

independent variable representing childhood adversity regressed on the dependent variable for housing insecurity in Wave IV without control variables included. We see that all of the measures of childhood adversity, and each level of the composite variable, are significantly associated with housing insecurity in Wave IV.

Table 3 displays the results for the binomial logistic regression of housing insecurity in Wave IV on the total types of adverse childhood events experienced. Results indicate that the more types of adverse experiences someone experienced in childhood, the higher the odds that they will experience housing insecurity in adulthood, controlling for demographic and other factors. For example, when control variables are included, compared to those who reported none of the adverse

Table 3
Weighted adjusted logistic regression for housing insecurity at Wave IV on total types of childhood adversities experienced (n = 11,764).

	OR	95% CI
Number of types of childhood adverse experiences[a]		
One type	1.25**	1.10, 1.43
Two types	1.41***	1.21, 1.64
Three types	1.52***	1.23, 1.87
Four or more types	2.37***	1.81, 3.12
Control Variables		
Age W4	1.04*	1.01, 1.08
Race/ethnicity[b]		
Hispanic	0.81*	0.65, 0.99
Black NH	1.29**	1.10, 1.52
Asian NH	0.55***	0.43, 0.72
Other NH	1.07	0.76, 1.52
Female[c]	1.14*	1.03, 1.27
Parental education[c]		
High school diploma/GED	1.02	0.83, 1.22
Some college	1.13	0.92, 1.39
College graduate	1.17	0.92, 1.49
Some graduate school or more	1.35*	1.04, 1.75
Household income W4[d]		
$15,001–$30,000	1.15*	1.00, 1.31
$30,001–$45,000	0.84*	0.72, 0.99
$45,001–$150,000	0.54***	0.44, 0.68
$150,001 or more	1.06	0.80, 1.41
Education W4[e]		
Voc ed/some college	1.00	0.85, 1.17
College graduate	0.44***	0.35, 0.55
Completed grad school	0.34***	0.25, 0.46
Welfare, public assistance or food stamps in W3 or W4	1.92***	1.72, 2.16
Quantity * frequency of drinking in past 12 months	1.00	0.99, 1.01
Subjective Debt[fg]		
Would break even	1.61***	1.39, 1.85
Would be in debt	2.74***	2.41, 3.13
Marijuana use past 12 months[h]		
Once a month or less	1.44***	1.22, 1.68
2 or 3 days a month	2.16***	1.58, 2.95
Weekly	1.97***	1.56, 2.49
Every day	1.93***	1.59, 2.32
Other drug use past 12 months	1.08	0.93, 1.27
Depression (CESD score)	1.09***	1.15, 1.29
Cohabiting but not married	1.27**	1.07, 1.51
Married	1.07	0.90, 1.27
Number of children	1.22***	1.15, 1.29
Constant	0.02***	0.01, 0.04

[a] Reference category: No types of adversity.
[b] Reference category: White NH.
[c] Reference category: Male.
[d] Reference category: $0–$15,0000.
[e] Reference category: Less than high school.
[f] In response to question, "Suppose you and others in your household were to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay off all of your debts. Would you have something left over, break even, or be in debt?"
[g] Reference category: Would have something left over.
[h] Reference category: No marijuana use.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

childhood events included in the study, those who reported one type of event had 25% higher odds (OR = 1.25, $p < 0.01$) of experiencing housing insecurity in adulthood. These odds of housing insecurity increased to 41% (OR = 1.41, $p < 0.001$) among those reporting two types of adverse events, and to 52% higher odds (OR = 1.52, $p < 0.001$) among those reporting three types. Finally, those who reported that they experienced four or more types of events (foster care, running away, kicked out, physical abuse, sexual abuse, and emotional abuse) had about 2.4 times the odds (OR = 2.37, $p < 0.001$) of experiencing housing insecurity in adulthood.

Table 4 displays the results for the binomial logistic regression of

Table 4
Weighted adjusted logistic regression for housing insecurity at Wave IV on childhood adversity (n = 11,764).

	OR	95% CI
Foster care	0.85	0.61, 1.18
Physical abuse (ref = none)		
1 time	0.95	0.75, 1.21
2 times	1.05	0.76, 1.45
3–5 times	1.42*	1.06, 1.87
6–10 times	0.94	0.65, 1.37
> 10 times	1.30*	1.01, 1.67
Sexual abuse (ref = none)		
1–2 times	1.11	0.79, 1.56
3 or more times	1.38	0.97, 1.97
Emotional abuse (ref = none)		
1 time	1.01	0.83, 1.20
2 times	1.24*	1.04, 1.47
3–5 times	1.31**	1.09, 1.57
6–10 times	1.17	0.84, 1.62
> 10 times	1.39**	1.16, 1.68
Kicked out of home	1.04	0.84, 1.62
Ran away	1.28**	1.08, 1.52
Control Variables		
Age W4	1.12*	1.00, 1.25
Race/ethnicity[a]		
Hispanic	0.82	0.55, 1.01
Black NH	1.32**	1.12, 1.54
Asian NH	0.56***	0.44, 0.73
Other NH	1.11	0.78, 1.57
Female[b]	1.12*	1.01, 1.25
Parental education[c]		
High school diploma/GED	1.03	0.85, 1.24
Some college	1.14	0.92, 1.40
College graduate	1.18	0.93, 1.50
Some graduate school or more	1.36*	1.05, 1.76
Household income W4[d]		
$15,001–$30,000	1.15*	1.01, 1.31
$30,001–$45,000	0.85*	0.72, 0.99
$45,001–$150,000	0.54***	0.43, 0.67
$150,001 or more	1.03	0.79, 1.36
Education W4[e]		
Voc ed/some college	0.99	0.85, 1.17
College graduate	0.44***	0.35, 0.56
Completed grad school	0.34***	0.25, 0.46
Welfare, public assistance or food stamps in W3 or W4	1.94***	1.73, 2.18
Subjective debt[fg]		
Would break even	1.64***	1.42, 1.87
Would be in debt	2.74***	2.42, 3.11
Quantity * frequency of drinking in past 12 months	1.00	0.99, 1.00
Marijuana use past 12 months[h]		
Once a month or less	1.42***	1.21, 1.66
2 or 3 days a month	2.17***	1.62, 2.93
Weekly	1.97***	1.57, 2.48
Every day	1.93***	1.60, 2.34
Other drug use past 12 months	1.08	0.93, 1.27
Depression (CESD score)	1.09***	1.07, 1.12
Cohabiting but not married	1.28**	1.07, 1.52
Married	1.06	0.89, 1.25
Number of children	1.22***	1.15, 1.29
Constant	0.02***	0.01, 0.05

[a] Reference category: No types of adversity.
[b] Reference category: White NH.
[c] Reference category: Male.
[d] Reference category: $0–$15,0000.
[e] Reference category: Less than high school.
[f] In response to question, "Suppose you and others in your household were to sell all of your major possessions (including your home), turn all of your investments and other assets into cash, and pay off all of your debts. Would you have something left over, break even, or be in debt?"
[g] Reference category: Would have something left over.
[h] Reference category: No marijuana use past 12 months.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

housing insecurity in Wave IV on each type of childhood adversity controlling for demographic and other factors. Results indicate that when control variables are included, fewer variables are significantly associated with housing insecurity. Compared to those who reported no physical abuse in childhood, those who reported that it occurred 3–5 times had 42% higher odds ($OR = 1.42$, $p < 0.05$) of housing insecurity in adulthood. In addition, those who reported that physical abuse occurred > 10 times had 30% higher odds ($OR = 1.30$, $p < 0.05$) of housing insecurity. Further, compared with those who experienced no emotional abuse in childhood, those who reported that they experienced emotional abuse two times in their childhood had approximately 24% higher odds ($OR = 1.24$, $p < 0.05$) of experiencing housing insecurity. In addition, those who reported that they experienced emotional abuse 3–5 times in their childhood had just over 30% higher odds ($OR = 1.31$, $p < 0.01$) of housing insecurity compared to those who did not report emotional abuse. Further, those who reported that emotional abuse occurred more than ten times in childhood also experienced almost 40% higher odds ($OR = 1.39$, $p < 0.001$) of housing insecurity in adulthood. Those who reported that they ran away from home in childhood also had a 28% higher odds ($OR = 1.28$, $p < 0.01$) of housing insecurity.

No other measures of childhood adversity were significantly associated with housing insecurity in the full model.

Table 5 shows the pairwise comparisons for childhood adversity and housing insecurity in Wave IV and corrected p values from the Holm's sequential Bonferroni approach (Abdi, 2010). This is a more stringent test of the relationship that controls for the risk of false positives that is important to use in a model that has many tests. We see that after correcting for multiple comparisons, the relationships between experiencing physical abuse 3–5 times or > 10 times and housing insecurity in adulthood are no longer significant, suggesting that the results were false positives. Additionally, we see that experiencing emotional abuse 3–5 times in childhood, being kicked out of the home, and running away in childhood and housing insecurity in adulthood are no longer significant, suggesting that these results were false positives. However, the effect of experiencing emotional abuse > 10 times remained significant.

Table 5
Pairwise comparisons of child adversity and housing insecurity in Wave IV.

Comparisons[a]	*OR*	*p*	Holm's *p*
Foster care	0.85	0.34	ns
Physical abuse (ref = none)			
1 time	0.95	0.67	ns
2 times	1.05	0.75	ns
3–5 times	1.42*	0.02	ns
6–10 times	1.03	0.75	ns
> 10 times	1.30*	0.04	ns
Sexual abuse (ref = none)			
1–2 times	1.11	0.54	ns
3 or more times	1.38	0.07	ns
Emotional abuse (ref = none)			
1 time	1.01	0.99	ns
2 times	1.24	0.05	ns
3–5 times	1.31**	0.01	ns
6–10 times	1.17	0.35	ns
> 10 times	1.39***	0.001	< 0.05
Kicked out of home	1.04**	0.01	ns
Ran away	1.28*	0.05	ns

[a] Controlling for demographics, personal socioeconomic status, substance use and mental health at Wave 4.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

6. Discussion

While there is a growing understanding of the relationship between childhood experiences and health and development throughout the life course, there is still much to be understood about how childhood experiences relate to economic challenges in adulthood, including housing insecurity. This study builds on prior work on the relationships between homelessness and childhood maltreatment, foster care involvement, running away and being kicked out of the home to understand how these childhood experiences relate to hardship in paying rent and/or utilities, which we refer to more broadly as housing insecurity. The results from this study partially support the hypothesis that forms of childhood adversity relate to housing insecurity in adulthood. First, we found that, controlling for demographic and other background factors, the more types of childhood adverse experiences experienced, the higher odds of experiencing housing insecurity in adulthood (ages 26–32). Findings from the Adverse Childhood Experiences (ACEs) Study have found a dose-response relationship to a range of health risks (e.g. Dong et al., 2004; Dong et al., 2005), though previously we did not know whether the number of negative childhood experiences might operate similarly for adult outcomes such as housing insecurity. Additionally, after correcting for multiple comparisons, reporting more frequent childhood emotional abuse was related to higher likelihood of experiencing housing insecurity. Emotional abuse is the most underreported and least studied form of childhood abuse (Barnett, Miller-Perrin, & Perrin, 2005). Thus this type of abuse may have important influences on adult outcomes in isolation of other forms of maltreatment, but these effects remain largely unknown. In the case of this study, chronic emotional abuse (> 10 times) is associated with increased risk of housing insecurity, as measured by difficulty paying rent/mortgage/utilities or eviction within the past 12 months.

Although emotional abuse has not been directly studied in relation to housing outcomes, childhood emotional abuse can affect children's development of positive social skills and emotion regulation (Charuvastra & Cloitre, 2008), which can in turn impact ability to handle other stressful situations and develop positive relationships with others (Powers, Ressler, & Bradley, 2009). However, a more direct link between emotional abuse and experiencing housing insecurity may be due to the lack of visibility and awareness around emotional abuse. Since the psychological injuries imparted on an emotionally abused child are not visible, the problem is often unrecognized by others (Herrenkohl, 1990). When the abuse goes unrecognized for a period of time, this may be a lost opportunity for intervention by other adults in the child's life and thus contribute to the development of a chronic stressor. Additionally, this type of abuse may fail to come to the attention of the child welfare system, which could have provided support to the child and/or removed the child from their home so that further damage could not be done. In the longer term, the young person may blame him or herself or misunderstand the abuse, and therefore this emotional abuse can remain a significant stressor in the transition to adulthood and beyond (Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003).

The remaining forms of childhood adversity studied (including foster care involvement; childhood physical and sexual abuse; running away, or being kicked out of home) were not related to housing insecurity (difficulty paying rent/mortgage/utilities or recent eviction). Given that other adverse childhood experiences can lead to challenges in a range of domains in adulthood (e.g., Allen, 2008; Huang et al., 2011), and due to prior research regarding the relationship between these experiences and homelessness (e.g. Park et al., 2005; Sundin & Baguley, 2014), it was hypothesized that these experiences would be related to higher levels of housing insecurity. However, after correcting for multiple comparisons, none of these measures remained significantly related to housing insecurity. The reason for this lack of relationship could be due to several factors. First, it is possible that controlling for other forms of childhood adversity, foster care, physical

abuse, sexual abuse, running away or being kicked out of the home are not independently associated with adult housing circumstances. Second, as mentioned above, emotional abuse is the most likely to go unaddressed and unreported due to its invisibility; in contrast experiences such as foster care entry, which is typically the result of child abuse or neglect, would remove the child from the source of abuse and hopefully address the consequences of the abuse through counseling and other resources (Burns et al., 2004). Another possible reason that sexual and physical abuses were not significantly associated with housing insecurity may have been due to the lower incidence of sexual and physical abuse as captured in the Add Health data.

6.1. Limitations

This study is not without limitations, particularly around generalizability and construct validity. First, attrition between waves may have meant that analyses were not as representative of the national youth population as they could have been. It is possible that those experiencing more housing insecurity could have been harder to locate or had less ability to participate in an interview, compared to those more stably housed, leading to lower generalization of the findings.

Other limitations relate to the measurement of the focal constructs. First, housing insecurity was measured in 2008 (Wave 4), which coincided with an economic recession. We know that the recession affected rates of eviction and doubling up with family or friends (Mykyta & Macartney, 2011). Therefore, prevalence of housing insecurity may have been much higher among the sample than it would be in earlier or much more recent years. Limitations related to the operationalization of key variables may also be present. This study operationalized the dependent variable of housing insecurity as difficulty paying rent/utilities or eviction within the past 12 months. Other indicators of housing insecurity, such as frequent moves, overcrowding, unsafe conditions, or high rent-to-income burden, were not measured in Add Health. The operationalization of measures of childhood adversity also has limitations. There is potential recall bias in the responses to questions about childhood adversity, particularly among maltreatment questions asked in Wave 4 (ages 26–32). A number of factors, including present circumstances of respondents, can influence recall of earlier events (Prager, 1998), leading to biased over- or under-estimates of childhood abuse (Widom, Raphael, & DuMont, 2004; Widom & Shepard, 1996).

6.2. Implications for practice and policy

Emotional abuse is a common form of childhood abuse, however it is also the least understood and reported (Barnett et al., 2005). Given that it is often accompanied by other forms of abuse (Spertus et al., 2003), it can sometimes be overlooked. Further training of those in everyday contact with children such as teachers, nurses, doctors, and coaches may be needed to increase identification of emotional abuse and awareness of the long-term consequences of such maltreatment (Lambie, 2005). It is important that child welfare caseworkers understand the salience of emotional abuse for adult well-being and stability, including housing insecurity, and pay particular attention to the presence of emotional abuse when investigating other types of abuse or neglect (Trickett, Mennen, Kim, & Sang, 2009). As noted by Trickett et al. (2009), a major focus of interventions with new foster parents (if the child is removed from their home of origin) should be on understanding the relevance and consequences of emotional abuse and assistance in supporting the young person. If the maltreating parents retain custody of the child, the parents must be assisted in developing more appropriate parenting methods (Trickett et al., 2009).

The majority of recent research, policy, and practice interventions related to childhood experiences and young adult housing challenges has been focused on the role of foster care involvement. This important work has provided a significant understanding of the consequences of foster care involvement for later risk of homelessness and housing insecurity. However, this study suggests the relationship between childhood emotional abuse and housing insecurity exist above and beyond foster care involvement. The salience of emotional abuse for increased housing insecurity should receive greater attention in both housing and child welfare sectors. For example, while there are some important housing supports in place for youth aging out or in extended foster care (Dworsky, Dillman, Dion, Coffee-Borden, & Rosenau, 2012), there is currently no special assistance to those who experienced abuse but were not removed from their homes and placed in foster care. If further research continues to demonstrate a direct link between childhood emotional abuse and adult housing insecurity, practitioners who work with transition age youth may need to address this risk through better identification and intervention with those who are not eligible for existing housing support vouchers or programs.

6.3. Directions for future research

The findings of this study suggest possible future lines of research. First, a number of questions remain regarding the mechanism through which childhood emotional abuse is related to higher likelihood of adulthood housing insecurity. In particular, advanced modeling including structural equation modeling could test possible mediators (such as self-esteem, self-efficacy, depression) or more proximal mediators or moderators such as educational attainment or income that may explain the relationship between childhood experiences and housing insecurity in adulthood.

In addition, future studies should consider improved, and multidimensional, measures of adult housing outcomes. Housing insecurity has been defined using a variety of indicators, leading to inability to compare relationships across studies (Frederick et al., 2014). While individual indicators may not alone make up the construct of housing insecurity, the process in creating an index or latent factor for housing insecurity may also be challenging. Researchers exploring the precursors to or effects of housing insecurity need to have this conversation around what defines “housing insecurity” so that this construct can be more accurately measured.

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