The association of lifetime suicidal ideation with perceived parental love and family structure in childhood in a nationally representative adult sample

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1. Introduction

Suicide is the tenth leading cause of death in the United States (13.0 per 100,000 persons) as of 2013 and is a serious public health concern (Centers for Disease Control and Prevention, 2015; National Action Alliance for Suicide Prevention: Research Prioritization Task Force, 2014). An adverse or unsupportive family environment in childhood—including sexual abuse in the household, loss of caregivers, family conflicts, and poor communication between parents and children—is associated with risk for death by suicide, as well as non-fatal suicidal behaviors including suicide attempts and suicidal ideation (McLean et al., 2008; Wagner, 1997).

Perceived support from caregivers in the early stages of life is an aspect of family environment that is increasingly recognized as important for understanding lifetime non-fatal suicidal behaviors. Attachment theory proposes that insecure bonding with caregivers during childhood is associated with increased risk for various emotional and behavioral problems (Bowlby, 1958). Research has consistently found that perceived lack of support from caregivers in early childhood is associated with reduced well-being, as well as emotional and behavioral problems including depression, anxiety, opposition, aggression, delinquency and drinking problems (Barnes and Farrell, 1992; Branje et al., 2010; Caldwell et al., 2004; McCarty et al., 2005; Meadows, 2011; Raja et al., 1992). A growing literature also indicates that perceived insecure bonding with caregivers during childhood is an important correlate of lifetime non-fatal suicidal behaviors, including suicidal ideation and suicide attempts (Adam et al., 1994; Dale et al., 2010; Johnstone et al., 2015; Saffer et al., 2015; Wong et al., 2002).

It is not well understood, however, whether the relationship between perceived support from caregivers during childhood and lifetime non-fatal suicidal behaviors holds regardless of family structure. Children in the United States are increasingly likely to be raised in a household that does not include both biological parents. As of 2013, less than half (46%) of children (<18 years old) in the United States lived with two biological parents, as compared with 61% of children in 1980 (U.S. Census Bureau, 2013). Patten et al. (1997) found that the relationship between perceived support from caregivers and depressive symptoms did not differ in...
children in two-parent families versus those in single-parent families. No studies to date, however, have examined the relationship between perceived support from caregivers in childhood and lifetime non-fatal suicidal behaviors while accounting for different family structures. It is important to focus on lifetime non-fatal suicidal behaviors separately from other mental health outcomes, such as depressive symptoms, because it has been recognized that not all people with non-fatal suicidal behavior problems have mental disorders, despite the strong correlation between mental disorders and non-fatal suicidal behaviors (Leenaars, 2004).

The aims of this study were to examine the associations between perceived support from caregivers in childhood and lifetime non-fatal suicidal behaviors while adjusting for potential confounding factors and to test whether the associations hold regardless of family structure. In this study, we used nationally representative, cross-sectional data from the National Comorbidity Survey Replication (NCS-R) to examine the relationship between perceived support from caregivers and lifetime suicidal ideation while accounting for family structure during childhood. We used “perceived love from caregivers in childhood” as a proxy of perceived support from caregivers during childhood. In this study, we used lifetime suicidal ideation as a measure of non-fatal suicidal behavior because of the limited number of cases of suicide attempts in the NCS-R. The cross-sectional nature of the NCS-R did not allow us to include suicide deaths in the study. We examined the association between perceived love from caregivers in childhood and lifetime suicidal ideation. We also examined whether the association between perceived love from caregivers in childhood and lifetime suicidal ideation differed based on whether or not study participants had been raised in a household with both biological parents. We hypothesized that perceived love from caregivers in childhood would be negatively associated with lifetime suicidal ideation regardless of family structure.

2. Method

2.1. Study sample

The cross-sectional sample was drawn from the National Comorbidity Survey Replication (NCS-R) conducted with a sample of 9,282 nationally representative citizens in the United States aged 18 years and older. The NCS-R was carried out ten years after the National Comorbidity Survey (NCS), which was conducted between 1990 and 1992 (Harvard Medical School, 2005). The goal of the NCS-R was to study trends in various psychiatric disorders since the NCS (Kessler and Merikangas, 2004). The NCS-R was administered between 2001 and 2003 and had a response rate of 70.9%. The data were weighted to adjust for differential within-household probability of selection and non-response and to approximate the distribution of the 2000 U.S. Census on a range of sociodemographic characteristics (Kessler et al., 2004). The NCS-R interview consists of two parts. Part I was administered to all the study participants (N=9282) to assess the existence of core mental disorders. Part II was administered to 5692 study participants to assess correlates of core mental disorders. Since the present study involves variables assessed in Part II (e.g., household income), the total sample size for this study was 5692. As 18% of the sample was missing observations, we used multiple imputation techniques with the ice command in STATA, version 13 to impute missing observations. Five imputations were generated, using the chained equation models including both dependent and independent variables we will describe below (Royston, 2005). Standard errors were estimated using Rubin’s Formula to take into account within and between variations across five imputed datasets (Rubin, 1987).

2.2. Measures

The outcome measure in this study was the presence of lifetime suicide ideation. It was assessed by asking, “Have you ever seriously thought about committing suicide?” We coded the variable of suicide ideation 1 if the response to this question was yes and 0 if the response was no.

A main explanatory variable of interest, perception of parental love, was assessed by an item asking, “How much love did the woman who spent most time raising you, give you?” The same question was repeated for the man who spent most time raising a study participant. The answers were scored on a 4-point scale, “a lot” (1), “some” (2), “a little” (3), and “not at all” (4). The dichotomized variable was created by rating 1 for those who responded they received a lot or some love from at least one of their caregivers and 0 for those who responded they received a little or no love from both of their caregivers.

Family structure was assessed by a question asking “Did you live with both of your biological parents up until you were sixteen?” The dichotomized variable was created by rating 1 for those who responded they lived with both of their biological parents in childhood and 0 for those who responded they did not live with both of their biological parents in childhood.

Covariates in this study included lifetime mental disorders, presence of prolonged sadness experienced by participants’ caregivers during childhood and sociodemographic characteristics at the time of the survey. Lifetime mental disorders were operationalized as the presence of at least one of the following mental disorders over the respondent’s lifetime: bipolar disorder (type I and type II), dysthymia, hypomania, major depressive disorder, major depressive episode, adult separation anxiety disorder, agoraphobia, general anxiety disorder, panic attack, PTSD, social phobia, specific phobia, alcohol abuse, alcohol dependence, drug abuse, drug dependence and nicotine dependence. The dichotomized variable was created by rating 1 for those who responded they had at least one of these lifetime mental disorders and 0 for those who responded they did not have any of these lifetime mental disorders.

Presence of prolonged sadness experienced by study participants’ caregivers during childhood was assessed by a question asking “During the years you were growing up, did the women who raised you ever have periods lasting 2 weeks or more where she was sad or depressed most of the time?” The same question was repeated for the man who spent most time raising a study participant. The dichotomized variable was created by rating 1 for those who responded at least one of their caregivers experienced prolonged sadness and 0 for those who responded none of their caregivers experienced prolonged sadness.

Sociodemographic variables in this study included: (1) gender, (2) age group (15–24, 25–34, 35–44, 45–54, > 54), (3) race (White, African American, Hispanic, and all other), 4) educational attainment (less than 12 years, 12 years, 13 to 15 years, and 16 years or more), (5) marital status (married, divorced/separated/widowed, and never married) (6) yearly household income (less than $20,000, between $20,000 and $34,999, between $35,000 and $69,999, and more than $70,000), and (7) importance of religious beliefs (very/somewhat important and not very/not at all important).

2.3. Data analysis

We compared lifetime prevalence of suicidal ideation between those who perceived a lot or some love and those who perceived little or no love from caregivers in childhood, as well as between those who lived with both biological parents and those who did not live with both biological parents in childhood. We conducted a
contingency table analysis and calculated Rao–Scott F adjusted chi-square statistics to examine if there was a statistically significant difference in the lifetime prevalence of suicidal ideation between those who perceived love from caregivers in childhood and those who did not (Rao and Scott, 1981). The command “svytab” with option “Pearson” in STATA 13 was used to calculate Rao–Scott F adjusted chi-square statistics since it provides more conservative estimates as compared with Wald chi-square especially for complex survey data such as the NCS-R. We conducted multivariable logistic regression analyses, adjusting for lifetime mental disorders, presence of prolonged sadness experienced by participants’ caregivers during childhood and sociodemographic characteristics, to explore the association of lifetime suicidal ideation with perceived love from caregivers. We conducted the adjusted regression analyses separately for those who lived with two biological parents in childhood and for those who did not. All analyses were conducted by using the statistical software package Stata, version 13, using the svy commands, which take into account the survey weights, clustering, and stratification of the data. A p-value < 0.05 was used to determine statistical significance. All reported percentages are weighted.

3. Results

3.1. Descriptive analyses

Table 1 compares characteristics of participants by family structure. The percentage of those who perceived a lot of or some love from caregivers was significantly higher among those who lived with both biological parents until age 16 as compared with those who did not (95.8% versus 92.8%, p < 0.001). There were statistically significant differences in all the characteristics except for sex between those who lived with both biological parents until age 16 and those who did not. Those who lived with both biological parents until age 16 were less likely to have lifetime suicidal ideation, older, more likely to be white, had higher educational attainment, were more likely to be married, had higher income, were more likely to consider that religious beliefs were important, and were less likely to have lifetime mental disorders and to report prolonged sadness of caregivers during childhood.

Table 2 shows the prevalence of lifetime suicidal ideation comparing those who perceived love from caregivers in childhood and those who did not; these associations are also presented when stratifying by family structure. On average, the prevalence of lifetime suicidal ideation was lower for those who perceived love from caregivers during childhood and sociodemographic characteristics, to explore the association of lifetime suicidal ideation with perceived love from caregivers during childhood and sociodemographic characteristics. The association between perceived love from caregivers during childhood and lifetime suicidal ideation held regardless of whether participants had been raised in a household with both biological parents or not (42% versus 43% respectively).

For those who lived with two biological parents in childhood, older than 54 years old, 12 years of educational attainment, more than $70,000 yearly household income, and religious beliefs were associated with lower odds of lifetime suicidal ideation, while lifetime mental disorders and prolonged sadness of caregivers during childhood were associated with higher odds of lifetime suicidal ideation. For those who did not live with two biological parents in childhood, male gender was associated with lower odds of lifetime suicidal ideation while never married, and lifetime

3.2. Regression analyses

Table 3 presents results from multivariable logistic regression models. Those who perceived love from caregivers during childhood had 44% lower odds of lifetime suicide ideation as compared with those who did not perceive love from caregivers, after adjusting for lifetime mental disorders, presence of prolonged sadness of study participants’ caregivers and socioeconomic characteristics. The association between perceived love from caregivers during childhood and lifetime suicidal ideation held regardless of whether participants had been raised in a household with both biological parents or not (42% versus 43% respectively).

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Characteristics of study sample by family structure (N=4664).</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>With both biological parents.until age 16, N (%)</td>
</tr>
<tr>
<td>Perceived love</td>
<td>3,073 (95.8)</td>
</tr>
<tr>
<td>Lifetime suicide ideation Yes</td>
<td>671 (20.4)</td>
</tr>
<tr>
<td>Sex Female</td>
<td>1,872 (55.1)</td>
</tr>
<tr>
<td>Age 25–34</td>
<td>533 (34.7)</td>
</tr>
<tr>
<td>35–44</td>
<td>732 (22.3)</td>
</tr>
<tr>
<td>45–54</td>
<td>988 (27.1)</td>
</tr>
<tr>
<td>≥ 54</td>
<td>894 (27.3)</td>
</tr>
<tr>
<td>Race/ethnicity African American</td>
<td>242 (6.4)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>84 (3.1)</td>
</tr>
<tr>
<td>Other</td>
<td>303 (10.0)</td>
</tr>
<tr>
<td>Education 12 years</td>
<td>924 (30.8)</td>
</tr>
<tr>
<td>13–15 years</td>
<td>979 (29.1)</td>
</tr>
<tr>
<td>≥16 years</td>
<td>941 (27.2)</td>
</tr>
<tr>
<td>Marital status Never married</td>
<td>595 (21.6)</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>720 (20.9)</td>
</tr>
<tr>
<td>Religious beliefs Important</td>
<td>2,433 (76.2)</td>
</tr>
<tr>
<td>Lifetime mental disorders Yes</td>
<td>2,075 (62.9)</td>
</tr>
<tr>
<td>Parents’ sadness lasting 2+ weeks Yes</td>
<td>834 (25.9)</td>
</tr>
</tbody>
</table>

a All the percentages were weighted with the survey weight.

b Rao–Scott F adjusted chi-square statistics was calculated taking into account the NCS-R survey weight.

c At least one of the following disorders in lifetime: bipolar disorder (type I and type II), dysthymia, hypomania, major depressive disorder, major depressive episode, adult separation anxiety disorder, agoraphobia, general anxiety disorder, panic attack, PTSD, social phobia, specific phobia, alcohol abuse, alcohol dependence, drug abuse, drug dependence and nicotine dependence.

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mental disorders were associated with higher odds of lifetime suicidal ideation.

4. Discussion

This study evaluated the association between lifetime suicidal ideation and perceived love from caregivers in childhood by family structure, using a representative sample of adults in the United States from 2001 to 2003. Perceived love from caregivers in childhood had a significant inverse association with lifetime suicidal ideation regardless of whether or not respondents lived with two biological parents during childhood. Our results are consistent with the findings of Patten et al. (1997) showing that associations between perceived parental support and major depressive symptoms held both for those raised in two-parent families and those raised in single-parent families.

We also found, however, that those who did not live with both of their biological parents in childhood had higher prevalence of suicide ideation than those who did. As shown in Table 1, our results suggest that factors other than perception of parental love may differentiate lifetime suicidal ideation between those who lived with two biological parents and those who did not. For instance, economic hardship in single-parent households has been identified as an important correlate of reduced well-being in childhood (Thomson et al., 1994). For another example, the temperament of the child is known to be a factor that is associated with both child behavioral problems and the quality of child-parent relationship (Webster-Stratton and Eyberg, 1982).

The study had several limitations. First, cross-sectional analyses do not permit causal inferences, so we cannot conclude that perception of parental love in childhood causes lifetime suicidal ideation. It might be the case those who are currently having suicidal thoughts tend to recall their caregivers as less loving in retrospect of parental love in childhood causes lifetime suicidal ideation. This may be true for both types of suicidal ideation that we identified in our study as well as for other types of suicidal ideation that we did not identify.

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Studies have shown, however, that retrospective reports of adverse childhood events, such as emotional neglect and family discord, are sufficiently valid (Hardt and Rutter, 2004). Third, data on suicidal ideation among participants’ parents and aspects of socioeconomic status in childhood such as family income and parental education were not assessed, and failure to include these variables in our models might have biased our estimates. Fourth, detailed information about family structure (e.g., single-parent household, blended household) was not available. Fifth, measurement of our outcome and explanatory variables was limited in the association between perceived love from caregivers in childhood and lifetime suicidal ideation, stratifying by family structure and sociodemographic characteristics. Our findings suggest that, even without being raised in a household with both biological parents, high quality of support from caregivers is likely associated with lower lifetime suicidal ideation. Studies have found that parenting attitudes and caregivers’ actions toward children can be significantly improved through interventions, such as home visiting programs (Kendrick et al., 2000). Interventions targeting parental practices were also found to be effective both for biological parents and foster parents (Linares et al., 2006). Efforts to improve parent–child relationships might potentially be able to reduce lifetime suicidal ideation, regardless of family structure. However, there is still limited evidence that that interventions particularly focusing on affection and warmth of caregivers significantly improve emotional connectedness between children and caregivers and our results may not be applicable to different cultural settings (Lin and Fu, 1990).

Despite these limitations, this study is the first to investigate the association between perceived love from caregivers in childhood and lifetime suicidal ideation, stratifying by family structure and adjusting for lifetime mental disorders, presence of prolonged sadness experienced by participants’ caregivers during childhood and sociodemographic characteristics. Our findings suggest that, even without being raised in a household with both biological parents, high quality of support from caregivers is likely associated with lower lifetime suicidal ideation. Studies have found that parenting attitudes and caregivers’ actions toward children can be significantly improved through interventions, such as home visiting programs (Kendrick et al., 2000). Interventions targeting parental practices were also found to be effective both for biological parents and foster parents (Linares et al., 2006). Efforts to improve parent–child relationships might potentially be able to reduce lifetime suicidal ideation, regardless of family structure. However, there is still limited evidence that that interventions particularly focusing on affection and warmth of caregivers significantly improve emotional connectedness between children and caregivers...
(Kahn and Moore, 2010). Longitudinal studies are needed to establish more precise temporal linkages between perceived parental care and suicidal ideation, and trials assessing parenting interventions focusing on emotional connectedness between children and caregivers may contribute to this line of research by assessing offspring suicidal ideation at follow up points.

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Conflicts of interest

None.

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