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Living Arrangements during Childrearing Years and Later Health of African American Mothers

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Abstract

Using longitudinal data from the Woodlawn Project (N=680), this study examined how patterns of living arrangements among a community cohort of African American mothers were associated with later physical and emotional health. We identified eight patterns of stability and transition in living arrangements during the childrearing years. Health outcomes include SF-36 Physical Functioning, SF-36 Bodily Pain, depressed mood, and anxious mood. Specific patterns of living arrangements were related to later health, controlling for age, earlier health, education, and poverty. Poverty explained many, but not all, of the relationships between living arrangements and health. Findings underscored the benefits of social support and social integration and highlighted the negative effects of marital dissolution on health.

Keywords

African Americans; family structure; health and illness; longitudinal; poverty; social support

During the past 30 years, there has been a shift in family structure across the nation, particularly among African Americans (Cancian & Reed, 2001), exemplified by an increase in nontraditional patterns including single parent households, nonmarital childbearing, and declining marriage rates (Bramlett & Mosher, 2002). Despite these changes, we know little about the complexities of these arrangements or their effects on family members' well-being. This study assesses the impact of living arrangements during the childrearing years on later health among a cohort of African American mothers followed for more than 30 years.

Marriage, Social Integration, and Health

It is well established that marriage has positive effects on health and mortality (Berkman & Glass, 2000; Kiecolt-Glaser & Newton, 2001). According to social integration theory, married individuals have a health advantage attributable to three aspects of marriage: social support, social control, and social integration (Anson, 1989; Durkheim, 1951). Social

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support comprises four primary domains that can reduce stress and health problems: emotional (e.g., having someone to talk to), informational (e.g., knowledge), instrumental (e.g., child care), and financial (Berkman & Glass, 2000; Thoits, 1995). Marital social support is particularly important during the childrearing years. Stress from family demands and financial worries has been associated with poor health (Neighbors, 1997; Williams, Yu, Jackson, & Anderson, 1997), and single motherhood may bring increased economic difficulties, role strain, and psychological problems (Avison & Davies, 2005; Demo & Acock, 1996; Thompson & Ensminger, 1989). Marriage also confers a widely valued social status with a clear social role which serves to regulate and control behavior, reducing risk-taking and encouraging healthy behavior (Umberson, 1987).

Marriage and Living Arrangements among African Americans

Although much has been learned about marital status and health, its applicability to African American populations may be limited (Liu & Umberson, 2008). African Americans are less likely to marry, more likely to separate, and less likely to remarry (Cherlin, 1998), primarily because of economic and cultural influences (Goldscheider & Bures, 2003; Sigle-Rushton & McLanahan, 2002). Historically, slavery limited African American males' ability to serve as economic providers, promoting emergence of a matriarchal family structure (Patterson, 1998), which has been sustained by increased women's earnings and the welfare system (Moffitt, 2002). Further, the pool of eligible husbands has been reduced by high rates of unemployment and incarceration among African American men (Wilson, 1987).

Throughout history, African Americans have relied on family for child care and other support (Wilson, 1989), and are more likely than Whites to live with extended family, often for economic reasons (Beck & Beck, 1989). In early research on the households of the children of the population under study, more than 87 family types were identified (Kellam, Ensminger, & Turner, 1977). Studies of African American households, however, tend to focus on single motherhood (Cain & Combs-Orme, 2005; Murry, Bynum, Brody, Willert, & Stephens, 2001).

The question remains as to whether African Americans mothers who live with extended family or fictive kin benefit similarly to those living with spouses. Families can provide much needed instrumental and financial support, and studies have shown that young mothers living with adult relatives have better education and employment outcomes (Furstenberg, Brooks-Gunn, & Morgan, 1987; Gordon, Chase-Landsdale, & Brooks-Gunn, 2004). Less clear is whether the social status and role obligations conferred by marriage are as important among African Americans (Liu & Umberson, 2008). Perhaps family members in the household promote social norms and regulate behavior as do spouses, conferring health benefits comparable to those associated with marriage.

Stability and Dissolution of Marriage and Living Arrangements

Evidence suggests that it is the *change* from married to unmarried, rather than *being* unmarried, that increases the risk for health problems among the formerly married (Bennett, 2006). This increased risk is attributed to the traumas that occur with the loss of marital status, such as changes in self-concept, life routine, social networks, sexual activity, and economic resources (Fenwick & Berresi, 1981; Hemstrom, 1996). Researchers have begun to examine the stability of cohabitating unions (Meadows, McLanahan, & Brooks-Gunn, 2008), but few focus on transitions of other complex living arrangements. In prior research with the population under study here, Hunter and Ensminger (1992) found that over a ten year period, households with extended family members had more exits and entrances of family members than husband-wife households. How such transitions affect mothers' later health has not been examined.

Summary

Social integration theory suggests that women living with spouses while raising children will have better health outcomes than those who do not. However, African American mothers are more likely to live alone or in complex households. Therefore, the benefits of marriage may be less pronounced for them. Studies of African American mothers have typically compared single motherhood to marriage, with little focus on other living arrangements. Also, reliance on cross-sectional data, makes it difficult to distinguish the causal impact of marital status from the confounding effect of selection (i.e., the healthy are more likely to marry) (Waldron, Weiss, & Hughes, 1996), or to capture transitions over time. Finally, few studies examine the effects of socioeconomic factors associated with marriage (Goldman, Korenman, & Weinstein, 1995).

The goal of this longitudinal study is to examine the association between living arrangements of a population of urban African American women during the childrearing years and physical and mental health in later adulthood, taking into account early health, socioeconomic status, and changes in living arrangements over time. We hypothesize that women who were not married while raising children would have more physical and psychological problems in later years than those who were married. We also expect that women who stay married throughout the childrearing years would have better health compared to those who transition out of marriage or marry later. Similarly, we expect that mothers living in households without other adults while raising children may have more health problems later on compared to those living with other adults. Finally, we expect that socioeconomic resources may explain some of the association between early living arrangements and later health.

METHOD

Study Description

Women in this study are mothers of a cohort of first graders from Woodlawn, a largely African American community on the south side of Chicago. All but 13 families in the cohort entering first grade in one of the community's nine public or three parochial schools participated. Mothers were assessed three times over 30 years: in 1966, when their children were in first grade (T1); in 1975, when the children were adolescents (T2); and in 1997, when the children were adults (T3). (See Ensminger & Juon, 2001, Astone, Ensminger, & Juon, 2002, and Kasper et al., 2008, for more details on study design and previous results.)

At T1, 1140 biological and adoptive mothers were included. At T2, 867 (76%) of the 1140 mothers were reinterviewed. Of the 273 mothers who were not reassessed at T2, 3 had died, 69 refused, 126 could not be found, and 75 had moved from the Chicago area. At T3, 256 of the original 1140 mothers had died. Of the surviving 884 women, we interviewed 680 (77%); 48 refused; 23 were too incapacitated; and 128 could not be located. This study focuses on the 680 women assessed in 1997–98 whose ages ranged from 51 to 80 (median=61, mean=61.9). They were relatively poor, with 33% reporting household income under \$10,000 at T3.

To evaluate attrition bias we compared (a) women interviewed at T2 (n=867) and those not (n=273); and (b) women interviewed at T3 (n=680) with those not (n=406). Full details of these analyses have been described previously (Ensminger & Juon, 2001; Kellam, Ensminger, & Simon, 1980). In sum, at T2, there were no statistically significant differences in any factors pertaining to this study; at T3, those who refused to be interviewed were more likely than those who were interviewed to be living below the poverty line at T1. This difference could lead to an underestimation of the effect of poverty as is noted in the

discussion. Otherwise, mothers who are missing at one data point do not differ from those who were followed successfully.

Measures

Living arrangements—We characterized mothers' living arrangements at T1 and T2 by asking them to list the people living in their household and to describe how each was related to the focal child. Marital status was determined with a separate question. We categorized responses as living as the sole adult, living with a husband, and living with an “other” adult, which includes: parents, spouse's parents, adult children, other adult relatives (siblings, grandparents), and other adult nonrelatives. These patterns are described in *Results*.

Dependent variables—Four health outcomes were examined at T3: two scales from the SF-36 (physical functioning and bodily pain) and assessments of depressed mood and anxious mood. The SF-36 is widely used with strong reliability and validity in U.S. general and disadvantaged populations (Ware, 2000). Scores for both scales were constructed according to the user's manual and converted to a scale of 0 to 100 (higher scores indicating better health).

The SF-36 Physical Functioning Index comprises 10 items asking mothers to report how much their health limits them during a typical day in these activities: (a) vigorous activities (e.g., running, lifting); (b) moderate activities (e.g., vacuuming, playing golf); (c) lifting or carrying groceries; (d) climbing several flights of stairs; (e) climbing one flight of stairs; (f) bending, kneeling or stooping; (g) walking more than a mile; (h) walking several blocks; (i) walking one block, and (j) bathing or dressing yourself. Response options were: 3 = *not at all*, 2 = *a little*, and 1 = *a lot*. The standardized mean score for the total group of mothers was 67.3 ($SD=29.8$, $\alpha=.94$).

The SF-36 Bodily Pain Scale consists of two items: (a) How much bodily pain have you had during the past 4 weeks? (1 = *very severe*, 2 = *severe*, 3 = *moderate*, 4 = *mild*, 5 = *very mild*, 6 = *none*); and (b) During the past 4 weeks, how much did pain interfere with your normal work including both work outside the home and housework? (1 = *extremely*, 2 = *quite a bit*, 3 = *moderately*, 4 = *slightly*, 5 = *not at all*). The mean standardized score was 70.0 ($SD=27.8$, $\alpha=.87$).

The Depressed Mood construct comprises 10 questions from the Center for Epidemiologic Studies Depression Scale (CES-D), developed for community populations (Markush & Favero, 1973). Reliability and validity have been confirmed with women (Ross & Mirowski, 1984) and African Americans (Roberts, 1980). Mothers were asked how often in the past 12 months they: (a) felt sad; (b) felt lonely; (c) felt they couldn't shake the blues; (d) felt depressed; (e) been bothered by things that don't usually bother you; (f) wondered if anything was worthwhile anymore; (g) felt that nothing turned out for you the way you wanted it to; (h) felt completely hopeless about everything; (i) felt worthless; and (j) thought about taking your own life. Response options were: 1 = *never*, 2 = *almost never*, 3 = *sometimes*, 4 = *fairly often*, and 5 = *often*. Responses were summed for an overall score ($M=18.2$, $SD=6.6$) with higher values indicating more frequent depressed mood ($\alpha=.89$).

Anxious Mood was assessed with one item, “How often do you have days when you are nervous, tense, on edge?” This global measure was validated previously with the Woodlawn population by comparing how well it related to a multiple-item scale of anxiety assessed at the same time (Brown, Adams, & Kellam, 1981). Response categories were: 4 = *very often*, 3 = *fairly often*, 2 = *occasionally*, and 1 = *never* ($M=1.76$, $SD=0.92$). Because the responses were skewed, we created a dichotomous variable, combining the very often and fairly often

responses and the occasionally and never responses. In this sample, 16.8% reported being tense fairly or very often.

Control variables from early childrearing years—Age at T1 was included in all multivariate analyses given the expected inverse relationship between age and health. To control for early mental health, we included two T1 questions: “How often do you have days when you are sad and blue?” and “How often do you have days when you are nervous, tense, on edge?” We dichotomized the responses into “very or fairly often” vs. “occasionally or hardly ever” because of skewed responses. To control for early physical health status, we included a question about chronic conditions from T1: “Do you have any illness or condition that has lasted a long time or that needs medicine regularly, or that limits activity in any way?” Income and household size by age were obtained at each interview and used to classify women as living in poverty (100% or below the federal poverty level). For women without income data at T2, poverty status was assigned on the basis of reports of welfare receipt from T2 or retrospectively at T3. We combined poverty status at T1 and T2 into the following categories: not poor either time; poor at T1 only; poor at T2 only, and poor at both interviews. To control for the association between education and health, we included years of education.

Analyses

We first assessed the characteristics of each living arrangement pattern group (see *Results*) using one-way analysis of variance with *post hoc* Tukey's Honestly Significant Difference test for continuous measures and chi square for categorical variables. To assess relationships between living arrangement groups with the various physical and emotional health outcomes, we designed four multivariate models for each outcome. The first model adjusted for mothers' early health and age; the second model added adjustments for education; the third adjusted for poverty without education, and the fourth combined all control variables into one model. We used STATA 10 (StataCorp, 2007) multiple regression analyses for continuous outcome variables (the SF-36 scales and the depressed mood construct) and logistic regression for the dichotomous outcome (anxious mood).

RESULTS

In characterizing mothers' living arrangements, we focused on adults residing in the household, regardless of the number of children. At T1, 37.4% of mothers lived as the sole adult, 51.0% lived with a husband, and 11.6% lived with an “other” adult. “Others” were almost entirely relatives—only one mother reported living with a non-relative adult male. At T2, 32.4% lived as the sole adult, 41.3% lived with a husband, and 26.3% lived with an “other” adult. Again, only one mother reported cohabitation with a non-relative male.

Living Arrangement Patterns

We identified nine possible patterns of stability and transition in mothers' living arrangements at T1 and T2. Two categories with very small numbers were combined because both involved transition into marriage at T2. In all, three patterns reflected stable living arrangements over time, and five reflected transitions between T1 and T2: (a) “Husband-Husband” (HH) comprises women who lived with a husband (with or without other adults) at both childrearing time points (32.9% of the mothers); (b) “Alone-Alone” (AA) refers to women who lived as the sole adult in the household at both T1 and T2 (18.7%); (c) “Other-Other” (OO) refers to women who lived with another adult (but no husband) at both childrearing time points (6.0%); (d) “Alone-Husband or Other-Husband” (AH/OH) (8.4%) represents either “Living Alone Time 1/Living with Husband T2” (6.2 %) or “Living with Another Adult Time 1/Living with Husband T2” (2.2%); (e) “Husband-

Alone” (HA) refers to those mothers who lived with their husbands during T1 and then lived with no other adults at T2 (10.3%); 6) “Other-Alone” (OA) are mothers who lived with another adult at T1 and then became the sole adult at T2 (3.4%); (f) “Husband-Other” (HO) are mothers who lived with their husbands at T1 and then with another adult at T2 (7.8%); (g) “Alone-Other” (AO) comprises mothers who were the sole adults at T1 and then lived with another adult at T2 (12.5%).

Descriptive Characteristics of the Living Arrangement Groups

As shown in Table 1, mothers in the HH group were the least likely to report living in poverty and least likely to report being either anxious or sad at T1. At T3, these women also had lower levels of physical health problems, depressed mood, and anxious mood (Table 2). Mothers in the AA group were most likely to report being poor at T2 and least likely to have completed high school. They also had the highest rate of depression at T3. Those in the OO group were most likely to report chronic conditions at T1 and the poorest physical functioning at T3. Among mothers who had transitions in living arrangements, those transitioning into marriage (AH/OH) were least likely to report a chronic condition at T1. Women in the HA group had low rates of poverty at T1 and high rates at T2, and were the most likely to have completed high school.

Regression Models

We then ran regressions to assess the impact of these early patterns of living arrangements on the women's health in later adulthood using HH as the reference group. Tables 3–6 summarize the relationships between living arrangements and later physical and emotional health. Four models are shown for each physical and emotional health outcome.

As shown in Table 3, in the first model for SF-36 Physical Functioning we found that relative to mothers in the HH group, several groups were significantly more likely to have functioning limitations related to physical health problems: AA, OO, HA, and AO. Education (Model 2) did not attenuate the results in Model 1, but when adjustments for poverty were added, the effects of living arrangements were no longer statistically significant (Models 3 and 4).

In the first model for SF-36 Bodily Pain, controlling for age and early chronic illness, mothers in each of the seven groups were significantly more likely to report bodily pain at T3 compared to women in the HH group (Table 4). Adjusting for education did not change these findings (Model 2). Adjusting for poverty (Model 3), only two groups remained significantly more likely to report bodily pain: HA and HO. In the final model, those in the HA, HO, and AH/OH groups were significantly more likely to report later bodily pain.

For Depressed Mood (Table 5), mothers in the AA group were significantly more likely to report later depression (Model 1); this relationship remained when adjusting for education (Model 2). It became marginally significant when we adjusted for poverty (Models 3 and 4).

Table 6 shows findings for anxiety. Model 1 results show that, controlling for age and early emotional problems, women in the AA, AO, HA, and AH/OH groups were more likely to report anxiety relative to those in the HH group (Table 6). These relationships remained significant when adjusting for education and poverty separately and together (Models 2–4).

DISCUSSION

Despite the low rates of marriage and the prevalence of complex living arrangements among African American mothers, few studies have prospectively assessed how these living arrangements relate to later health. The goal of this study was to use longitudinal data to

learn more about living arrangements among African American mothers during the childrearing years and to determine how these arrangements related to later physical and emotional health.

Findings demonstrate that in addition to living with husbands, many of the women lived with extended family or lived alone. In fact, only about half of the women lived with husbands at the first assessment, and 41% lived with a husband 10 years later. The substantial proportion of mothers living with extended family (11% at T1, 26% at T2) corresponds with historical trends among African Americans (Cherlin, 1998). The few reports of cohabitation (only two) may reflect the era of the interviews—in the 1960s and 70s it was less common to cohabit, and it may also have been less socially desirable to report it. In addition, more than 40% these women experienced transitions in their living arrangements during the childrearing years (e.g., 18% transitioned out of marriage to live either alone or with another adult), a relatively high level of change. Only a third of the mothers reported living with a husband at both time points.

Controlling for age, early health, education, and poverty, we found that a few specific patterns of living arrangements related to later physical and emotional health. For example, women who transitioned from living with a husband to living as the sole adult were more likely to report both bodily pain and anxiety in later life compared to women who were married at both assessment periods. This lends support for the hypothesis that marriage protects health through social support and regulation (Anson, 1989; Hughes & Gove, 1981). However, we should note that those who lived with extended family at both assessment periods were no worse off than those who were married at both times, suggesting that living with relatives also provides important support and regulation.

Women who transitioned out of marriage to live with relatives were more likely to report bodily pain later in life compared to women who were married at both assessment periods. Although one might expect that living with family would provide comparable benefits granted in a marital relationship, this suggests that the loss of a marriage has long-term negative effects, regardless of whether a woman goes on to live with family. This finding provides support for the marriage dissolution hypothesis that the loss of a spouse is a trauma that impacts health regardless of the social support obtained from later household members (Hemstrom, 1996).

Our findings also show that compared to mothers who were married at both Time 1 and 2, those who transitioned from living alone or living with others to living with their husbands were more likely to report anxiety later in life. Similarly, those who lived alone and then lived with family reported significantly more anxiety later in life. These findings may reflect a lasting effect of living alone during the early years of child rearing or an increased stress effect or burden from changes in living arrangements or marital status.

Finally, many of the relationships between early living arrangements and later health lost statistical significance when early poverty was added to the regression models, affirming the well established link between poverty and health (e.g., Adler & Astrove, 1999; Kasper et al., 2008) and highlighting the relationship between poverty and certain types of living arrangements. For example, among women in our study who lived alone at both time points, 75% were poor, in contrast to 15% of women who lived with a husband at both times. It is not surprising, then, that many of the living arrangement effects on health did not persist when poverty was considered. Effects that did remain when controlling for poverty were related to emotional health and bodily pain (possibly an indicator of emotional health) and often involved living arrangements in which the woman was the sole adult. (Further, these findings may be underestimated because of the higher attrition among poor women at T3).

Overall, results point to the importance of both economic and social support benefits of marriage and living with family.

Several study limitations should be considered. First, there were large time spans between assessments, and thus we were unable to take into account transitions in living arrangements or other confounders that may have occurred between assessments. Also, we did not consider the quality of relationships with husbands and other adults or the effect of family burden, which may have more clearly delineated the categories and their associations with later health. There is extensive evidence that marital problems, such as conflict or stress, can increase the risk for poor health behaviors and poor health status (Hughes & Gove, 1981; Umberson, Williams, Powers, Liu, & Needham, 2006). Although we did not find negative effects from living with husbands or other adults, differential effects by relationship quality should be assessed in more detail. Finally, we designed these analyses to focus on the influence of earlier risk, but future studies should build upon our findings by exploring pathways through more proximal risk factors.

Despite these limitations, the study makes important contributions to our understanding of living arrangements among African Americans and how these arrangements are associated with later physical and psychological health. The findings are strengthened by the use of longitudinal data following a community population of African American women for more than 30 years; use of multiple measures of physical and emotional health; the reduction of selection effects by controlling for early health problems; and by the examination of the role of poverty in explaining the relationship between living arrangements and later health.

Future studies can build upon these findings in a number of ways. For example, we need to learn more about types of support provided in the household, mothers' satisfaction with living arrangements, and reasons for transitions in living arrangements. It would also be useful to differentiate those in the household who bring economic and social support from those who are dependent on the woman's assistance. Researchers should also explore how living relationships affect other outcomes, including mortality. More also needs to be learned about the mechanisms through which marriage and supportive household relationships affect later health. Future studies should explore pathways through education and employment, community involvement, health behaviors, including smoking and drinking, and other mediating influences.

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Table 1

Characteristics of Women by Primary-Adult Household Composition in 1966 & 1976 (N=680)

Household Composition		Poor in 1966	Poor in 1976	Age in Years in 1966	12 Years of Schooling by 1997	Chronic Condition in 1966	Anxious Very, Fairly Often in 1966	Sad Very, Fairly Often in 1966
Time 1 (1966)	Time 2 (1976)	N(%)	%	M, SD, Range	%	%	%	%
1. Husband	1. Husband	224 (32.9)	22.3	31.8, 5.3, 21–46	68.0	9.4	24.7	10.3
2. Lone Adult	2. Lone Adult	127 (18.7)	85.0	30.9, 5.4, 23–49	49.2	12.0	45.2	21.4
3. Other Adult	3. Other Adult	41 (6.0)	56.1	31.6, 5.8, 22–49	58.5	19.5	39.0	17.1
4. Lone or Other Adult	4. Husband	57 (8.4)	59.6	29.3, 4.9, 21–46	66.7	3.5	29.8	15.8
5. Husband	5. Lone Adult	70 (10.3)	25.7	29.8, 5.1, 20–43	70.0	5.7	41.4	15.7
6. Other Adult	6. Lone Adult	23 (3.4)	47.8	31.8, 7.7, 21–47	52.2	8.7	34.8	13.0
7. Husband	7. Other Adult	53 (7.8)	35.8	32.5, 5.2, 23–46	64.2	9.4	39.6	17.0
8. Lone Adult	8. Other Adult	85 (12.5)	87.1	32.3, 5.1, 22–47	54.1	12.9	38.8	24.7
	Total	680 (100)	49.6	31.3, 5.4, 20–49	61.4	10.0	34.8	16.2
χ^2 or oneway ANOVA with <i>post hoc</i> Tukey HSD ^a		$\chi^2=201.2^{***}$ (7 df)	$\chi^2=166.0^{***}$ (7 df)	F=3.1 ^{**} ; 4<1 [*] ; <7 [*] ; <8 [*]	$\chi^2=17.9^{**}$ (7 df)	$\chi^2=9.7$ ns (7 df)	$\chi^2=19.6^{***}$ (7 df)	$\chi^2=13.0^{\dagger}$ (7 df)

^a Pairs of household composition groups that differ significantly in ANOVA are presented as 1 through 8 as enumerated in columns 1 and 2.

[†] $p<10$
* $p<.05$
** $p<.01$
*** $p<.001$.

Table 2

Early Primary-Adult Household Composition and Later Health among African American Women: Description of Sample in 1997 (N=680)

Household Composition		SF-36 Physical Functioning ^a		SF-36 Bodily Pain ^a		Depressed Mood ^b		Anxious Very, Fairly Often	
Time 1 (1966)	Time 2 (1976)	M, SD	M, SD	M, SD	M, SD	M, SD	M, SD	n (%)	n (%)
1. Husband	1. Husband	72.6, 26.0	76.8, 22.9	17.1, 5.8	21 (9.4%)				
2. Lone Adult	2. Lone Adult	63.4, 31.1	68.6, 29.7	19.9, 7.1	28 (22.0%)				
3. Other Adult	3. Other Adult	61.6, 34.7	65.8, 27.7	18.6, 6.5	6 (14.6%)				
4. Lone or Other Adult	4. Husband	70.6, 30.4	68.7, 26.1	17.8, 6.7	11 (19.3%)				
5. Husband	5. Lone Adult	65.9, 31.5	66.3, 30.7	19.0, 7.7	15 (21.7%)				
6. Other Adult	6. Lone Adult	65.0, 34.4	65.1, 33.1	18.2, 5.6	5 (21.7%)				
7. Husband	7. Other Adult	65.8, 30.9	64.8, 30.5	18.4, 6.7	8 (15.1%)				
8. Lone Adult	8. Other Adult	62.6, 29.5	65.1, 29.5	17.8, 6.5	20 (23.8%)				
	Total	67.3, 29.8	70.0, 27.8	18.2, 6.6	114 (16.8%)				
χ^2 or oneway ANOVA with <i>post hoc</i> Tukey HSD ^c		F=2.03*	F=3.08**	1>8*; >7†	F=2.41*	2*>1**	$\chi^2=16.4^*$ (7 df)		

^a Higher scores on SF-36 scales indicate better health, range 0–100.

^b Higher scores for depressed mood indicate poorer mental health, range 10–46.

^c Pairs of household composition groups that differ significantly in ANOVA are presented as 1 through 8 as enumerated in columns 1 and 2.

† $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$.

Effects of Early Primary-Adult Household Composition on the Later Health of African American Women: Regression Models for SF-36 Physical Functioning

Table 3

SF-36 Physical Functioning at Time 3 (1997)													
Household Composition		Model 1 (N=677)			Model 2 (N=674)			Model 3 (N=676)			Model 4 (N=673)		
Time 1 (1966)	Time 2 (1976)	B	SE	β	B	SE	β	B	SE	β	B	SE	β
1. Husband	1. Husband												
2. Lone Adult	2. Lone Adult	-9.83	3.26	-0.13**	-8.49	3.28	-0.11**	-0.36	3.84	-0.00	-1.12	3.83	-0.01
3. Other Adult	3. Other Adult	-10.30	4.96	-0.08*	-10.08	4.91	-0.08*	-4.31	5.06	-0.03	-5.17	5.05	-0.04
4. Lone or Other Adult	4. Husband	-4.84	4.35	-0.05	-4.60	4.32	-0.04	-2.38	4.44	-0.02	-2.79	4.42	-0.03
5. Husband	5. Lone Adult	-8.93	4.01	-0.09*	-8.52	3.98	-0.09*	-4.19	4.18	-0.04	-4.57	4.17	-0.05
6. Other Adult	6. Lone Adult	-7.68	6.37	-0.05	-7.48	6.31	-0.05	-0.68	6.48	-0.00	-1.64	6.46	-0.01
7. Husband	7. Other Adult	-6.18	4.45	-0.06	-7.00	4.41	-0.06	-3.61	4.45	-0.03	-4.66	4.45	-0.04
8. Lone Adult	8. Other Adult	-9.20	3.71	-0.10*	-8.86	3.68	-0.10*	-2.68	4.10	-0.03	-3.77	4.10	-0.04
Controls													
Age		-0.93	0.21	-0.17***	-0.80	0.21	-0.15***	-0.86	0.21	-0.16***	-0.78	0.21	-0.14***
Chronic Condition at Time 1		-9.15	3.75	-0.09*	-8.91	3.72	-0.09*	-8.72	3.70	-0.09*	-8.62	3.69	-0.09*
SES:													
Years of Education					1.87	0.48	0.15***				1.34	0.50	0.11**
Early Poverty:													
Not Poor Time 1 or Time 2													
Poor Time 1 only								-5.34	3.31	-0.07	-4.06	3.34	-0.06
Poor Time 2 only								-8.83	3.79	-0.10*	-7.72	3.80	-0.09*
Poor Time 1 and Time 2								-15.37	3.36	-0.23***	-12.80	3.50	-0.19***
R ² (F test)													
				0.06 (4.56***)					0.08 (5.71***)				
									0.09 (5.35***)				

Note: Negative coefficients indicate poorer health for the household composition group compared to the reference group (Husband-Husband).

† p<.10
* p<.05
** p<.01

 $p < .001$

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Effects of Early Primary-Adult Household Composition on the Later Health of African American Women: Regression Models for SF-36 Bodily Pain

Table 4

SF-36 Bodily Pain at Time 3 (1997)																
Household Composition		Model 1 (N=675)			Model 2 (N=672)			Model 3 (N=675)			Model 4 (N=672)					
		Time 1 (1966)	Time 2 (1976)	B	SE	β	B	SE	β	B	SE	β	B	SE	β	
Time 1 (1966)																
1. Husband	1. Husband														Reference	
2. Lone Adult	2. Lone Adult	-8.24	3.05	-0.12**	-7.23	3.06	-0.10*	-2.57	3.60	-0.04	-3.32	3.58	-0.05			
3. Other Adult	3. Other Adult	-10.17	4.64	-0.09*	-10.04	4.60	-0.09*	-5.98	4.78	-0.05	-6.81	4.75	-0.06			
4. Lone or Other Adult	4. Husband	-9.90	4.08	-0.10*	-9.73	4.04	-0.10*	-8.07	4.18	-0.08†	-8.48	4.16	-0.09*			
5. Husband	5. Lone Adult	-11.83	3.77	-0.13**	-11.46	3.74	-0.13**	-7.89	3.96	-0.09*	-8.23	3.94	-0.09*			
6. Other Adult	6. Lone Adult	-11.70	5.97	-0.08*	-11.59	5.91	-0.08*	-6.66	6.11	-0.04	-7.59	6.07	-0.05			
7. Husband	7. Other Adult	-11.63	4.17	-0.11**	-12.38	4.13	-0.12**	-9.37	4.20	-0.09*	-10.40	4.18	-0.10*			
8. Lone Adult	8. Other Adult	-11.06	3.49	-0.13**	-10.84	3.46	-0.13**	-6.47	3.86	-0.08†	-7.52	3.85	-0.09†			
Controls																
Age		-0.50	0.20	-0.10**	-0.39	0.20	-0.08*	-0.47	0.20	-0.09*	-0.38	0.20	-0.08†			
Chronic Condition at Time 1		-9.15	3.51	-0.10**	-8.95	3.48	-0.10**	-9.11	3.49	-0.10**	-9.03	3.47	-0.10**			
SES:																
Years of Education					1.58	0.45	0.13***				1.27	0.47	0.11**			
Early Poverty:																
Not Poor Time 1 or Time 2															Reference	
Poor Time 1 only								-4.75	3.11	-0.07	-3.56	3.13	-0.05			
Poor Time 2 only								-9.45	3.58	-0.11**	-8.39	3.58	-0.10*			
Poor Time 1 and Time 2								-9.56	3.16	-0.16**	-7.17	3.28	-0.12*			
R ² (F test)																
				0.05 (3.98***)					0.07 (4.92***)					0.08 (4.38***)		

Note: Negative coefficients indicate poorer health for the household composition group compared to the reference group (Husband-Husband).

† p<.10
* p<.05

$p < .01$
**

$p < .001$

Effects of Early Primary-Adult Household Composition on the Later Health of African American Women: Regression Models for Depressed Mood

Table 5

		Depressed Mood at Time 3 (1997)											
Household Composition		Model 1 (N=675)			Model 2 (N=672)			Model 3 (N=675)			Model 4 (N=672)		
Time 1 (1966)	Time 2 (1976)	B	SE	β	B	SE	β	B	SE	β	B	SE	β
1. Husband	1. Husband		Reference			Reference			Reference			Reference	
2. Lone Adult	2. Lone Adult	2.30	0.73	0.14**	2.05	0.73	0.12**	1.46	0.86	0.09†	1.59	0.85	0.09†
3. Other Adult	3. Other Adult	1.16	1.09	0.04	1.13	1.09	0.04	0.57	1.13	0.02	0.75	1.13	0.03
4. Lone or Other Adult	4. Husband	0.30	0.96	0.01	0.27	0.95	0.01	0.01	0.99	0.00	0.10	0.99	0.00
5. Husband	5. Lone Adult	1.43	0.89	0.07	1.34	0.89	0.06	0.92	0.94	0.04	0.98	0.94	0.05
6. Other Adult	6. Lone Adult	0.98	1.41	0.03	0.96	1.40	0.03	0.29	1.45	0.01	0.50	1.44	0.01
7. Husband	7. Other Adult	1.05	0.98	0.04	1.20	0.98	0.05	0.75	1.00	0.03	0.97	1.00	0.04
8. Lone Adult	8. Other Adult	0.25	0.83	0.01	0.21	0.82	0.01	-0.44	0.92	-0.02	-0.20	0.92	-0.01
Controls													
Age		-0.09	0.05	-0.07†	-0.11	0.05	-0.09*	-0.09	0.05	-0.08*	-0.11	0.05	-0.09*
Fairly/Very Often Sad at Time 1		3.18	0.73	0.18***	3.02	0.74	0.17***	3.11	0.74	0.17***	3.00	0.74	0.17***
Fairly/Very Often Anxious at Time 1		0.62	0.57	0.04	0.71	0.57	0.05	0.61	0.57	0.04	0.69	0.57	0.05
SES:													
Years of Education					-0.33	0.11	-0.12**				-0.29	0.11	-0.10**
Early Poverty:													
Not Poor Time 1 or Time 2													
Poor Time 1 only								0.76	0.74	0.05	0.49	0.75	0.03

Depressed Mood at Time 3 (1997)											
Household Composition			Model 1 (N=675)			Model 2 (N=672)			Model 3 (N=675)		
Time 1 (1966)	Time 2 (1976)		B	SE	β	B	SE	β	B	SE	β
Poor Time 2 only						1.20	0.85	0.06	0.95	0.85	0.05
Poor Time 1 and Time 2						1.42	0.75	0.10 [†]	0.85	0.78	0.06
R^2 (F test)			0.07 (5.06 ^{***})			0.09 (5.67 ^{***})			0.08 (4.22 ^{***})		

Note: Positive coefficients indicate poorer health for household composition group compared to reference group (Husband-Husband).

[†] $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$.

Table 6
Effects of Early Primary-Adult Household Composition on the Later Health of African American Women: Logistic Regression Models for Anxiety (Fairly or Very Often Anxious vs. Occasionally or Never)

Household Composition		Anxious at Time 3 (1997)											
		Time 2 (1976)				Model 1 (N=676)				Model 2 (N=673)			
		B	SE	e ^B	B	SE	e ^B	B	SE	e ^B	B	SE	e ^B
Time 1 (1966)													
1. Husband	1. Husband	0.94	0.32	2.55**	0.94	0.33	2.57**	0.79	0.38	2.21*	0.86	0.38	2.36*
2. Lone Adult	2. Lone Adult	0.47	0.50	1.60	0.50	0.51	1.65	0.43	0.52	1.54	0.51	0.53	1.66
3. Other Adult	3. Other Adult	0.84	0.41	2.31*	0.88	0.42	2.41*	0.86	0.43	2.36*	0.92	0.43	2.51*
4. Lone or Other Adult	4. Husband	0.93	0.38	2.53*	0.96	0.38	2.60*	0.97	0.40	2.63*	1.02	0.41	2.78*
5. Husband	5. Lone Adult	0.99	0.56	2.68†	1.03	0.56	2.80†	0.97	0.58	2.63†	1.05	0.59	2.85†
6. Other Adult	6. Lone Adult	0.51	0.45	1.66	0.57	0.46	1.78	0.55	0.46	1.73	0.63	0.47	1.88
7. Husband	7. Other Adult	1.07	0.35	2.92**	1.11	0.36	3.04**	1.03	0.39	2.82**	1.11	0.40	3.05**
8. Lone Adult	8. Other Adult												
<u>Controls</u>													
Age		-0.01	0.02	0.99	-0.01	0.02	0.99	-0.01	0.02	0.99	-0.01	0.02	0.99
Fairly/Very Often Sad at Time 1		0.18	0.28	1.19	0.14	0.28	1.16	0.13	0.29	1.14	0.11	0.29	1.12
Fairly/Very Often Anxious at Time 1		0.49	0.23	1.64*	0.53	0.23	1.69*	0.49	0.23	1.64*	0.53	0.24	1.69*
SES:													
Years of Education					-0.06	0.05	0.94				-0.06	0.05	0.95
Early Poverty:													
Not Poor Time 1 or Time 2													
Poor Time 1 only													

Household Composition	Anxious at Time 3 (1997)											
	Model 1 (N=676)			Model 2 (N=673)			Model 3 (N=676)			Model 4 (N=673)		
	B	SE	e ^B	B	SE	e ^B	B	SE	e ^B	B	SE	e ^B
Time 1 (1966)												
Poor Time 2 only												
Poor Time 1 and Time 2												
Constant χ^2 (df)												

Note: Positive coefficients indicate poorer health for household composition group compared to reference group (Husband-Husband). e^B =exponentiated B (odds ratio).

† $p<.10$
 * $p<.05$
 ** $p<.01$
 *** $p<.001$.