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## Material hardship and suicidal behavior: Associations among parents and non-parents

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### Abstract

**Introduction:** Material hardship is unique facet of economic distress and may be a risk factor for suicidal behavior. Parents are more likely to experience both material hardship and suicidal behavior than non-parents. The aims of this study were to (a) examine the association of material hardship with suicidal behavior and (b) assess whether associations differed for parents and non-parents.

**Methods:** We used data from Waves IV and V of the National Longitudinal Study of Adolescent to Adult Health ( $N = 10,685$ ). We conducted logistic regression to examine the association of one and two or more material hardships at Wave IV with suicidal behavior at Wave V.

**Results:** Overall, 38.8% of participants reported material hardship at Wave IV and 7.5% reported suicidal ideation or attempts at Wave V. In the total sample, one material hardship (OR = 1.57, 95% CI 1.20, 2.06) and two or more material hardships (OR = 1.52, 95% CI 1.04, 2.21) were associated with an increased likelihood of suicidal behavior. Among parents, two or more material hardships (OR = 1.86, 95% CI 1.17, 2.94) were associated with an increased likelihood of suicidal behavior. Among non-parents, one material hardship (OR = 1.81, 95% CI 1.26, 2.59) was associated with an increased likelihood of suicidal behavior.

**Conclusions:** Programs and policies aimed at addressing material hardship, particularly accumulating material hardships among parents, may be an effective suicide prevention strategy.

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#### CONFLICT OF INTEREST

The authors have no potential conflicts of interest to disclose.

#### ETHICAL APPROVAL

This research was reviewed and determined to be exempt by the Institutional Review Board at the University of North Carolina at Chapel Hill.

#### SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

## INTRODUCTION

In the United States (U.S.), suicide is a critical public health issue. Suicide is the second leading cause of death among adolescents and young adults ages 10–34 years and the fourth leading cause of death among middle-age adults ages 35–54 years (Centers for Disease Control & Prevention, 2020). The rate of suicide death in the U.S. has steadily increased over the last two decades, with the largest increases observed among young and middle-age adults (Baker et al., 2013; Centers for Disease Control & Prevention, 2020; Sullivan et al., 2013). In 2018, the rate of suicide death reached 14.8 deaths per 100,000 population, contributing to nearly one million years of potential life lost (Centers for Disease Control & Prevention, 2020). Importantly, suicidal ideation (i.e., thinking about or planning suicide) and non-fatal suicide attempts are strong predictors of future suicidal behavior (i.e., ideation and attempts) and suicide death (Ribeiro et al., 2016). In 2018, nearly 11 million U.S. adults had serious thoughts of suicide and more than 4 million planned or attempted suicide (Substance Abuse & Mental Health Services Administration, 2018), underscoring the magnitude of this public health issue.

Increases in suicide deaths in the United States over the last two decades are part of a larger trend of increases in “deaths of despair,” or deaths due to drug overdose, alcohol-related diseases, and suicide (Case & Deaton, 2015; Stein et al., 2017). The “deaths of despair” framework holds that social and structural factors such as concentrated disadvantage and lack of opportunity are underlying causes of increases in “deaths of despair,” including suicide (Dasgupta et al., 2018). Indeed, several studies document increases in suicide deaths in areas characterized by greater economic distress, as measured by area-level income, unemployment, and educational attainment (Congdon, 2012; Fontanella et al., 2018; Kerr et al., 2017; Marco et al., 2018; Monnat, 2016), and in periods of economic downturn (Houle & Light, 2014; Norström & Gronqvist, 2015; Phillips & Nugent, 2014). At the individual-level, results from several studies indicate that lower income or living below the Federal Poverty Level are associated with an increased likelihood of suicide and suicidal behavior (Borges et al., 2008; Carvalho et al., 2016; Franklin et al., 2017).

### Material hardship as a risk factor for suicidal behavior

More recently, researchers have begun to examine the association of material hardship with suicide and suicidal behavior. Material hardships include difficulties meeting basic needs, such as food, housing, medical care, and utilities (Nelson, 2011), and represent tangible deprivations that may be experienced in the context limited income and resources. Notably, while income and material hardship are associated, they are only moderately correlated (Iceland & Bauman, 2007; Rodems & Shaefer, 2020; Sullivan et al., 2008). Research has found that that some individuals and families with low income do not report material hardship while some with income well above the Federal Poverty Level do report material hardship (Iceland & Bauman, 2007; Sullivan et al., 2008). This suggests that material hardship represents a unique facet of economic distress and a distinct stressor for individuals and families.

Studies examining associations of material hardship with suicide have found that food insecurity (Cabello et al., 2019; Davison et al., 2015; McIntyre et al., 2013; Nagata et al.,

2019) and housing instability (Forman-Hoffman et al., 2018; Fowler et al., 2015; Glasheen & Forman-Hoffman, 2015; Tsai & Cao, 2019) are associated with an increased likelihood of suicide and suicidal behavior. For example, in a nationally representative sample of young adults, difficulty affording food in the past 12 months was associated with an increased likelihood of suicidal ideation in the past 12 months (Nagata et al., 2019). Data from the 2008–2012 National Survey on Drug Use and Health showed that housing instability, defined three or more moves in the past year, was associated with an increased likelihood of past year suicidal ideation, suicide plans, and suicide attempts among adults with and without major depression (Glasheen & Forman-Hoffman, 2015). Similarly, data from the National Epidemiological Survey of Alcohol and Related Conditions-III demonstrated an association of lifetime homelessness with lifetime suicide attempts (Tsai & Cao, 2019). While this body of literature clearly demonstrates an association of specific types of material hardship with suicidal behavior, many of the existing studies were unable to establish temporality between measures of material hardship and suicidal behavior. Understanding whether prior material hardships are associated with an increased likelihood of suicidal behavior is key to identifying whether interventions to reduce the burden of material hardships may be an effective suicide prevention strategy. In addition, most studies focused on single types of material hardship, namely food insecurity and housing instability, and have not examined the potential impact of concurrent experiences of multiple hardships on suicide and suicidal behavior. It is plausible that the accumulating stress of multiple material hardships may increase risk for suicide and suicidal behavior.

### **Material hardship and suicidal behavior among parents**

Specific populations are more likely to experience material hardship compared to others. Prior research and national estimates indicate that the prevalence of material hardship is higher among households with children compared to households with no children. Data from the U.S. Department of Agriculture (UDSA) show that in 2018, 14% of households with children experienced food insecurity compared to 10% of households without children (United States Department of Agriculture, 2020). According to the Department of Housing and Urban Development (HUD), families with children make up the largest proportion of “worst case needs” household types, defined as severe rent burden (i.e., >50% of household income on rent and utilities) or severely inadequate housing (e.g., leaks, holes in the floor, no hot water, and broken heating), comprising 36% of “worst case needs” households in 2015 (Watson, 2017). Recent research also indicates that households with children are more likely to experience eviction compared to households without children (Desmond et al., 2013). Moreover, data from the Survey of Income and Program Participation (SIPP) show that more than one-third of U.S. children live in households with at least one material hardship, including food insecurity, inability to pay essential bills, inability to access medical care, and substandard housing, compared to 28% of adults ages 18–64 years and 14% of adults 65 years and older (Rodems & Shaefer, 2020). Overall, these estimates underscore the burden of material hardship in households with children.

In addition to being more likely to experience material hardship, parents (i.e., adults with children in the household) are more likely to experience suicidal behavior compared to non-parents. While results from some studies suggest that having children may be protective

against suicide death (Andrés et al., 2010; Denney, 2010; Frey & Cerel, 2015; Neeleman et al., 2004; Qin & Mortensen, 2003), other studies indicate that parents have a higher prevalence of suicidal behavior compared to non-parents (Borges et al., 2008; Kessler et al., 1999). Specifically, data from the National Comorbidity Survey show that parents have a higher likelihood of suicidal ideation compared to non-parents (Kessler et al., 1999). In a follow-up to this survey, parents of children 0–12 years had a higher likelihood of suicidal ideation and parents of children 5–12 years had a higher likelihood of suicidal gestures and attempts compared to non-parents (Borges et al., 2008). Additional qualitative research indicates that parenthood can be a risk factor for suicidal behavior, particularly among parents experiencing multiple stressors (Cerel et al., 2016). Thus, it is possible that associations between material hardship and suicidal behaviors differ for parents and non-parents given that parents are more likely to experience both material hardship and suicidal behavior. However, to the best of our knowledge, this has not been explicitly examined in the empirical literature.

We sought to add to the evidence base regarding the association of material hardship with suicidal behavior by examining the temporal association of accumulating material hardships with suicidal behavior among parents and non-parents. Specifically, the aims of this study were to (a) examine the association of experiences of one or multiple material hardships with suicidal behavior using data from a longitudinal, nationally representative sample and (b) assess whether associations differed for parents and non-parents.

## METHODS

### Data source

We used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a prospective study of a nationally representative sample of U.S. adolescents in grades 7–12 during the 1994–1995 academic year (Wave I). A stratified random sample of 80 U.S. high schools and 52 middle schools was selected with probability of selection proportional to school size and stratification with respect to region of country, urbanicity, school size and type, and ethnic composition. From selected schools, a core sample of students was randomly selected with stratification by grade level and sex and over-sampling based on ethnicity, genetic relatedness, adoption status, and disability. In total, 79% of selected students consented to complete the Wave I interview ( $N = 20,745$ ). Follow-up interviews with participants were conducted in 1996 (Wave II;  $N = 14,738$  participants in grades 8–12), 2001–2002 (Wave III;  $N = 15,197$  participants 18–26 years), 2008 (Wave IV;  $N = 15,701$  participants 24–32 years), and 2016–2018 (Wave V;  $N = 12,300$  participants ages 34–42 years). Response rates ranged from 77%–80% at each wave. We used data from Waves IV and V and restricted analyses to participants with valid sampling weights and strata ( $N = 10,685$ ).

### Measures

**Material hardship**—At Wave IV, participants were asked whether, in the past 12 months, there was a time when they (a) did not pay the full amount of the rent or mortgage because they did not have enough money; (b) were evicted from their house or apartment for not



(Greenland et al., 1999). DAGs are graphical depictions of associations among variables with associations based on existing empirical evidence, theoretical expectations, and subject matter expertise (Austin et al., 2019). DAGs can be formally analyzed to identify potential confounders (i.e., common causes of both the exposure and outcome) in associations of interest (Austin et al., 2019; Greenland et al., 1999). Based on our DAG (Figure S1), we included participant sex, race/ethnicity, married or cohabitating status, parenting status, substance use disorder diagnoses, depression diagnoses, and prior suicidal behavior as covariates in multivariable models to adjust for potential confounding. Covariates were based on participant report at Wave IV, with the exception of race/ethnicity which was based on participant report at Wave V as participant race/ethnicity at Wave IV was based on interviewer observation. Details regarding measures of each covariate are included in Table S1.

### Statistical analysis

We compared demographics, covariates, and parenting status among participants who reported suicidal behavior to those who reported no suicidal behavior using chi-square tests for categorical variables and *t*-tests for continuous variables. We also compared types of material hardship among parents and non-parents using chi-square tests. To examine the association of material hardship at Wave IV with suicidal behavior at Wave V, we conducted logistic regression to calculate odds ratios (ORs) and 95% confidence intervals (CIs). Under the rare disease assumption (i.e., <10% prevalence of the outcome in the population), the odds ratio approximates the risk ratio (Persoskie & Ferrer, 2017). Given that 7.5% of the total study population reported suicidal behaviors, the rare disease assumption was met, and our odds ratios approximate risk ratios and do not over-inflate the magnitude of associations (Persoskie & Ferrer, 2017). To assess whether associations differed by parenting status, we conducted logistic regression separately for parents and non-parents. We further conducted sensitivity analyses among non-parents to assess whether associations differed for non-parents who reported a biological child at Wave V (i.e., became a parent between Waves IV and V) and non-parents who did not report a biological child at Wave V.

Analyses were conducted in SAS 9.4 and accounted for the complex sampling design of Add Health. This study was reviewed and determined to be exempt by the Institutional Review Board at the University of North Carolina at Chapel Hill.

## RESULTS

Overall, 7.5% of participants reported suicidal behavior at Wave V. Participants who reported suicidal behavior were more likely to have lower household income (32.2% vs. 19.9% household income <\$30,000), lower educational attainment (19.8% vs. 15.4% completed high school only), no marital or cohabitating partner (47.4% vs. 37.1%), lifetime diagnoses for substance use disorders (44.7% vs. 33.6%), lifetime diagnoses for depression (39.4% vs. 14.7%), and prior suicidal behavior (29.0% vs. 5.7%) compared to those who did not report suicidal behavior (Table 1). Those who reported suicidal behavior were also more likely to report one material hardship (31.1% vs. 21.9%) and two or more material hardships (25.7% vs. 15.4%) compared to those who did not report suicidal behavior. The

proportion of participants who were parents was similar among those who did and did not report suicidal behavior (46.8% vs. 49.3%). Of note, among parents, the average number of children in the household was 1.9, and the average child age was 5.1 years.

In total, 38.8% of participants reported material hardship at Wave IV. Compared to non-parents, parents were more likely to report two or more material hardships (22.0% vs. 10.6%; Table 2). In terms of specific types of material hardship, parents were more likely to report difficulties paying utilities (19.9% vs. 8.9%), having utilities shut off (6.0% vs. 3.4%), having phone service discontinued (11.5% vs. 4.6%), difficulties paying rent or mortgage (13.0% vs. 4.8%), and difficulties affording food (15.6% vs. 7.6%) compared to non-parents.

In the total sample, prior experiences of one material hardship (OR = 1.57, 95% CI 1.20, 2.06) and two or more material hardships (OR = 1.52, 95% CI 1.04, 2.21) were each associated with an increased likelihood of past 12 month suicidal behavior (Table 3) compared to no prior experience of material hardship. Among parents, prior experiences of two or more material hardships (OR = 1.86, 95% CI 1.17, 2.94) were associated with an increased likelihood of suicidal behavior compared to no material hardship. Among non-parents, prior experiences of one material hardship (OR = 1.81, 95% CI 1.26, 2.59) was associated with an increased likelihood of suicidal behavior compared to no material hardship. In sensitivity analyses, results were similar for non-parents who did and did not become a parent between Waves IV and V (Table S2).

## DISCUSSION

In a nationally representative, longitudinal sample, we examined the association of material hardship with suicidal behavior among U.S. adults. This study builds on the extant literature by examining the association of single and multiple material hardships with suicidal behavior, establishing temporality between measures of material hardship and suicidal behavior, and assessing for differences in observed associations among parents and non-parents, populations with differing risk for both material hardship and suicidal behavior.

Overall, 38.8% of participants reported material hardship at Wave IV and 7.5% reported suicidal ideation or attempts at Wave V. In contrast to results from other nationally representative samples, the prevalence of suicidal behavior did not differ between parents and non-parents (Borges et al., 2008; Kessler et al., 1999). However, these prior estimates are based on older data and may not reflect the current context. Consistent with prior studies, the prevalence of material hardship was substantially higher among parents compared to non-parents (Neckerman et al., 2016; Rodems & Shaefer, 2020). Notably, while the prevalence of one material hardship was similar among parents and non-parents, parents were more likely to have multiple material hardships compared to non-parents, with 22.0% of parents compared to 10.6% of non-parents reporting two or more material hardships. This suggests that material hardships may be more likely to accumulate in households with children compared to households with no children. Importantly, prior research indicates that experiencing one material hardship may precipitate another (King, 2018) and that cumulative experiences of material hardship increase over time (Heflin, 2006). For example, falling behind on rent or mortgage may result in additional fees, which may contribute

to future difficulties affording utilities or food. For households with children and greater overall demands on resources, it may be more difficult to prevent one material hardship from escalating into multiple material hardships.

In the total sample, experiencing one and two or more material hardships were each associated with an increased likelihood of suicidal behavior compared to experiencing no material hardship, after adjusting for multiple potential confounders including substance use disorders, depression, and prior suicidal behavior. These results align with previous research demonstrating associations of food insecurity and housing instability with suicidal behavior (Glasheen & Forman-Hoffman, 2015; Nagata et al., 2019; Tsai & Cao, 2019) and indicate that experiences of both single and multiple material hardships may contribute to an increased risk for future suicidal ideation and attempts. However, we observed differences in results for parents and non-parents.

Among parents, experiencing two or more material hardships, but not one material hardship, was associated with an increased likelihood of suicidal behavior. In contrast, among non-parents, experiencing one material hardship, but not two or more, was associated with an increased likelihood of suicidal behavior. These differing results may be related to the differing prevalence of multiple material hardships among parents and non-parents. In particular, among non-parents, a small number reported both two or more material hardships and suicidal behavior ( $N = 62$ ). This may account for the non-significant association of two or more material hardships with suicidal behavior among non-parents. It may also be that parents, due to the physical and emotional demands associated with caring for children, are already accustomed to a baseline level of stress, such that one material hardship does not elevate risk for suicidal behavior. All parents experience some degree of stress (Deater-Deckard, 2008), and prior research demonstrates the specific role of accumulating stressors in eliciting high levels of distress among parents (Crnic et al., 2005; Crnic & Greenberg, 1990). In addition, parents are more likely than non-parents to be eligible for some safety net programs that address material hardship, such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Medicaid, which may help to reduce the risk of suicidal behavior in the context of a single material hardship. These factors may account for the non-significant association of one material hardship with suicidal behavior among parents.

Among parents, caring for children in the context of multiple material hardships may be particularly stressful. Prior research has found that experiences of material hardship contribute to increases in parenting stress (Conger & Donnellan, 2007; Desmond & Kimbro, 2015; Gershoff et al., 2007; Huang et al., 2010) and depression (Ashiabi & O'Neal, 2007; Austin & Smith, 2017; Heflin & Iceland, 2009; Sandel et al., 2018). Additional qualitative research indicates that accumulating stressors can act as an impetus for suicide attempts among parents (Cerel et al., 2016). Multiple material hardships, in addition to the daily tasks and demands associated with parenting, may exert a high level of stress and pressure on parents, contributing to an increased risk for suicidal behavior. Importantly, prior research demonstrates negative implications of both material hardship (Ashiabi & O'Neal, 2007; Gershoff et al., 2007; Zilanawala & Pilkauskas, 2012) and parental suicidality (Brakenhoff et al., 2018; Lieb et al., 2005; Noorlander et al., 2008) for child health and development.

Thus, addressing material hardship and its potential impacts on parental suicidal behavior is important for both parent and child wellbeing.

### **Implications for programs and policy**

As a risk factor for suicidal behavior, material hardship can be addressed through programmatic and policy intervention. Programs and policies at the state and federal level have the potential to reach large segments of the population and thus may have the greatest impact on reducing material hardship and preventing suicidal behavior. Prior research has found that policies that increase household income, including state increases in minimum wage (Gertner et al., 2019) and Earned Income Tax credit benefits (Lenhart, 2019), are associated with reduced rates of suicide deaths, lending support for this strategy. Given that income alone does not capture the full extent of economic distress among individuals and families (Iceland & Bauman, 2007; Rodems & Shaefer, 2020; Sullivan et al., 2008), it may also be pertinent for suicide prevention efforts to focus on programs and policies that specifically reduce the burden of material hardship, particularly among parents and households with children. Broadening eligibility criteria for and enhancing the benefits associated with safety net programs that address material hardship, such as the Supplemental Nutrition Assistance Program (SNAP), WIC, Section 8 housing vouchers, rent and utility subsidies, and Medicaid, may be effective in alleviating material hardships and reducing suicidal behaviors and subsequent suicide deaths among U.S. adults. To inform the effectiveness of such programs and policies as a suicide prevention strategy, future research is needed to examine the impact of these programs on suicidal behavior and suicide death, both among parents and non-parents.

### **Limitations**

Results from this study should be interpreted in the context of several limitations. First, Add Health data are based on self-report and are subject to social desirability and recall bias. Specifically, participants may have underreported experiences of material hardship and suicidal ideation and attempts due to potential stigma. The extent of this underreporting may be greater among parents compared to non-parents due to fear being viewed as an unfit caregiver. Thus, our results may represent an underestimate of these issues among U.S. adults, particularly parents. Second, measures of material hardship were not included at Wave V of Add Health. Thus, we were unable to examine persistent material hardship (i.e., material hardship at both Waves IV and V) and potential differential associations of persistent compared to intermittent material hardship with suicidal behavior. Third, there is potential for selection bias due to systematic differences between Wave I Add Health participants who did and did not participate at Waves IV and V. Importantly, prior research regarding selection bias due to non-response in Add Health has found that such bias is small (Brownstein et al., 2020). However, adult participants experiencing material hardship, particularly those who were experiencing housing instability and those with phone or internet service disconnected, may have been more difficult to reach and less likely to respond at Waves IV and V. If participants experiencing material hardship were less likely to respond, and these participants were also more likely to experience suicidal behavior, our results would be biased toward the null, underestimating the association of material hardship with suicidal behavior.

## CONCLUSIONS

Results from this study demonstrate material hardship as a potential risk factor for suicidal behavior among U.S. adults. Additionally, the results indicate that experiences of multiple material hardships are more common among parents with children in the household compared to non-parents and that such experiences of multiple material hardships are associated with an increased likelihood of suicidal behavior among parents. Both preventing material hardship and mitigating existing material hardships through programmatic and policy intervention at the population-level may be effective strategies for suicide prevention.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Characteristics of adults with and without suicidal behavior at Wave V, National Longitudinal Study of Adolescent to Adult Health (N = 10,153)

TABLE 1

|  | Suicidal behaviors <sup>a</sup> (N = 742) |                   | No suicidal behaviors <sup>d</sup> (N = 9736) |                   | $\chi^2$ | p-value |
|--|---|-------------------|---|-------------------|----------|---------|
|  | N or mean                                 | % (95% CI)        | N or mean                                     | % (95% CI)        |          |         |
| Age <sup>b</sup>                             | 28.0                                      | (27.7, 28.3)      | 28.4  | (28.1, 28.6)      |          | 0.9377  |
| Sex <sup>b</sup>                             |   |                   |   |                   |          |         |
| Male   | 258                                       | 46.6 (41.3, 51.9) | 3787  | 47.9 (46.6, 49.2) |          | 0.6377  |
| Female                                       | 437                                       | 53.4 (48.1, 58.7) | 5480  | 52.1 (50.8, 53.5) |          |         |
| Race/ethnicity <sup>a</sup>                  |   |                   |   |                   |          |         |
| White, non-Hispanic                          | 404                                       | 66.5 (59.5, 73.5) | 5481  | 68.4 (62.7, 74.2) |          | 0.8485  |
| Black, non-Hispanic                          | 147                                       | 15.5 (10.8, 20.1) | 1695  | 14.1 (10.4, 17.8) |          |         |
| Other, non-Hispanic                          | 50  | 5.7 (2.8, 8.5)    | 699   | 5.2 (3.4, 7.0)    |          |         |
| Hispanic                                     | 88  | 12.4 (7.8, 17.0)  | 1350  | 12.3 (8.8, 15.8)  |          |         |
| Household income <sup>b</sup>                |   |                   |   |                   |          |         |
| <\$30,000                                    | 185                                       | 32.2 (27.0, 37.4) | 1592  | 19.9 (18.1, 21.7) |          | <0.0001 |
| \$30,000–\$74,999                            | 312                                       | 45.1 (40.0, 50.1) | 4195  | 48.6 (47.0, 50.2) |          |         |
| \$75,000                                     | 153                                       | 22.7 (18.5, 27.0) | 2986  | 31.5 (29.3, 33.7) |          |         |
| Education <sup>b</sup>                       |   |                   |   |                   |          |         |
| Less than high school                        | 60  | 9.9 (6.6, 13.2)   | 486   | 6.7 (5.6, 7.9)    |          | <0.0001 |
| Completed high school                        | 111                                       | 19.8 (15.2, 24.3) | 1269  | 15.4 (13.7, 17.1) |          |         |
| Some college or trade school                 | 350                                       | 50.5 (45.9, 56.0) | 3930  | 43.2 (41.1, 45.2) |          |         |
| Completed college or more                    | 173                                       | 19.8 (14.6, 25.1) | 3580  | 34.7 (31.3, 38.1) |          |         |
| Married or cohabitating partner <sup>b</sup> |   |                   |   |                   |          |         |
| No   | 313                                       | 47.4 (42.4, 52.4) | 3474  | 37.1 (34.9, 39.3) |          | <0.0001 |
| Yes  | 382                                       | 52.6 (47.6, 57.6) | 5793  | 62.9 (60.7, 65.1) |          |         |
| Lifetime substance use disorder <sup>b</sup> |   |                   |   |                   |          |         |
| No   | 402                                       | 55.3 (50.2, 60.4) | 6429  | 66.4 (64.4, 68.3) |          | <0.0001 |
| Yes  | 293                                       | 44.7 (39.6, 49.8) | 2838  | 33.6 (31.7, 35.6) |          |         |

|  | Suicidal behaviors <sup>a</sup> (N = 742) |                   | No suicidal behaviors <sup>a</sup> (N = 9736) |                   | $\chi^2$<br>p-value |
|--|---|-------------------|---|-------------------|---------------------|
|  | N or mean                                 | % (95% CI)        | N or mean                                     | % (95% CI)        |                     |
| Lifetime depression diagnosis <sup>b</sup> |   |                   |   |                   |                     |
| No   | 438                                       | 60.6 (55.3, 65.8) | 7987  | 85.3 (83.9, 86.6) | <0.0001             |
| Yes  | 256                                       | 39.4 (34.2, 44.8) | 1279  | 14.7 (13.4, 16.1) |                     |
| Prior suicidal behaviors <sup>b</sup>      |   |                   |   |                   |                     |
| No   | 508                                       | 71.0 (65.9, 76.1) | 8784  | 94.3 (93.6, 95.0) | <0.0001             |
| Yes  | 181                                       | 29.0 (23.9, 34.1) | 477   | 5.7 (5.0, 6.4)    |                     |
| Material hardship <sup>b</sup>             |   |                   |   |                   |                     |
| No   | 299                                       | 43.1 (38.1, 48.1) | 6001  | 62.7 (60.8, 64.6) | <0.0001             |
| One  | 207                                       | 31.1 (25.8, 36.5) | 1928  | 21.9 (20.6, 23.1) |                     |
| Two or more <sup>b</sup>                   | 189                                       | 25.7 (20.7, 30.7) | 1337  | 15.4 (14.0, 16.8) |                     |
| Parent                                     |   |                   |   |                   |                     |
| No   | 351                                       | 53.2 (47.9, 58.6) | 4750  | 50.7 (47.8, 53.6) | 0.2947              |
| Yes  | 344                                       | 46.8 (41.4, 52.1) | 4517  | 49.3 (46.4, 52.2) |                     |

<sup>a</sup>Reported at Wave V.

<sup>b</sup>Reported at Wave IV.

Material hardships among parents and non-parents at Wave IV, National Longitudinal Study of Adolescent to Adult Health (N = 10,153)

TABLE 2

|                                    | Parents (N = 4970) |                   | Non-parents (N = 5183) |                   | $\chi^2$<br>p-value |
|------------------------------------|--------------------|-------------------|------------------------|-------------------|---------------------|
|                                    | N                  | % (95% CI)        | N                      | % (95% CI)        |                     |
| Material hardship                  |                    |                   |                        |                   |                     |
| No                                 | 2881               | 55.4 (53.0, 57.8) | 3532                   | 66.9 (64.8, 69.0) | <0.0001             |
| One                                | 1056               | 22.6 (20.7, 24.4) | 1123                   | 22.5 (20.8, 24.3) |                     |
| Two or more                        | 1033               | 22.0 (20.2, 23.8) | 527                    | 10.6 (9.1, 12.0)  |                     |
| Difficulty paying utilities        |                    |                   |                        |                   |                     |
| No                                 | 4025               | 80.1 (78.0, 82.3) | 4748                   | 91.1 (90.1, 92.2) | <0.0001             |
| Yes                                | 945                | 19.9 (17.7, 22.0) | 427                    | 8.9 (7.8, 9.9)    |                     |
| Utilities shut off                 |                    |                   |                        |                   |                     |
| No                                 | 4685               | 94.0 (93.1, 95.0) | 5015                   | 96.5 (95.8, 97.3) | <0.0001             |
| Yes                                | 285                | 6.0 (5.0, 6.9)    | 164                    | 3.4 (2.7, 4.2)    |                     |
| Phone service discontinued         |                    |                   |                        |                   |                     |
| No                                 | 4421               | 88.5 (87.3, 89.8) | 4949                   | 95.3 (94.4, 96.2) | <0.0001             |
| Yes                                | 548                | 11.5 (10.2, 12.7) | 227                    | 4.7 (3.8, 5.6)    |                     |
| Evicted                            |                    |                   |                        |                   |                     |
| No                                 | 4927               | 99.1 (98.8, 99.4) | 5142                   | 98.9 (98.4, 99.4) | 0.4886              |
| Yes                                | 43                 | 0.9 (0.5, 1.2)    | 35                     | 1.1 (0.6, 1.6)    |                     |
| Difficulty paying rent or mortgage |                    |                   |                        |                   |                     |
| No                                 | 4397               | 87.0 (85.6, 88.4) | 4917                   | 95.2 (94.4, 96.0) | <0.0001             |
| Yes                                | 572                | 13.0 (11.6, 14.4) | 258                    | 4.8 (4.0, 5.6)    |                     |
| Difficulty paying for food         |                    |                   |                        |                   |                     |
| No                                 | 4273               | 84.4 (82.7, 86.2) | 4838                   | 92.4 (91.1, 93.6) | <0.0001             |
| Yes                                | 697                | 15.6 (13.8, 17.3) | 340                    | 7.6 (6.4, 8.9)    |                     |
| Forgone medical care               |                    |                   |                        |                   |                     |
| No                                 | 3815               | 75.6 (73.9, 77.4) | 3973                   | 75.6 (73.9, 77.4) | 0.9945              |
| Yes                                | 1154               | 24.4 (22.6, 26.1) | 1207                   | 24.4 (22.6, 26.1) |                     |

**TABLE 3**

Adjusted association of material hardship with suicidal behavior,<sup>a</sup> National Longitudinal Study of Adolescent to Adult Health (*N* = 10,153)

|                   | <u>Total sample</u><br>( <i>N</i> = 10,153) | <u>Parents</u> ( <i>N</i> = 4970) | <u>Non-parents</u><br>( <i>N</i> = 5183) |
|-------------------|---|-----------------------------------|--|
|                   | <b>OR<sup>b</sup></b> (95% CI)              | <b>OR<sup>c</sup></b> (95% CI)    | <b>OR<sup>c</sup></b> (95% CI)           |
| Material hardship |   |                                   |  |
| No                | 1.00  | 1.00                              | 1.00                                     |
| One               | 1.57 (1.20, 2.05)                           | 1.33 (0.87, 2.04)                 | 1.81 (1.26, 2.59)                        |
| Two or more       | 1.50 (1.03, 2.20)                           | 1.86 (1.17, 2.94)                 | 1.03 (0.56, 1.87)                        |

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup>Material hardship reported at Wave IV and suicidal behaviors reported at Wave V.

<sup>b</sup>Adjusted for sex, age, race/ethnicity, married or cohabitating partner, parenting status, household income, substance use disorder diagnoses, depression diagnoses, and prior suicidal behavior.

<sup>c</sup>Adjusted for sex, age, race/ethnicity, married or cohabitating partner, household income, substance use disorder diagnoses, depression diagnoses, and prior suicidal behavior.