

**Race Disparities in Early Marriage and Health in the Transition to Adulthood**  
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***Abstract***

Although prior research has linked marriage with positive physical and mental health outcomes, little work has specifically focused on the relationship between early marriage and health. This is particularly true for African Americans, despite well-documented racial differences in health profiles and marriage behavior. This paper addresses racial differences in selection into marriage and subsequent changes in health during the transition to adulthood using the National Longitudinal Study of Adolescent Health (Add Health). This research examines three categories of negative health outcomes: physical health, mental health, and risk behaviors. Discrete-time event history logistic regression models are used to predict transitions to early marriage as a function of early health. Change models are used to examine the subsequent health effects of marriage while taking potential selection into marriage and baseline health into account. Preliminary results indicate the role of socioeconomic status and health in predicting marriage differ greatly by race and sex.

***Introduction***

Although prior research has linked marriage with positive physical and mental health outcomes (Umberson et al. 1996; Waite and Gallagher 2000), little work has specifically focused on the relationship between early marriage and health in the transition to adulthood, the life stage in which marriage promotion policies have most recently been focused. In addition, despite well-documented racial differences in health profiles and marriage behavior, research that takes into account such disparities in both entry into marriage and its subsequent impacts on health is scarce. This research examines racial disparities in the links between early marriage and multi-dimensional health outcomes using data from the National Longitudinal Study of Adolescent Health (Add Health). In an attempt to sort out selection and protective effects of marriage (Hu and Goldman 1990; Simon 2002), our research addresses two specific research questions:

- 1) What health and socioeconomic background characteristics are associated with entry into early marriage for young white and African American men and women?
- 2) How does early marriage in turn influence health outcomes during the transition to adulthood?

Marriage has been hypothesized to positively impact health through disengagement from risk behaviors and the promotion of positive wellbeing. These health benefits of marriage have been attributed to increased social support and economic resources

(Lillard and Waite 1995; Lupton and Smith 2003) – derivatives that may not be applicable to early marriages, which have been linked to higher rates of dissolution (Teachman 1983) and lower subsequent earnings (Teachman, Polonko & Scanzoni 1986). In addition, the available evidence indicates that marriage among African-Americans is especially unstable and prone to dissolution compared to whites (Ruggles 1997). Further, poor returns to marriage have caused many African-American women to pass up marriage altogether (Edin 2000; Edin and Kefalas 2002; Wilson 1987).

The association between marriage and health is often unclear because of the selective nature of the population entering marital unions; among adults, those with better physical and mental health and desirable health-related habits (such as abstinence from drinking, smoking, and other risk behaviors) are more likely to marry than individuals with inferior health profiles (Goldman 1993, 1994). These differences are especially pronounced within the African-American community; those who marry differ along health and socioeconomic background dimensions substantially from those who remain single (Clarkwest 2006). How these distinctions play out in the young adult population is unknown.

This paper addresses racial differences in selection into marriage and subsequent changes in health during the transition to adulthood using the exceptionally rich data provided by Add Health. The longitudinal nature of the data, which observes respondents in adolescence as well as early adulthood, allows us to address selection into marriage (research question 1). The data include multiple measures of physical and mental health as well as risk behaviors across time, allowing us to comprehensively assess changes in health during the transition to adulthood (research question 2). We furthermore examine gender differences in the links between marriage and health. Our research focuses on the young adult stage of the life cycle, when health and marriage trajectories are set. We contribute new data on the relationship between marriage and physical health, marriage and mental health, and causal linkages between marriage and behaviors (obesity, physical activity) that can influence future cardiovascular disease and diabetes.

Young adulthood is a crucial and understudied stage in the life course with implications for future adult attainments and health (Call et al. 2002; Schulenberg et al. 1997). Multiple stressors, including moving out of the parental home, completing post-secondary education, finding work, and starting a family have long made mental health a topic of interest for researchers. In recent years, the onset and prevalence of a number of physical health conditions has begun to rise in this age group as well. For example, inactivity and lack of physical exercise has migrated into the adolescent and young adult ages (Andersen et al. 1998) and as a result of these trends, young adults are at increased risk of metabolic syndrome, high blood pressure, and premature coronary artery disease (Cook et al. 2003; Erikssen 2001; Muntner et al. 2004). In addition, the lengthening of the transition to adulthood has extended the period of time during which young people engage in health risk behaviors (Bachman et al. 1997).

This research is important because large racial and ethnic disparities in both health and marriage currently persist. The striking burden of illness experienced by African-Americans, despite improvements in the overall health of the nation, are a serious public health concern. Indeed, the Department of Health and Human Services (2006), Centers for Disease Control (2006) and National Institutes of Health (2000), among other organizations, have all highlighted the need to

reduce and eventually eliminate these troubling race and ethnic disparities. At the same time, there is currently great interest within the public policy arena in marriage promotion, and low levels of marriage observed within the African-American community are of particular concern. President Bush's Healthy Marriage Initiative is tasked with promoting marriage under the assumption that successful and happy families result in positive outcomes, including those related to health. Understanding whether the expected protective health effects of early marriage are relevant for the African-American population is important from both public health and public policy perspectives. Our research will also shed light on the role of health profiles within the African-American community in fostering marriage.

### ***Research design and methods***

This research uses data from Add Health, a longitudinal, nationally representative, school-based study of ethnically diverse U.S. adolescents designed to explore the causes of health-related behaviors. Wave I (WI) was collected in 1994 and 1995, when respondents were in grades 7 to 12 (aged 12 to 19 years), and consists of both an In-School Questionnaire, which was administered to every student in a nationally representative sample of schools [N= 90,118], and a more extensive In-Home Interview [N=20,745] administered to a subsample of these individuals. In Wave III (WIII), all located WI In-Home respondents, now aged 18-26 years (2002) were re-interviewed [N=15,197]. Our final Add Health sample includes 9,803 respondents: WI and WIII In-Home respondents remaining after dropping non-blacks and non-whites (including Hispanics, Asians, and others), pregnant women in WIII, married individuals in WI, those with more than one marriage recorded by WIII, and those who are disabled. Our final sample consists of 1,488 African-American females, 3,708 white females, 1,202 African-American males, and 3,405 white males.

A major strength of Add Health is the extensive health and SES information available and the ability to create measures at multiple levels of social context. This research examines three categories of negative health outcomes at the individual level: physical health, mental health, and risk behaviors. Measures of physical health include obesity, poor self-reported health, and physical inactivity. Mental health (depression) is measured using questions from the CES-D scale, and risk behavior is represented by binge drinking and smoking. Alternatively, a composite poor health measure (generated as a count of all six health indicators) is used.

In addition, the role of individual, peer, school, and community-level socioeconomic status indicators in predicting marriage and health are incorporated. Unique to our analysis is the use of contextual family structure measures that tap married-couple role models in the social context of adolescents' lives. Preliminary descriptive statistics for these multi-level SES variables as well as our health measures are presented in Table 1. Consistent with previous research, African Americans have lower rates of marriage than whites and males have lower rates of marriage than females. Clearly, the role of SES and health in predicting marriage differ greatly by race and gender.

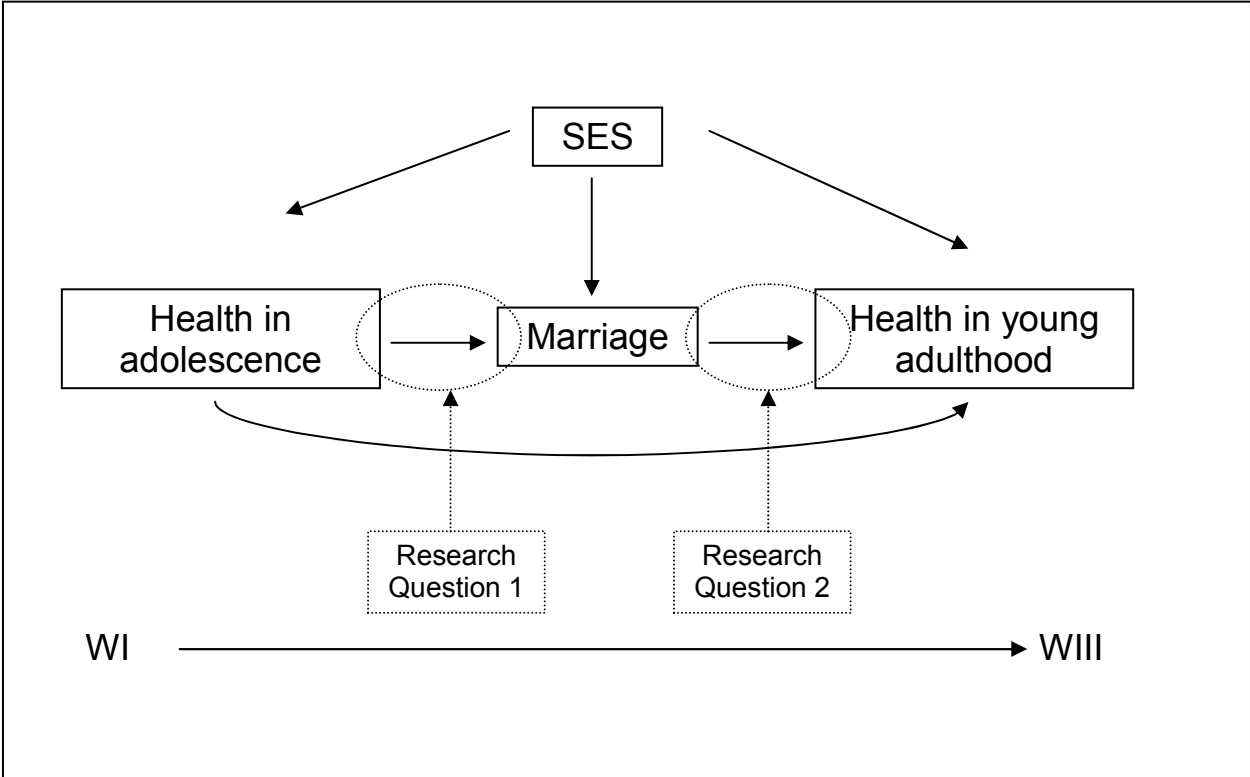
We propose that baseline health in adolescence impacts both selection into marriage and health in young adulthood (see Figure 1). As noted, Part One of the proposed research is concerned with the process of selection into marriage for African-American young adults, particularly along

health dimensions and background characteristics that are directly related to health. Significant predictors of marriage identified in Part One will be incorporated into Part Two analyses, which examine the relationship between marriage and subsequent health.

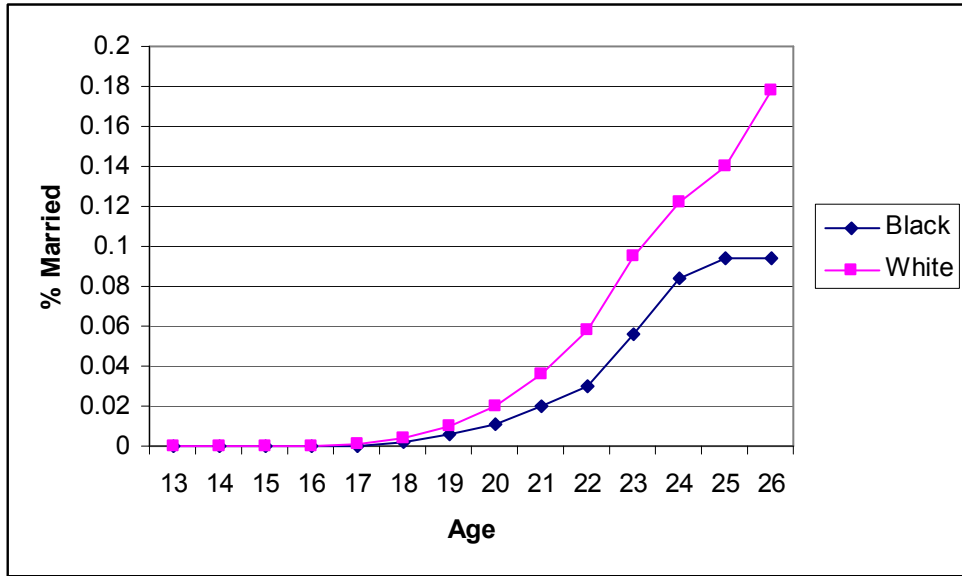
Discrete-time event history logistic regression models predicting a transition to early marriage (defined as marriage between WI and WIII) are estimated using person-year data from Add Health (Cox 1972; Allison 1990). These models set early marriage as a function of the baseline physical and mental health characteristics and risk behaviors from WI and comprehensive measures of SES described above. Additional controls for age, religiosity, nonmarital births, and cohabitation are included as well. Figures 2-5 present Kaplan-Meier survival curves depicting marriage between age 13 and 26 by race and gender. These graphs highlight important racial and health status differences in marriage. Table 2 presents preliminary results from the multivariate analyses; after controlling for multi-level measures of SES, health selection into marriage persists – particularly for whites.

Part Two of the proposed research will examine the subsequent health effects of marriage while taking potential selection into marriage into account. To do this, we will use a change model that sets health at WIII (measured by identical physical health, mental health, and risk behavior indicators to those created at WI and depicted in Table 1) as a function of the initial level of adolescent health at WI, marriage between WI and WIII, and a set of SES and control variables measured at WI (Allison 1990). Particular emphasis will be given to those health and SES indicators found to be predictive of marriage in Part One.

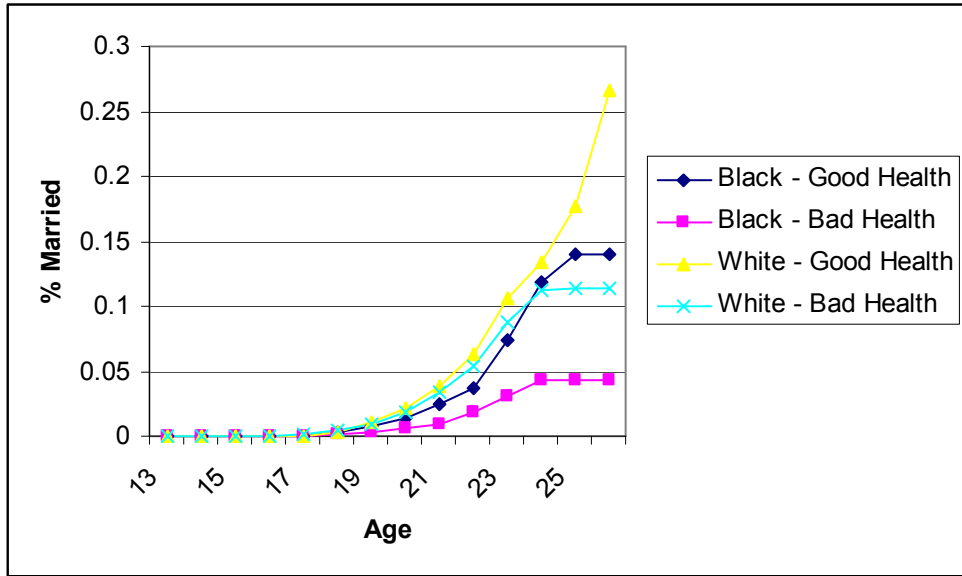
Figure 1: Conceptual Model



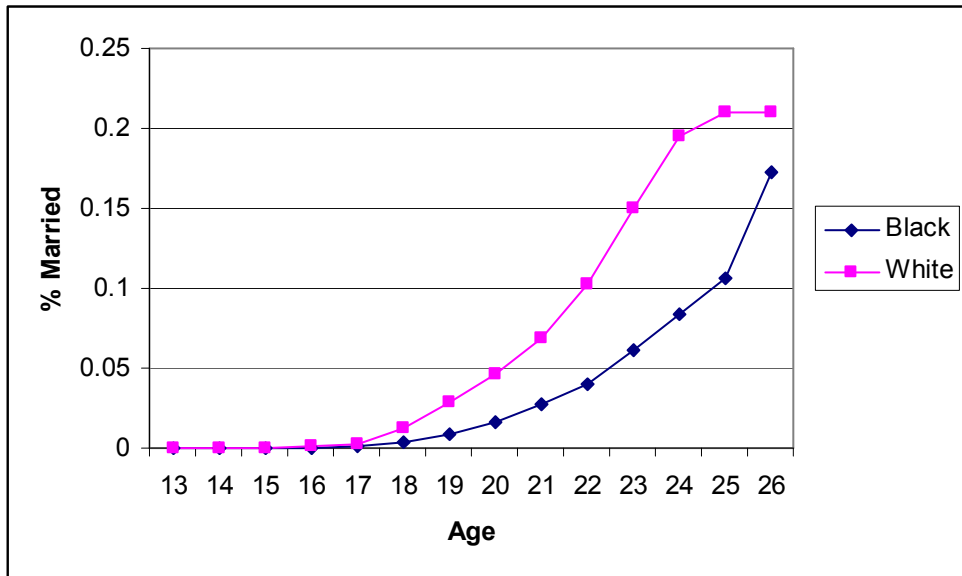
*Figure 2: Kaplan-Meir marriage failure by race for males*



**Figure 3: Kaplan-Meir marriage failure by race and health status for males**

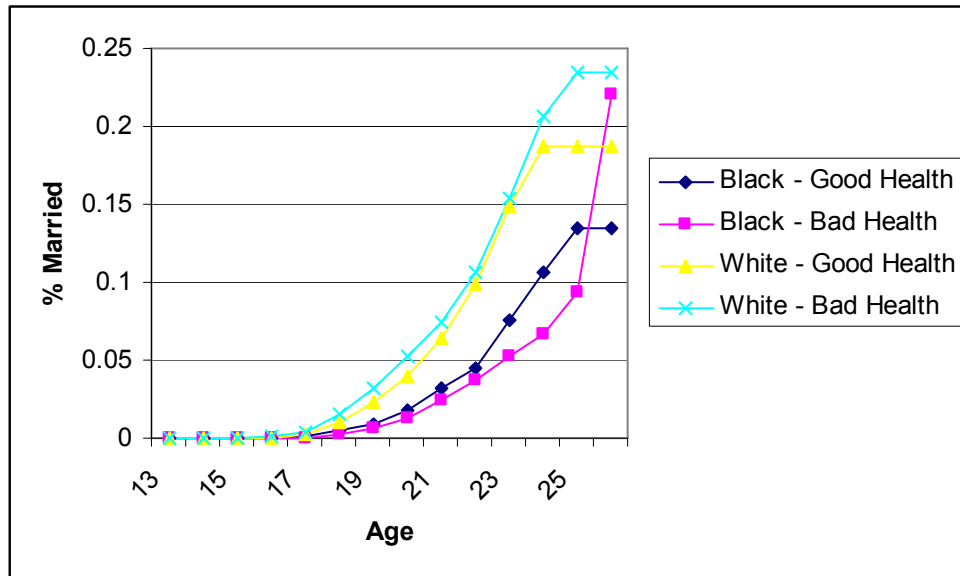


*Figure 4: Kaplan-Meir marriage failure by race for females*





**Figure 5: Kaplan-Meier marriage failure by race and health status for females**



**Table 1: Variable means, bivariate associations and standard errors by sex and race**

Variable	Female				Male			
	Black		White		Black		White	
	Mean	Bivariate	Mean	Bivariate	Mean	Bivariate	Mean	Bivariate
<b>OUTCOME</b>								
Married by WIII	0.116	-----	0.242	-----	0.103	-----	0.143	-----
	0.013	-----	0.016	-----	0.017	-----	0.012	-----
<b>HEALTH MEASURES AT WI</b>								
<i>Physical Health</i>								
Obese	0.136	-0.582 *	0.063	-0.129	0.125	-1.286 *	0.097	-0.199
	0.010	0.525	0.006	0.197	0.015	0.491	0.007	0.213
Poor self-reported health	0.369	-0.086	0.318	0.346 **	0.265	-0.545	0.276	-0.032
	0.022	0.218	0.013	0.097	0.025	0.335	0.011	0.145
<i>Mental Health</i>								
Depressed	0.180	0.096	0.144	0.390 **	0.084	0.716	0.069	0.336
	0.013	0.226	0.009	0.128	0.013	0.469	0.005	0.186
<i>Risk Behaviors</i>								
Binge drinking	0.133	0.221	0.274	0.410 **	0.208	-0.155	0.314	0.386 **
	0.013	0.242	0.015	0.121	0.024	0.454	0.018	0.141
Regular smoking	0.119	-0.329	0.325	0.328 **	0.177	-2.062 ***	0.301	0.302 *
	0.014	0.325	0.016	0.115	0.020	0.427	0.015	0.146
Physical inactivity	0.475	0.058	0.388	0.674 ***	0.254	0.510 *	0.279	0.509 ***
	0.026	0.236	0.014	0.096	0.020	0.225	0.013	0.116
<i>Composite Health Measure</i>								
	1.411	-0.040	1.512	0.248 ***	1.113	-0.180	1.335	0.165 **
	0.052	0.082	0.051	0.039	0.051	0.139	0.049	0.058
<b>INDIVIDUAL LEVEL CONTROLS</b>								
Low SES at WI	1.880	0.569	1.190	0.415 ***	1.845	-0.151	1.166	0.295 ***
	0.073	0.297	0.043	0.064	0.081	0.158	0.042	0.070
Low religiosity at WI	0.132	-1.121 *	0.279	-0.297 *	0.229	-0.144	0.323	-0.110
	0.017	0.445	0.015	0.129	0.028	0.425	0.015	0.171
Ever cohabited between WI and WIII	0.406	0.358	0.454	0.602 ***	0.433	0.080	0.375	0.712 ***
	0.024	0.213	0.018	0.121	0.027	0.336	0.016	0.147
Non-marital birth	0.441	0.224	0.206	0.232	-----	-----	-----	-----
	0.026	0.231	0.015	0.125	-----	-----	-----	-----
Age	15.516	0.336 ***	15.307	0.413 ***	15.729	0.316 **	15.486	0.451 ***
	0.200	0.064	0.132	0.035	0.224	0.098	0.134	0.048
<b>PEER LEVEL SES</b>								
High % parent HS or less: peer	0.335	0.149	0.331	0.479 **	0.271	0.780 *	0.310	0.420 *
	0.035	0.266	0.027	0.142	0.040	0.349	0.027	0.163
High % single parent: peer	0.513	0.327	0.291	0.002	0.331	0.562	0.243	-0.162
	0.029	0.211	0.020	0.120	0.023	0.292	0.015	0.137
No friends	0.274	-0.384	0.304	0.091	0.463	-0.293	0.364	-0.042
	0.026	0.258	0.034	0.161	0.029	0.326	0.030	0.164
<b>SCHOOL LEVEL SES</b>								
High % parent HS or less: school	0.311	0.493 *	0.389	0.335 *	0.291	0.523	0.371	0.531 **
	0.069	0.243	0.048	0.162	0.065	0.361	0.045	0.187
High % single parent: school	0.629	0.026	0.167	-0.083	0.538	0.551	0.139	0.022
	0.050	0.246	0.033	0.196	0.048	0.347	0.027	0.271
<b>NEIGHBORHOOD LEVEL SES</b>								
High % parent less than HS: neighborhood	0.535	0.003	0.175	0.727 ***	0.518	-0.083	0.187	0.593 **
	0.051	0.238	0.029	0.193	0.056	0.331	0.028	0.186
High % female headed household: neighborhood	0.735	-0.108	0.185	0.390 *	0.686	0.028	0.175	0.269
	0.030	0.245	0.031	0.165	0.034	0.301	0.028	0.170
High racial dispersion	0.080	-0.379	0.375	-0.073	0.093	0.279	0.351	-0.142
	0.035	0.416	0.050	0.176	0.037	0.617	0.047	0.190
Urban tract	0.560	-0.304	0.440	-0.583 **	0.548	-0.157	0.435	-0.513 **
	0.078	0.257	0.049	0.165	0.076	0.375	0.048	0.178
<b>N</b>	1488		3708		1202		3405	

Data are weighted.

Standard Errors are in parantheses.

\* significant at .05 level

\*\* significant at .01 level

\*\*\* significant at .001 level

**Table 2: Discrete time logistic regression results by sex and race**

	Females		Males	
	Black	White	Black	White
<b>HEALTH MEASURES AT WI</b>				
<i>Physical Health</i>				
Obese	-0.600 0.555	-0.416 0.188	* -1.237 0.473	** -0.419 0.209
Poor self-reported health	-0.083 0.246	0.113 0.082	-0.069 0.341	-0.144 0.142
<i>Mental Health</i>				
Depressed	0.044 0.243	0.126 0.121	0.648 0.438	-0.036 0.189
<i>Risk Behaviors</i>				
Binge drinking	0.208 0.293	-0.118 0.107	-0.019 0.514	-0.125 0.132
Regular smoking	-0.444 0.374	0.019 0.113	-2.189 0.468	*** -0.094 0.135
Physical inactivity	-0.263 0.218	0.314 0.087	*** 0.254 0.238	0.172 0.114
<i>Composite Health Measure</i>	-0.165 0.098	0.059 0.032	-0.257 0.140	-0.083 0.056
<b>INDIVIDUAL LEVEL CONTROLS</b>				
Low SES at WI	0.279 0.137	* 0.320 0.054	*** -0.018 0.168	0.277 0.067
Low religiosity at WI	-1.100 0.415	** -0.558 0.107	*** -0.176 0.430	-0.287 0.164
Ever cohabited between WI and WIII	0.113 0.269	0.164 0.129	-0.034 0.363	0.333 0.155
Non-marital birth	-0.062 0.244	-0.109 0.131		
Age	0.368 0.030	*** 0.380 0.012	*** 0.379 0.047	*** 0.408 0.019
<b>PEER LEVEL SES</b>				
High % parent HS or less: peer	-0.264 0.306	0.290 0.111	** 0.688 0.350	* 0.017 0.138
High % single parent: peer	0.208 0.310	-0.154 0.122	0.701 0.320	* -0.243 0.114
No friends	-0.444 0.504	0.103 0.133	0.632 0.361	-0.111 0.171
<b>SCHOOL LEVEL SES</b>				
High % parent HS or less: school	0.159 0.304	-0.042 0.134	-0.025 0.394	0.345 0.185
High % single parent: school	-0.042 0.248	-0.186 0.191	0.457 0.283	0.050 0.262
<b>NEIGHBORHOOD LEVEL SES</b>				
High % parent less than HS: neighborhood	-0.055 0.246	0.495 0.156	** -0.446 0.220	* 0.280 0.186
High % female headed household: neighborhood	-0.072 0.228	0.149 0.128	0.142 0.285	0.060 0.181
High racial dispersion	-0.405 0.568	-0.141 0.151	0.572 0.501	-0.267 0.166
Urban tract	0.075 0.252	-0.587 0.130	*** -0.164 0.311	-0.545 0.170
N	1488	3708	1202	3405

Data are weighted.

Standard errors listed below coefficients

\* significant at .05 level

\*\* significant at .01 level

\*\*\* significant at .001 level

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