Published in final edited form as:
Gen Hosp Psychiatry. 2009 ; 31(5): 484–493. doi:10.1016/j.genhosppsych.2009.06.002.

Association between family structure in childhood and lifetime depressive disorder in adulthood among a nationally representative sample of Blacks

Amelia R. Gavin[1,*], **David H. Chae**[2], and **David Takeuchi**[1]

[1]School of Social Work, University of Washington, Seattle, WA, USA

[2]Rollins School of Public Health, Emory University, Atlanta, GA, USA

Abstract

Objective—This study investigated whether there were associations between family structure in childhood and lifetime prevalence of major depressive disorder in adulthood in a representative national sample of 4918 Blacks in the United States. We explored whether the associations between family structure and depressive disorder differed based on four types of family structure: (1) the presence of both biological parents; (2) one biological parent and a non-biological parent; (3) one biological parent; and (4) neither biological parent.

Method—The data used were from the National Survey of American Life (NSAL).

Results—In the adjusted analysis, among all respondents, higher odds of major depressive disorder in adulthood were associated with growing up with one biological parent and a non-biological parent compared to those who grew up with both biological parents. In the analysis stratified by gender, only women who lived with one biological parent and a non-biological parent during childhood had an increased risk of depressive disorder in adulthood.

Conclusions—Growing up in a household with one biological parent and a non-biological parent was positively associated with depressive disorder in adulthood among Black women. Future studies should continue to explore the pathways linking family structure in childhood to the long-term consequences of depressive disorder.

1. Introduction

Over the past four decades, a profound change to the American family structure has been the decline in the number of children growing up in households with two biological parents [1]. Between 1960 and 2007, the number of children growing up in a household with a single biological parent increased from 8.0% to 22.5% [2]. Although these changes are evident in all families, the change is most dramatic among Black families. In 2007, the number of Black children who lived in a household with only one biological parent was 53.7% compared to 26.5% of Hispanic children and 20.5% of White children [2]. Underlying this trend are the higher non-marital childbearing rates, higher divorce rates, and lower remarriage rates among

*Address correspondence: Dr. Amelia R. Gavin, School of Social Work, University of Washington, 4101 15th Avenue NE, Seattle, WA 98105-6299, USA. Email: gavina@u.washington.edu.

Blacks compared to the general population. The net result is that Black children spend substantially more time in single-parent households than do White or Hispanic children [3].

Family structure and its effects on child well-being has been the focus of numerous studies because the two-parent biological family is still considered the optimal arrangement for children's development [1]. Research suggests that children who grow up in households with only one biological parent are more likely to experience a variety of cognitive, emotional, and behavioral problems compared to those with continuously married biological parents [4–6]. However, there is no consensus on whether all households with only one biological parent have deleterious effects on child well-being [5–6]. In fact, empirical research suggests that children living in stepfamilies [7–8] and households with cohabitating biological parents [9] also fare worse than children living in households with continuously married biological parents. In addition, children born out of wedlock and raised exclusively in households with only one biological parent, do as well or better than those with other living arrangement trajectories [5].

There has been a growing interest in the long-term effects of family structure in childhood on adult mental health outcomes. Previous research suggests an association between family structure (e.g., parental divorce) in childhood and risk of depression and depressive symptoms in adulthood [6,10–16]. Despite the large number of Black individuals who grow up in single-parent households, our understanding of the role that family structure plays in the occurrence of major depression in adulthood among Blacks is limited in the following ways. First, previous studies often have not specifically examined the association between family structure and depression among Blacks. This is largely a function of insufficient numbers of Blacks in survey data that result in pooled sample methods by which all racial groups are examined together. Although pooled sample analyses estimate outcomes fairly well, they may not allow subtle and significant differences to be made between Blacks and other racial/ethnic groups and therefore meaningful conclusions cannot be drawn based on race/ethnicity [6].

Second, in previous studies, family structure is often narrowly defined, considering only primary family members. In reality, many individuals grow up in households in the presence of a wide array of adults [17]. Although Blacks compared to other racial groups have the highest rates of marital disruption and non-marital births, few studies examine whether different types of family structure in childhood are linked to major depressive disorder among Blacks in adulthood.

Third, previous studies often employed scales of psychological distress and depressive symptoms (e.g., Brief Symptom Inventory, Centers for Epidemiologic Study of Depression, Langner Symptom Survey) rather than diagnostic tools based on *DSM* criteria for depressive disorder. Although some posit that symptom scales are substitutes for diagnostic tools [18], there are actual measurement differences between scales and diagnostic tools. Most importantly, diagnostic instruments are designed to distinguish between cases versus non-cases. According to Downey and Coyne [19] most clinically depressed individuals have scores in the depressed range on symptom scales. However, relatively few individuals from community-based samples who report scores in the depressed range meet diagnostic criteria for clinical depression. In addition, the social correlates associated with symptom scales differ from those generated from diagnostic tools [20]. For example, some have posited that symptom scales, rather than capture clinical diagnoses, capture aspects of demoralization that are more likely to be reported by low socioeconomic status individuals [21]. Furthermore, diagnostic tools, unlike symptom scales, capture the severity and persistence associated with psychiatric disorders. Research suggests that symptom scales, in the case of assessing only symptoms of one specific psychiatric disorder, are better at assessing mild versus severe forms of psychiatric illness [22–23]. Considering these research findings, it is clear that diagnostic instruments

capture qualitatively different phenomena than symptom scales. In light of these differences and to further our understanding of the role that family structure plays in the occurrence of depressive disorder among Blacks, it is vital that diagnostic instruments be employed to assess depressive disorder.

To our knowledge, there are no published studies that evaluate the association between family structure and the diagnostic criteria for depressive disorder among a nationally-representative sample of Blacks. It is important to address this gap because such information may potentially aid in the further identification of culturally-relevant correlates of depressive disorder among Blacks, a group overrepresented among those with very severe impairment due to depressive disorder and low treatment rates [24]. In the present study, we expand previous studies' definitions of family structure to include more dimensions beyond single-parent and two-parent households. Secondly, a clinical diagnostic tool is used to assess major depressive disorder using *DSM-IV* diagnostic criteria. Third, the association between family structure and major depressive disorder is assessed in a nationally-representative sample of Blacks that includes a substantial number of Blacks of Caribbean ancestry.

2. Methods

2.1 Sampling Design

Data from the National Study of American Life (NSAL) were used in the present study. The NSAL was part of the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys initiative that included three national surveys of Americans' mental health: the NSAL [25], the National Comorbidity Survey Replication NCS-R [26], and the National Latino and Asian American Study of Mental Health (NLAAS) [27]. Data collection was conducted by the Survey Research Center of the Institute for Social Research at the University of Michigan. The NSAL had a household probability sample of 3570 Blacks of non-Caribbean descent, 1621 Blacks of Caribbean ancestry, and 891 non-Hispanic Whites aged 18 years and older. The total sample size for the NSAL is 6082. Caribbean Blacks are persons who self-identified as Black and indicated that they were of West Indian or Caribbean ancestry, that they were from a country included on a list of Caribbean countries presented by the interviewers, or that their parents or grandparents were born in a Caribbean country [28]. Participants were recruited using two sampling methods: (1) core sampling based on multistage stratified area probability designs, resulting in nationally representative household samples; and (2) high-density (> 10%) supplemental sampling to over-sample Census block groups for the target ancestry group (Caribbean Black). Weighting corrections were constructed to take into account joint probabilities of selection under the different components of the sampling design [29].

In the present study, only Blacks of non-Caribbean descent were included in the analysis. The decision to exclude Caribbean Blacks from the analysis was based on the following considerations. First, the small number of Blacks of Caribbean descent who reported lifetime depressive disorder resulted in power estimation problems. Second, previous research has shown the two groups to be distinct in lifetime prevalence of depressive disorder (Williams et al., 2007; Archives of Gen. Psych[24]). In addition, the sex difference in lifetime prevalence of depressive disorder varies by group (Williams et al., 2007: Archives of Gen Psych[24]), and the presence of group differences in indicators of socioeconomic status, such as family income and educational attainment [30–32].

2.2 Procedures

The NSAL interviews were conducted in English and administered face-to-face using a computer-assisted instrument and by telephone. NSAL surveys were conducted between

February, 2001 and June, 2003. Written informed consent was obtained for all participants and study procedures and protocols were approved by the Internal Review Board of the University of Michigan [24]. The overall final response rate for the NSAL was 70.7% for Blacks of non-Caribbean descent.

2.3 Measures

The outcome of interest in our study was meeting the lifetime prevalence of major depressive disorder measured by the diagnostic interview of the World Mental Health Initiative version of the Composite International Diagnostic Interview (WMH-CIDI) [33], a fully structured diagnostic instrument based on criteria of the *DSM-IV* [34]. Previous studies have shown there are consistent similarities in the core features of major depressive disorder across racial-ethnic groups [35–36]. To date, clinical reappraisal interviews have been carried out in conjunction with the NSAL. The Structured Clinical Interview of *DSM-IV* (SCID), [37] a diagnostic interview that requires clinical expertise to administer, was used in the reappraisal studies. Since the SCID does not contain a diagnosis for mania, it cannot be used to generate diagnoses for major depressive disorder. However, it can be used to diagnose major depressive episode (MDE). For example, in the NSAL, a comparison of the CIDI and the SCID for 12-month prevalence of MDE revealed fair concordance for Blacks of non-Caribbean descent [24].

Family structure—Family structure was assessed by respondents' answers to questions about who raised the respondent the majority of the time until the age of 16. In the present analyses, family structure included four categories: (1) households with both biological parents included those who were raised with a biological father and mother; (2) households with one biological parent and non-biological parent included those who reported being raised with one biological parent as well as a non-biological parent (e.g., step-parent, grandparent, uncle/aunt, brother/sister, foster/adoptive parent, cohabitating adult, other adult); (3) households with only one biological parent included those who were raised with one biological parent and no cohabitating adult; and (4) those who reported being raised with neither biological parent.

Sociodemographic measures—Age, sex, marital status, educational attainment, and the income-to-needs ratio were included as sociodemographic measures. Age (measured in years) was assessed as a continuous variable based on the date of the interview and self-reported date of birth. Marital status was analyzed as a categorical variable (formerly married; never married; married/cohabitating). Educational attainment, based on self-reported number of years of education, was categorized in the following manner: (1) less than 12 years (less than high school); (2) 12 years (high school); (3) 13–15 years (some college); and (4) 16 years of more (college or more). Income-to-needs ratios were created from self-reported data regarding the ratio of annual household income to poverty threshold based on the number of related/non-related individuals living in the households. Income-to-needs ratios were grouped into four categories: (1) poor (< 1.0); (2) near poor (1.0–1.9); (3) non-poor (2.0–3.9); and (4) non-poor (≥ 4.0).

2.4 Statistical Analyses

All analyses used SAS-callable Survey Data Analysis (SUDAAN) software (Version 9.0.3, Research Triangle Institute, NC), which provides estimates that account for the incorporation of complex survey sampling methods, including multistage and cluster study designs. Weighted cross-tabulations were used to describe characteristics of the NSAL data. A series of weighted, multiple logistic regression analyses were conducted to assess the association between childhood family structure and lifetime prevalence of depressive disorder in adulthood. First, we assessed the association between family structure in childhood and depressive disorder stratified by gender. Second, we assessed the independent association

between family structure in childhood and depressive disorder stratified by gender, adjusted for sociodemographic covariates.

3. Results

Table 1 shows the sociodemographic characteristics for the overall sample, stratified by the presence or absence of lifetime major depressive disorder. Over half of respondents reported having lived with both biological parents during their childhood. In addition, the majority of the respondents were female, over one-third reported 12 years of education, and over half were non-poor (income-to-needs ratio ≥2.0). Data from the table also indicate that the prevalence of depressive disorder was lowest (4.5%) among respondents who grew up in households with both biological parents ($F_4 = 2.05$, $p = 0.09$). As expected, women, compared to men (70.25% and 29.75%, respectively), reported a higher prevalence of depressive disorder ($F_1 = 44.85$, $p < .0001$), and those with < 16 years of education compared to those ≥ 16 years also reported a higher prevalence of depressive disorder ($F_3 = 1.25$, $p = 0.29$).

Table 2 presents the unadjusted odds ratios derived from a series of weighted logistic regression analyses estimating the associations between family structure in childhood and depressive disorder in adulthood, stratified by gender. In analyses conducted on the entire sample, those who reported being raised with one biological and one non-biological parent had significantly greater odds of having depressive disorder compared to those raised with both biological parents (odds ratio [OR] = 1.56; 95% confidence interval [CI]: 1.16, 2.09). There was also some evidence that those who reported being raised in households with either one biological parent or neither biological parent had higher odds of depressive disorder in adulthood, but the odds ratios were not statistically significant. In analyses stratified by gender, for the most part, women and men who reported being raised in households without two biological parents were at increased risk of depressive disorder in adulthood. However, only women raised with one biological parent and a non-biological parent during childhood had significantly higher odds of depressive disorder in adulthood compared to women raised with both biological parents (OR = 1.57; 95% CI: 1.11, 2.22).

The adjusted odds ratios for the effects of family structure in childhood on depressive disorder in adulthood, stratified by gender, are presented in Table 3. Results remained substantively similar to those in Table 2, despite the inclusion of the number of sociodemographic variables. Among all respondents, those raised with one biological parent and one non-biological parent had higher odds of depressive disorder compared to those raised with both biological parents (OR = 1.39; 95% CI: 1.02, 1.89). Again, only women raised with one biological parent and a non-biological parent during childhood had higher odds of depressive disorder in adulthood compared to women raised with both biological parents (OR = 1.44; 95% CI: 1.05, 1.99).

4. Discussion

In this study, we investigated the effects of childhood family structure on lifetime prevalence of major depressive disorder in adulthood with family structure in childhood in a nationally representative sample of Blacks. Our findings suggest that Blacks who grew up in households with one biological parent and a non-biological parent were at greater risk for depressive disorder in adulthood compared to those who grew up with two biological parents. In addition, although the risk associated with this type of family structure and depressive disorder was elevated among both men and women, the association was only statistically significant among women. Our findings suggest that growing up with one-biological parent and a non-biological parent predicted depressive disorder independent of known sociodemographic risk factors in adulthood. These findings are generally consistent with previous studies that suggest that living arrangements in early life have long-term mental health consequences lasting well into

adulthood [1,10,12,14–16]. In addition, our findings suggest that family structure may be a salient risk factor for depressive disorder among women. Although previous studies have documented that women who report childhood adversity (e.g., low socioeconomic status, marital dissolution) are more likely than their male counterparts to experience depression in adulthood [16,38–43], it is less clear from our study that gender plays a role in the association between family structure and depressive disorder among Black women.

Our findings would be most persuasive if there had been adequate measures detailing the types and number of transitions regarding that occurred during childhood regarding family structure. For example, our measure of family structure assessed self-reported data of who raised respondents during the majority of their childhood until they were 16 years old. Based on this measure, we are unable to discern whether households where there were not two biological parents present were the result of marital dissolution, nonmarital cohabitation (living with a biological parent and his/her romantic partner), or co-residence (extended kin living arrangements). In addition, we were unable to assess the number of different family structure transitions respondents experienced during their childhood. The lack of data is unfortunate because such information may shed light on the aspects of family structure that contribute to an increased risk of major depression. Despite this limitation of the data, we draw upon evidence from the research literature in an effort to explain the higher odds of reporting a diagnosis of depressive disorder among women who grew up in households with one biological parent and a non-biological parent.

Marital dissolution is a common reason for the change in family structure from a household with two biological parents to a household with a biological parent and a non-biological parent. On average, divorcing mothers are granted custody of their children, indicating one primary pathway children transition into households with only one biological parent. When compared to other racial groups, data suggest that Blacks have higher marital dissolution rates [44]. In the 1950s, the probability of first marriage disruption within 10 years was 0.24 among Blacks and 0.13 among Whites. In the 1980s, the gap approximately doubled with the probability being 0.47 among Blacks and 0.24 among Whites. The high rate of marital break-up among Blacks is also compounded by their lower remarriage rates [45]. Previous research has linked marital break-up in childhood to depression in adulthood [1,10,12,14,16]. Similarly, studies have found a gender difference in the association between marital dissolution in childhood and depression in adulthood, with a significant association present only among women [16,46]. Several reasons have been posited as to why the effects of parental marital dissolution may differentially affect women, increasing their risk. In a response to parental divorce, female children may initially exhibit fewer problems than male children. However, this conclusion regarding girls' behavior may not be entirely accurate. Female children tend to internalize their problems which may result in lower self-esteem and well-being [46]. This continues into adulthood, suggesting a delayed reaction or "sleeper effect" (Rodgers, 1994; 36). Possible explanations have been posited as to why parental divorce affects the mental health status of women in later life. One explanation posits that females may assume more maternal attitudes after the parental divorce. It may also be that women experience negative attitudes associated with parental divorce in the context of their own romantic relationships [46–47].

The retreat from marriage – defined by declining marriage rates - has been accompanied by increasing rates of nonmarital childbearing among Blacks [45]. This represents another pathway by which transitions in family structure occur in households with a biological parent and a non-biological parent. In any given year, compared to other racial groups, Blacks have the highest rates of nonmarital births [48]. Since 1995, nearly 70% of Black births occurred outside of marriage [45,49]. As nonmarital births have increased among Blacks, the rates of cohabitation and co-residence have increased [17,50–52]. Research also shows that cohabitation and co-residence are both short-term in nature and are much less stable than

marital unions [17,50–51,53–54]. This implies that childhood may be marked by a number of transitions in family structure among those growing up in cohabitating and co-residing households. Among Blacks, this is particularly true. For Black children, 12 years of age and less, the cumulative number of transitions in family structure from marital unions to cohabitations increased 115% in the early 1990s [54]. Recently, a growing number of studies suggest that the number of transitions that individuals experience during childhood (e.g., multiple parental divorces, cohabitations, and remarriages) is associated with behavioral and emotional problems during adolescence and adulthood [55]. Given that nearly 20% of our sample reported growing up with one biological parent and a non-biological parent, this may suggest that this subgroup grew up in reconstituted, cohabitating, or co-residence households. As a result, this subgroup may have experienced a range of transitions in family structure during childhood. Although there is no way to directly assess this using our data, the number of transitions in family structure may in part explain the higher odds of depressive disorder among Black women who reported growing up in households with one biological parent and a non-biological parent.

In the present study, we did not find a significant association between growing up in a household with only one biological parent and depressive disorder in adulthood. Despite our findings, research has consistently shown that growing up in a household with only one biological parent is associated with adverse mental health consequences for children and adults [4,10,16]. Much has been made about the large number of Black children growing up in households with only one biological parent. More than 40 years ago, the Moynihan report on the Black family highlighted the rising rates of female-headed families as the primary problem facing the Black family [56]. Since the Moynihan report, mother-only living arrangements have been considered a detrimental living arrangement in childhood. However, findings from our study as well as other studies suggest that this type of household arrangement during childhood does not significantly increase the risk of depression in adulthood [6]. Possible explanations as to why Blacks, who grew up in households with only one biological parent, may not experience long-term mental health consequences have been suggested by earlier studies. Recent studies have shown that mother-only arrangements, where there are no transitions in family structure during childhood, are more stable than cohabitation and co-residence living arrangements [17,50]. Further, research has shown that despite the label of mother-only household, many Black children growing up in these households receive support from extended family [57–59] and report supportive relationships with non-resident fathers. One study suggested that Black adolescents reported their fathers were role models, despite the fact that the majority of adolescents in the study lived in households without their fathers [60]. Another study reported similar results, where adolescent girls reported their fathers played an important role in their lives whether or not they lived with their fathers [61]. In addition, Black fathers have been found to be significantly more likely to reside in close proximity and to frequently visit their children than non-resident fathers of other racial groups [62–66].

A notable finding of the present study was that being raised in households without two biological parents did not produce significantly higher odds of depressive disorder in men. A potential explanation for the non-significant findings may be that parental divorce may indirectly rather than directly increase the risk of depressive disorder in adulthood. Ross and Mirowsky [67] reported that the effects of parental divorce on depressive symptoms in adulthood were mediated by disadvantages in socioeconomic status and interpersonal relationships. Marital dissolution in one's family of origin may interfere with continued schooling, and may affect employment opportunities, income and economic hardship in later life. Research has shown low socioeconomic status in adulthood to be significantly associated with depressive disorder [68]. In addition, marital dissolution has negative interpersonal consequences for adult children. Adult children of divorce are more likely to marry early, and to have a history of divorce and remarriage. This has led some scholars to posit that adult

children of divorce form less stable and satisfying relationship than those from intact families [47,67,69].

We also found that respondents raised in households without either of their biological parents were not at increased risk to experience depressive disorder. This is an interesting finding since previous studies have shown children in non-parental care arrangements (e.g., foster care) may be more likely to experience poor outcomes than children in parental care environments. However, it is difficult to attribute the poorer outcomes among children in foster care to the effects of abuse and neglect prior to the non-parental care arrangement, from separation from the parent, and/or the effects of living in non-parental care arrangements [70]. Data show the majority of children living with neither biological parent live with relatives in non-parental care arrangements [71]. Research has shown children living with relative caregivers experience higher rates of poverty and food insecurity than children living with non-parental caregivers [72–73]. Despite this early-life economic disadvantage, our findings suggest that Blacks raised in households without either their biological parents were not at elevated risk for depressive disorder. Unfortunately, due to the small number of those in households with neither biological parent in our sample, we were unable to examine what aspects of non-parental caregiver arrangements may explain our findings. Further research is necessary to understand why Blacks raised in households without either their biological parents may not experience long-term mental health consequences.

The findings from this study should be interpreted in light of several limitations. First, the use of cross-sectional data limits our ability to establish causal associations between family structure and depressive disorder. Second, other childhood adversities were not included in the analysis. Previous studies have noted the considerable overlap among childhood adversities and the attenuation of the effects of individual adversities when controls are introduced for the overlap [12]. Third, prior depression and family history of psychopathology were not included as control variables in the analysis. Finally, our analyses relied upon the WMH-CIDI instrument to diagnose depressive disorder. Although this diagnostic instrument has been validated in diverse community settings, we cannot rule out the possibility that the prevalence of the disorder among Blacks may have been underestimated. Especially if respondents expressed their problems in unique ways that were not identified by *DSM-IV*. This may be a particular issue as culture can affect both the clinical presentation of specific psychiatric disorders and the ability to recall or report symptoms [24,27].

Despite these limitations, and to the best of our knowledge, we are unaware of other studies that specifically examined family structure in this manner among a representative sample of Blacks using a diagnostic tool that corresponds to *DSM-IV* criteria for depressive disorder. The results from our study suggest that Black women who grew up in households with cohabiting and/or co-residing adults are at increased risk for depressive disorder. The implication is that changes in family structure affect a majority of the Black population; these changes in family structure may also result in long-term mental health problems. However, not all changes in family structure are associated with depressive disorder in adulthood. As the recognition of depression and treatment recommendations for depression in primary care settings has improved among Blacks [74], primary care visits present an opportunity to engage Black patients in discussions about how their childhood family structures may play a role in their depression. Assessment of formation and changes in family structure requires a cultural awareness with a patient-in-context approach as to the evaluation of behaviors and life experiences [75]. This approach may include recognizing the contextual factors associated with family structure that influence patients' worldviews and potentially their mental health status.

In closing, psychiatric epidemiologic data in the U.S. have revealed that the prevalence of major depression is lower among Blacks compared to Whites [24,76–78]. This finding appears

to be counterintuitive based on the social disadvantage experienced by Blacks as well as the considerable literature on the role of stress on depression. This finding suggests that protective factors, present in the lives of Blacks, may explain the lower prevalence of major depression (such as ethnic identification [79–81] and social support [82–84]). This psychiatric epidemiologic finding may also suggest why there are so few studies that have examined the risk factors associated with major depression among Blacks using diagnostic tools to assess major depression. Due to the recent availability of psychiatric epidemiologic data that include nationally-representative samples of American-born and Caribbean-born Blacks, it is now possible to further explore the social causes of major depression among Blacks. The results from our study and previous studies that used NSAL data suggest the importance of examining the influence of culturally-relevant factors in an effort to better understand depression among Blacks [24,85].

Acknowledgements

The National Survey of American Life (NSAL) was supported by the National Institute of Mental Health (U01-MH57716) with supplemental support from the National Institutes of Health Office of Behavioral and Social Science Research; National Institute on Aging (5R01 AG02020282) with supplemental support from the National Institute on Drug Abuse; and the University of Michigan. Preparation of this article was also aided by grants from the National Institute of Mental Health (1P01 MH58565, 1T32 MH67555, and 5TMH16806). This publication was also made possible by Grant Number 1KL2RR025015-01 from the National Center for Research Resources (NCRR), a component of the National Institutes of Health (NIH) and NIH Roadmap for Medical Research. Its contents are solely the responsibility of the authors and do not necessarily represent the official view of NCRR or NIH. The authors would like to thank the NLAAS writing group and the anonymous reviewers for helpful comments on earlier drafts.

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Table 1

Demographic characteristics of study sample, National Study of American Lives (NSAL) 2001–2003

	Total (N = 3434)		DSM-IV MDD (lifetime)		No DSM-IV MDD (lifetime)		
Characteristics	**Sample size**	**Weighted %**	**Sample size**	**Weighted %**	**Sample size**	**Weighted %**	
Family structure							
Raised by both biological parents	1810	54.49	165	47.13	1645	55.35	
Raised by one biological parent and non-biological parent	689	19.93	89	25.62	600	19.27	
Raised by one biological parent	499	13.42	57	14.36	442	13.31	
Raised by neither biological parent	353	9.89	44	10.13	309	9.86	
Missing	83	2.27	13	2.76	70	2.21	$F_{(4)} = 2.05$
Age, y							
≤ 25	474	16.48	54	19.18	420	16.17	
25–39	1131	30.92	132	32.43	999	30.74	
40–64	1407	41.42	165	43.96	1242	41.13	
≥65	422	11.18	17	4.44	405	11.96	$F_{(3)} = 8.36^{***}$
Sex							
Female	2217	56.00	282	70.25	1131	54.34	
Male	1217	44.0	86	29.75	1935	45.66	$F_{(1)} = 44.85^{***}$
Marital status							
Married or cohabiting	1182	41.77	102	32.67	1080	42.82	
Formerly married	1113	26.51	125	30.88	988	26.00	
Never married	1139	31.73	141	36.45	998	31.18	$F_{(2)} = 5.28^{**}$
Educational attainment							
< 12 years	885	24.11	106	25.95	779	23.90	
12 years	1299	37.63	129	33.06	1170	38.16	
13–15 years	785	23.97	74	24.56	711	23.90	
≥ 16 years	465	14.29	59	16.43	406	14.04	$F_{(3)} = 1.25$
Income to needs ratio							
Poor (<1.0)	900	23.82	121	27.22	779	23.42	
Near poor (1.0–1.9)	892	24.06	82	20.84	810	24.43	
Non-poor (2.0–3.9)	1029	31.90	107	33.60	922	31.70	
Non-poor (≥ 4.0)	613	20.22	58	18.34	555	20.44	$F_{(3)} = 1.31$

Sample size numbers reflect actual number of respondents; all percentages are weighted and incorporate sampling weights.

F-statistic results reflect design-based effects.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Table 2

Bivariate associations between lifetime prevalence of DSM-IV major depressive disorder and family structure for black women and men in the National Survey on American Life (NSAL) 2001–2003

	Total		Women		Men	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Raised by both biological parents	1.00	-----	1.00	-----	1.00	-----
Raised by one biological parent and non-biological parent	1.56	(1.61, 2.09)	1.57	(1.11, 2.22)	1.32	(0.63, 2.76)
Raised by one biological parent	1.27	(0.93, 1.73)	1.15	(0.77, 1.70)	1.37	(0.60, 3.16)
Raised by neither biological parent	1.21	(0.79, 1.83)	1.35	(0.85, 2.14)	0.65	(0.25, 1.67)
Missing	1.46	(0.75, 2.88)	1.62	(0.67, 3.93)	1.10	(0.28, 4.22)

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

Table 3

Logistic regression between lifetime prevalence of DSM-IV major depressive disorder and family structure for black women and men in the National Survey on American Life (NSAL) 2001–2003

	Total		Women		Men	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Raised by both biological parents	1.00	-----	1.00	-----	1.00	-----
Raised by one biological parent and non-biological parent	1.39	(1.02, 1.89)	1.44	(1.05, 1.99)	1.18	(0.54, 2.57)
Raised by one biological parent	1.10	(0.79, 1.54)	1.02	(0.69, 1.50)	1.25	(0.56, 2.79)
Raised by neither biological parent	1.14	(0.76, 1.70)	1.34	(0.83, 2.16)	0.63	(0.24, 1.61)
Missing	1.52	(0.80, 2.89)	1.73	(0.71, 4.25)	1.28	(0.33, 4.89)
Age	0.98	(0.97, 0.99)	0.98	(0.97, 0.99)	0.98	(0.96, 1.00)
Marital status						
Married or cohabitating	1.00	-----	1.00	-----	1.00	-----
Formerly married	1.77	(1.14, 2.75)	1.46	(0.91, 2.35)	2.70	(1.31, 5.57)
Never married	1.14	(0.83, 1.57)	1.01	(0.66, 1.54)	1.51	(0.81, 2.83)
Educational attainment						
< 12 years	1.00	-----	1.00	-----	1.00	-----
12 years	0.75	(0.53, 1.06)	0.68	(0.45, 1.02)	0.98	(0.48, 2.01)
13–15 years	0.83	(0.53, 1.29)	0.85	(0.51, 1.42)	0.87	(0.38, 1.97)
≥ 16 years	1.09	(0.67, 1.78)	1.14	(0.65, 2.01)	1.02	(0.37, 2.83)
Income to needs ratio						
Poor	1.00	-----	1.00	-----	1.00	-----
Near poor	0.79	(0.56, 1.13)	0.70	(0.47, 1.05)	1.23	(0.46, 3.32)
Non-poor (2.0–3.9)	1.16	(0.83, 1.62)	1.04	(0.70, 1.56)	1.53	(0.73, 3.21)
Non-poor (≥ 4.0)	1.06	(0.68, 1.65)	0.94	(0.51, 1.74)	1.43	(0.67, 3.05)

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