



Stress trajectories, health behaviors, and the mental health of black and white young adults

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ABSTRACT

This paper uses data from the National Longitudinal Study of Adolescent Health to examine the mental health of non-Hispanic black and white young adults in the US. We use latent growth curve modeling to characterize the typical stress trajectories experienced by black and white young adults spanning the bulk of their lives. We identify the following four stress trajectories: 1) relatively stress free; 2) stress peak at age 15 and a subsequent decline; 3) stress peak at age 17 and a subsequent decline; and 4) a moderately high chronic stress. Results indicate that black adolescents have significantly higher risk of being in all three of the stressful classes compared to white adolescents. Stress exposure is strongly associated with depression and the race differences in stress profiles account for a modest amount of the observed race differences in mental health. We do not observe any race differences in behavioral responses to stressors; black youth are no more likely than white youth to engage in poor health behaviors (e.g., smoking, drinking, or obesity) in response to stress. We provide tentative support for the notion that poor health behaviors partially reduce the association between stress and depression for blacks but not whites. These findings contribute to unresolved issues regarding mental and physical health disparities among blacks and whites.

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Introduction

Persons exposed to a relatively large number of stressors tend to report worse mental health compared to those who have experienced very few of these events in their lives (Kessler, 1997; Turner 2003; Turner & Lloyd 1999). This is particularly important for health-disparities research because racial and ethnic minorities report a greater number of chronic and acute stressors compared to non-Hispanic whites in the US (Boardman, 2004; Schulz et al., 2000; Williams & Collins, 1995). However, despite race differences in stress exposure, black adults typically report comparable or better mental health compared to white adults (Breslau et al., 2006; Kessler, McGonagle, Zhao et al., 1994; Riolo, Nguyen, Greden, & King, 2005). Although some recent evidence has shown that black adults face an increased risk of depression (8.0%) compared to non-Hispanic white adults (4.8%) (Pratt & Brody, 2008) this finding stands out among research that reports more salutary mental health among black respondents (Haralson et al., 2002; Kessler, Mickelson, & Williams, 1999).

Some have argued that the somewhat contradictory relationship between stress and depression among black and white adults can be

resolved by accounting for group differences in poor health behaviors (PHB) including drinking, smoking, and over-eating (Jackson, Knight, & Rafferty, 2010). Specifically, moderate use of alcohol or nicotine denote relatively cheap and effective mechanisms to mitigate the adverse physiological effects of stress (Benowitz, 1996; Lipton, 1994; Peele & Brodsky, 2000) and the same has been shown for the consumption of fatty and high caloric foods (Dallman, Pecoraro, Akana et al., 2003b). The use of substances in light of stress exposure is regularly shown among adults (Boardman, Finch, Ellison, Williams, & Jackson, 2001) and a growing body of work has linked substance use among adolescents with a myriad of stressful events including abuse, work intensity, academic pressure (high school and/or college), relationship and sexuality issues, exposure to violence, and delinquent behavior (Dauber, Hogue, Paulson, & Leiferman, 2009; Hyucksun, Edwards, Heeran, & Amodeo, 2009; Paschall, Flewelling, & Russell, 2004).

The strongest evidence to date for the moderating influence of PHB on the stress-mental health relationship is the recent study by Jackson et al. (2010). The research team used data from the Americans' Changing Lives Survey to predict a DSM-III measure of depression as a function of nine stressful events within the past three years. They show that increasing numbers of stressful life events increases the risk of depression among both black and white adults. However, they also show that this association is conditional

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upon the number of PHB in which individuals are engaged. For whites, the association between stressors and mental health is worse (albeit only moderately significant) for those with the highest levels of PHB. *Importantly, for blacks, the association between stress and depression is strongest for those who do not engage in any PHB and stressors have virtually no influence on mental health for blacks who engage in several PHB.* Importantly, Mezuk et al. (2010) replicate these findings using an independent sample of adults from the Baltimore Epidemiologic Catchment Area Study. Their study uses data from a longer period of time and they focus specifically on depression syndrome rather than general psychological distress. Despite these differences, the convergence of these findings provides fairly strong support for the coping behavior explanation for the seeming paradox between stress exposure and mental health of black adults.

The purposes of this paper are twofold. First, very few studies have made efforts to characterize the role of race as structuring stress exposure, social norms about health-related behaviors, and subsequent mental health sequelae, and none have specifically looked at younger populations. Emphasizing younger populations is important for diagnostic purposes (Eaton & Kessler, 1981; George & Lynch, 2003; Perreira, Deeb-Sossa, Harris, & Bollen, 2005) but also because minorities experience higher levels of depressive symptoms in early life (Adkins, Wang, Dupre, van den Ord, & Elder, 2009). If the social mechanisms behind stress-coping responses begin early in life then this denotes an important opportunity to elaborate upon this topic and a potentially important intervention mechanism for effective health policy.

Second, to date, no study has examined race differences in behavioral responses to stress. Jackson et al. (2010) and Mezuk et al. (2010) argue that African-Americans exhibit comparable mental health levels as non-Hispanic whites despite greater levels of chronic stress because of socially acceptable coping strategies involving PHB but neither study presents evidence that blacks are more likely than whites to turn to PHB in response to stress. If the explanation for the stress-mental health paradox is the increased prevalence of PHB among blacks, then the effect of stress on smoking, drinking, and obesity should be higher for blacks compared to whites. If we do not find evidence for this, then it suggests a different mechanism for this fairly complex association. As such, our paper contributes to this important line of research by providing a test of the specific mechanisms of the stress-coping model developed by Jackson et al. (2010) among a younger cohort of black and white adults.

Methods

Data

All data in these analyses are drawn from the National Longitudinal Study of Adolescent Health (Add Health), a study that examines health and health-related behaviors among a nationally representative sample of adolescents in seventh through twelfth grades (Harris, 2003). In 1994, roughly 90,000 adolescents from 134 schools completed questionnaires about their daily activities, health-related behaviors, and basic social and demographic characteristics. Respondents were then followed up with three in-home interviews (Wave I [1995], Wave II [1996], and Wave III [2001]) with more detailed questions across a number of important domains. Our study includes only non-Hispanic White and non-Hispanic Black respondents and we use data obtained from all three waves of data collection to characterize the stress trajectories of the respondents. The measures and their corresponding wave of collection are all described below. All data are weighted to reflect the complex sampling design of the Add Health study (Chantala & Tabor, 1999).

Measures

Social demographic control variables used in this study included sex (1 if male, 0 if female), age, and region (1 if living in south, 0 otherwise) at Wave III. Because behaviors such as smoking and drinking are associated with college attendance, we also include a control which indicates whether the respondent is in college during Wave III. We also include a control for the respondent's socioeconomic status at wave I which we believe to be a better measure of socioeconomic background compared to the respondents current SES. This measure is a composite of three census tract variables (proportion of tract age 25+ without high school diploma or equivalent; proportion of tract age 15+ with at least a college degree; and median household income), household income, and highest education level of a parent ($\alpha = .81$).

The key measures in our study include depression, stressful life events, and poor health behaviors. *Depression:* Our study makes use of the nine item version of the Center for Epidemiologic Studies depression scale (CES-D). Respondents were asked how often during the last seven days (0 = never or rarely to 3 = most of the time or all of the time) they felt the following: you were bothered by things that usually don't bother you; you could not shake off the blues, even with help from your family and your friends; you felt that you were just as good as other people (reverse); you had trouble keeping your mind on what you were doing; you were depressed; you were too tired to do things; you enjoyed life (reverse); you were sad; you felt that people disliked you ($\alpha = .80$). All statistical analyses use Wave III depression as the dependent variable. To estimate the influence of health behaviors and stress on the risk of depression we also control for Wave I depression in the multivariate models. As such, the dependent variable denotes change in depression from Wave I to Wave III. Based on previous research (Schulz et al., 2000) we use a conservative threshold and identified those with score of 10 or higher as having depression.

Poor health behaviors: We followed the approach of Jackson et al. (2010) and identified three PHB for this study obtained from Wave III of the study. Regular drinking is characterized by the consumption alcohol at least 1–2 times per week over the past year. While this amount of alcohol consumption is not necessarily unhealthy, it is included in our scale because of the regularity with which it occurs. Together with smoking and obesity, we believe that this measure captures a less healthy lifestyle compared to those who do not regularly consume alcohol. Similarly, regular smoking is characterized as smoking at least one cigarette per day for 30 consecutive days. Finally, obesity is measured as a function of respondent's measured height and weight from the Wave III study. Those with a body mass index of 30 or higher are characterized as obese. As with Jackson et al. (2010), PHB is the sum of these three behaviors (ranging from 0 to 3).

Stressful life events: We analyzed all three waves of Add Health and identified for each respondent the age at which various stressful life events (SLE) occurred. As a guideline we used the stressful life events list found in Adkins et al. (2009) and identified the following occurrences of stress: ran away from home, was expelled from school, unwanted pregnancy, abortion, gave baby up for adoption, cohabitation ended, romantic relationship ended, marriage ended, non-romantic sexual relationship ended, diagnosed with STD, attempted suicide, threatened someone, shot or stabbed someone, injured someone in a fight, discharged from the military, entered the military, evicted from home, utility service cut off, receiving welfare, involuntarily cut from welfare, juvenile conviction or detention, adult conviction, adult jail time, miscarriage, death of biological father, death of biological mother, death of parental figure, death of a romantic relationship, death of a spouse, death of a baby, suicide of friend or family member, baby had

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