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ORIGINAL PAPER

Working in High School and Adaptation in the Transition to Young Adulthood among African American Youth

José A. Bauermeister · Marc A. Zimmerman · Tracey E. Barnett · Cleopatra Howard Caldwell

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Abstract Researchers have found mixed support for documenting whether work is protective or harmful during adolescence. This study examined the association between work and problem behaviors among African American youth (N = 592; 53% female; *M* = 14.8 years, *SD* = .60) followed from mid-adolescence to young adulthood over eight Waves (90% response rate over the first four Waves and a 68% response rate across all eight Waves). We explored three competing operationalizations of work: work history (never worked, worked), work intensity (no work, 20 h or less, and 21 h or over), and work trajectories (never worked, episodic work, stopped working, late starter, and consistent worker). Non-working youth reported higher marijuana use during young adulthood than their working counterparts. Nonworkers reported lower self-acceptance during young adulthood than those working greater number of hours per week. Differences in work trajectories for cigarette use, depression, and anxiety during adolescence imply that when and for how long youth work are also important factors to explore. Our findings lend tentative support to the work benefits perspective and suggest that the association between work and problem behaviors may depend on the work measure used. We discuss the implications of employing different work measures in adolescent research.

Keywords Adolescent development · Work transitions · Employment · Externalizing behavior · Mental health · African American

J. A. Bauermeister (✉)
HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute and Columbia University, 1051 Riverside Drive (Unit 15), New York, NY 10032, USA
e-mail: jb2855@columbia.edu

M. A. Zimmerman · C. H. Caldwell
Department of Health Behavior and Health Education, School of Public Health, University of Michigan, Ann Arbor, MI, USA

M. A. Zimmerman
e-mail: marcz@umich.edu

C. H. Caldwell
e-mail: cleoc@umich.edu

T. E. Barnett
Rehabilitation Outcomes Research Center, North Florida/South Georgia Veterans Health System, Gainesville, FL, USA
e-mail: Tracey.Barnett@va.gov

Introduction

Researchers studying the effects of employment on adolescence have focused on the relationship between individuals' well-being and their employment status, yet contradictory findings in the literature have fueled an ongoing debate around the benefits and risks associated with working during high school. Two main developmental perspectives have informed this debate (Greenberger and Steinberg 1986; Mortimer 2003; Staff et al. 2004). The first perspective, termed here as the *work benefits* perspective, suggests that working during adolescence provides a nurturing and protective experience that helps youth integrate into the adult world (Mortimer et al. 2002). The workplace is identified as a critical environment for adolescents to learn what society expects from them as adults, establish their path towards financial independence, and play a significant role in their adult identity formation (Irwin et al. 2002). Furthermore, policy makers advocating for adolescent employment argue that doing so increases personal responsibility, greater dependability, and punctuality (Greenberger and Steinberg 1986). From a public health perspective, research comparing employed and unemployed

youth suggests that employed youth report less depression and anxiety symptomatology, and more self-esteem than unemployed youth (Bjarnason and Sigurdardottir 2003). Employed youth also report less health risk behaviors such as tobacco, alcohol, and illicit substance use (Staff et al. 2004) and lower mortality rates than unemployed youth (Morrell et al. 1999).

A second perspective, termed here the *work consequences* perspective suggests, however, that working during adolescence disrupts development by exposing youth to adult roles, behaviors, and responsibilities for which they may not be appropriately prepared. Researchers have found support for this perspective noting that adolescent employment may lead to increased risks for academic failure (Steinberg 1993), psychological distress (Shanahan et al. 1991), and unsuccessful transitions into adulthood (Staff et al. 2004). Work settings may also expose adolescents to adult role models who drink alcohol, smoke cigarettes, and engage in other risk behaviors. Resnick et al. (1997), for example, found adolescents in a nationally representative sample who worked during high school reported more cigarette, marijuana, and alcohol use than those who did not work. Furthermore, scholars supporting this perspective emphasize that adolescents may overwork and put themselves at an increased risk for psychological distress (Steinberg et al. 1993).

Measuring Adolescent Employment

The competing findings have sparked interest in understanding how and why employment may or may not lead to beneficial effects for youth development. Competing support for both perspectives across studies is attributable, in part, to different ways of operationalizing adolescent employment. One measurement approach (termed here as *work history*) has explored whether working anytime during adolescence, regardless of the number of hours worked, predicts health outcomes. While researchers generally agree that this approach is too broad and does not help us understand how work affects youth development (Mortimer et al. 2000; Johnson 2004), several researchers continue to use this dichotomous measure (Staff et al. 2004).

A second measurement approach (termed here as *work intensity*) is defined by the number of hours worked per week and is often used in cross-sectional designs with samples of high school seniors (Valois et al. 1999). While researchers do not agree on the exact number of hours per week marking the threshold between beneficial and deleterious effects on adolescent development, researchers suggest that working over 20 h per week is deleterious because it limits youth's time for other activities such as homework, participation in extra-curricular activities, and social interactions (Paschall et al. 2004). The work intensity effects on youth development, however, also seem to depend on the outcome under study. Mortimer et al. (2000), for example, found no evidence to suggest that adolescents working 20 or more hours per week (high intensity workers) were different from those working <20 h per week (low intensity workers) on mental health symptoms and academic achievement during high school. In the same study, however, they found that youth working high intensity jobs reported more alcohol use than low intensity workers. Notably, neither work history nor work intensity take into account when adolescents initiate their work experience (e.g., early versus late in their high school years), for how many years they work (i.e., how long), and the pattern of their work over time (e.g., start and stop working).

We propose a third measurement approach, a *work trajectory* approach, to explore the effects of working during adolescence on health-related behaviors. This approach may be more dynamic than a *work history* or *work intensity* approach by considering the possibility that youths' work patterns may change over time. While the work intensity approach helps account for the mixed results in the adolescent literature, researchers have not explored whether the effects of work on adolescent development depend on *when* and *for how long* adolescents participate in the labor force. Research linking adolescents' biological and emotional development and their participation in adult-like social activities suggest that synchronicity between their development and their exposure to adult roles is vital for healthy transitions into adulthood (Galambos et al. 2003; Schulenberg et al. 2003; Lewis 1999). Thus, the timing of work in adolescents' development may have different effects on their internalizing and externalizing behavior.

Race Differences in Adolescent Employment

The effects of adolescent work may not only depend on how work is measured, but also on the sample studied. Compared to any other race or ethnic group in the United States, African Americans have the highest unemployment rate (i.e., unemployed and looking for a job in the past 6 months), with a current season-adjusted rate of approximately 11% (US Department of Labor 2004). The Department of Labor's Bureau of Labor Statistics (2004) reported a rate of participation in the labor force (i.e., employed or actively seeking work in the past 6 months) of approximately 40% among Whites 16–19 years of age for the 2003 fiscal year. For African Americans in the same age group, the participation in the labor force rate was just over 20%. Similarly, the unemployment rate among 16–19 year old African Americans (30%) was twice as high as that of Whites (15%). The striking differences in

labor force participation and unemployment rates between White and African American youth raise questions related to the equitable development of both groups within health-promotive social contexts.

Takeuchi and Williams (2003) have argued that lower employment rates among African Americans adults place them at a social disadvantage and increase their health risks when compared to Whites. Within the adolescent work literature, most empirical evidence is based on predominantly White samples (Staff et al. 2004). Consequently, little is known about the influence of work on health risks among African American youth. Disparities in employment for White and African American youth, however, suggest that the effects of work on development may differ across racial/ethnic groups (Raphael 1998).

Johnson (2004) found that White adolescents suffered from externalizing behaviors due to the effects of work intensity while their African American counterparts did not. Unfortunately, Johnson's study only had two waves of data and was limited to adolescents enrolled in high school. Our study builds on Johnson's (2004) research by following a sample of African American youth through middle adolescence (the high school years) and late adolescence (an additional four years as youth transitioned into adulthood). In addition, we include respondents whether or not they completed high school in four years or at all.

Prospective studies on the effects of employment among African American adolescents and young adults will help us understand whether labor force participation has beneficial health effects for this racial group over time. Research on youth employment to date has tended to focus on cross-sectional outcomes for predominantly White youth (Safron et al. 2001) during the senior year of high school (Steinberg and Dornbusch 1991). Therefore, we contribute to this literature by examining these issues in a sample of predominantly African American adolescents. We focus our analyses on the relationship between adolescent work (as measured by the three competing approaches previously described) and externalizing and internalizing behaviors during these two developmental periods.

Study Hypotheses

Our study has three objectives that seek to address limitations of past research. First, we investigate whether different measurement approaches to adolescent work (i.e., work history, work intensity, and work trajectory) provide comparable results. We hypothesize that the work history measure will not be sensitive to adolescent work patterns and will show no association with internalizing and externalizing behaviors. Congruent with other researchers, we hypothesize that a work intensity approach will be a better measure than work history because it provides a clearer understanding of how number of hours worked per week influences various internalizing and externalizing behaviors among African American youth. Nonetheless, we hypothesize that the work trajectory approach will provide additional insights to the effects of adolescent work than the work history or work intensity approaches by exploring whether different work exposure patterns are associated with internalizing and externalizing behaviors during adolescence.

Second, we explore whether these different work trajectories are related to internalizing and externalizing behaviors during high school and as youth transition into adulthood. Youth who begin working earlier in adolescence and who intermittently enter and leave the workforce may have greater difficulty in coping with the work environment than their counterparts who did not work or who worked later or consistently. Coping difficulties in the work environment may be due to youth's development when they begin working (e.g., early starters versus late starters), their inability to settle into the work environment because of inconsistent work exposures (e.g., episodic workers versus consistent workers), or a combination of both. Adolescents who begin participating in the labor force in middle adolescence (e.g., junior and/or senior high school years) or who worked consistently throughout high school may report greater well-being than youth in other working trajectories because they may be better prepared to participate in the labor force. Youth in the *never worked* trajectory, however, may be at less risk than those in the *early starters* and *episodic* trajectories because they do not have to struggle with entering the workforce at an earlier age and/or adapting to the workforce environment repeatedly. Conversely, youth who do not work during adolescence may be at greater risk for internalizing and externalizing behaviors than their counterparts in the *consistent* or *late starter* trajectories because they do not have the gains of working after adapting to the workforce environment.

Third, we test the work benefits and work consequences perspectives in a sample of African American youth. Most research on adolescent work either includes very few African American youth or compares African American and White youth. Yet, this comparison may not be appropriate because of the racial disparities in adolescent work behavior. In addition, focusing on African American youth may help us understand within group variation that may be especially useful for designing relevant programs.

Method

Sample and Design

Our sample is from an eight-year longitudinal study of substance use and school drop-out among urban youth.

Data were collected from 850 adolescents beginning their ninth grade (Wave 1: 1994) in four public high schools in a Midwestern city. To be eligible for the study, participants had a grade point of 3.0 or lower at the end of the eighth grade, were not diagnosed by the school as having emotional or developmental impairments, and identified as African American, White, or Bi-racial (African American and White). Fifty percent of the original sample was female. Adolescents self-reporting as African American constituted eighty percent of the sample in Wave 1 (n = 681). We focus our analyses on this African American subsample. Eighty-nine African American participants were dropped from our analyses due to missing data on the work measures.

The mean age at Wave 1 for the remaining 592 African American participants was 14.8 years (SD = .6). Forty-seven percent were male (n = 277). We report parents' highest educational levels as proxies for socioeconomic status. Mother's highest educational level at Wave 1 was 11% grade school or some high school, 40% high school, 32% some college or vocational training, 14% college, and 3% graduate or professional school. Father's highest educational attainment at Wave 1 was 7% grade school or some high school, 51% high school, 21% some college or vocational training, 19% college, and 2% graduate or professional school.

Measures

Work History

We created a work history variable assessing whether participants worked at all during high school. This measurement approach allowed the comparability of our data with those who examined the effect of adolescent work during any year of high school, regardless of the number of hours worked. If participants did not work during any of the four years, we placed them in the *No work* category. We placed participants in the *Worked* category if they had worked any time during Waves 1 through 4, regardless of when they worked. Close to two thirds reported working at least once during high school (n = 365; 62%), while the remainder reported not working at all (n = 227; 38%).

Number of Hours Worked

We measured work intensity by collecting the number of hours worked per week at each Wave (''On average over the school year, how many hours per week do you work in a job for a pay?'' for Waves 1–3; and, ''How many hours per week do you work?'' for Waves 4–8). Response categories were: None, <10, 11–20, 21–30, and >30 h for the first four Waves. Table 1 presents the distribution of number of hours worked per week across Waves 1 through 8.

Work Intensity

In order to compare our data with those examining the influence of work intensity during the senior year (Schulenberg et al. 1996), we created a work intensity variable for Wave 4. If participants did not work during the fourth Wave, they were assigned to the *No work* category (n = 351; 59%). Participants working 20 h or less per week at Wave 4 were assigned to the *Low Intensity* category (n = 133; 23%). Participants working 21 h or more per week at Wave 4 were assigned to the *High Intensity* category (n = 108; 18%).

High School Work Trajectories

Participants reported their work status in each wave (''Are you presently working?''). Using their work status during Waves 1 through 4 (their high school years), we created five mutually exclusive work trajectory categories. We defined work trajectories according to whether or not they had worked in each of the first four waves. For each year, a value of 0 (did not work) or 1 (worked) was given to each

Table 1 Distribution of number of hours worked across middle (Waves 1–4) and late adolescence (Wave 5–8)

	None N(%)	≤10 h N(%)	11–20 h N(%)	21–30 h N(%)	31+ h N(%)	Total
Wave 1	500 (89.0)	40 (7.1)	14 (2.5)	6 (1.1)	2 (0.4)	562
Wave 2	477 (84.9)	28 (5.0)	40 (7.1)	13 (2.3)	4 (0.7)	562
Wave 3	368 (65.8)	27 (4.8)	83 (14.8)	59 (10.5)	22 (3.9)	559
Wave 4	324 (58.6)	24 (4.3)	102 (18.4)	58 (10.5)	45 (8.1)	553
Wave 5	150 (35.9)	9 (2.2)	23 (5.5)	55 (13.2)	181 (43.3)	418
Wave 6	144 (32.3)	6 (1.3)	22 (4.9)	54 (12.1)	220 (49.3)	446
Wave 7	140 (34.5)	6 (1.5)	23 (5.7)	60 (14.8)	177 (43.6)	406
Wave 8	143 (34.8)	13 (3.2)	26 (6.3)	38 (9.2)	191 (46.5)	411

participant. We created the following five work trajectories: *never worked* (i.e., 0000), *episodic* (i.e., 0101, 1010), *stopped working* (i.e., 1100, 1000, 0100), *late starters* (i.e., 0011, 0001, 0010), and *consistent workers* (i.e., 0111, 1011, 1101, 1110, 1111). If participants had one year of missing work data through Waves 1 to 4, we assigned them into a trajectory if their missing year (M) was not relevant in determining their trajectory assignment (e.g., 00M1 would be a late starter regardless of the value of M). Using this approach, we were able to assign 10 cases into our work trajectory categories; all others were dropped (n = 89).

Participants who reported never working during the first four waves were assigned to the never worked trajectory (n = 227; 38%). Participants who worked once during the first two waves and once during Waves 3 and 4 were assigned to an episodic trajectory (n = 41; 7%). If participants reported working only during the first two waves, they were assigned to the stopped working trajectory (n = 35; 6%). Conversely, if participants reported working only during Waves 3 and 4, they were assigned to the late starters' trajectory (n = 232; 39%). All participants who worked during three or more of the first four waves were assigned to the consistent workers trajectory (n = 57; 10%).

Demographics

Sociodemographic characteristics were collected from participants at each wave. In Wave 1, participants were asked to report their date of birth, sex, parents' marital status, and father's and mother's highest educational level and employment status, respectively. We computed age based on date of birth reported at Wave 1. Participants were asked to report their biological parents' marital status from four categories: married to each other, separated from each other, divorced from each other, or never married to each other. Participants were also asked to disclose their parents' employment status. For each parent, the participant was asked to choose from six categories: full time (30–40 h), part time (<30 h), retired, not working, deceased, or don't know. Responses of ''No contact'' and ''Don't know'' were recoded as missing.

High School Dropout

In Wave 5, participants reported their highest educational attainment. Participants chose using four categories: No terminal degree, GED, or high school diploma, some college, or don't know. We created a dummy variable to identify high school dropouts by combining the ''GED or high school diploma'' and ''some college'' categories into the *Completed High School* category (N = 337; 78.6%). Participants who did not graduate were placed in the *School Dropout* category (N = 92; 21.4%). We recoded ''Don't know'' responses as missing.

Internalizing Behavior

Four internalizing behaviors were measured: depression, anxiety, self-acceptance, and daily hassles. The Brief Symptom Inventory (Derogatis and Spencer 1982) was used to assess anxiety and depression across each Wave. Participants were asked to answer both scales using a 5-point scale ranging from 1 (never) to 5 (very often). Self-acceptance was measured at each Wave using the Bentler Personality Inventory (Stein et al. 1986). Using a 5-point scale, participants were given opposing statements and asked to choose how much they agreed with each pair of statements (i.e., ''Happy with myself—Unhappy with myself''). Cohen e al. (1983) perceived global stress scale was used as a measure of daily hassles. This scale asks how many times in the last month the respondent felt stressed, in control, or had problems dealing with responsibilities. Participants answered using a 5-point Likert scale ranging from never to very often. The daily hassles scale was added to the questionnaire in Wave 2 and was used in all successive years. Table 2 presents the mean, standard deviation, and Cronbach's alpha for each internalizing behavior across all eight Waves.

Externalizing Behavior

Five externalizing behavior variables were measured: frequency of cigarette, alcohol, and marijuana use in the past 30 days, violent behavior, and nonviolent delinquency. Current cigarette use (defined as the past 30 days) was assessed by 7 categories: not at all, less than one cigarette per day, one to five cigarettes per day, about one-half pack per day, about one pack per day, about one and one-half packs per day, and two packs or more per day. Participants reported their current alcohol use using 7 categories (0 times, 1–2 times, 3–5 times, 6–9 times, 10–19 times, 20–39 times, and 40 + times). Participants' current marijuana use was measured with the same 7 answer categories for alcohol. Violent behavior consisted of 7 items assessing behaviors such as getting into a fight, carrying or using a weapon, and hurting someone. Nonviolent delinquency consisted of 10 items appraising behaviors such as selling drugs, stealing, damaging property, or trespassing. Both of these measures use a 5-point rating scale (0 times to 4 or more times) over the past 12 months. Table 3 reports the mean, standard deviation, and Cronbach's alpha across all eight Waves for each externalizing behavior.

Table 2 Mean, standard deviation, and Cronbach's alpha for internalizing behaviors across middle (Waves 1–4) and late adolescence (Wave 5–8)

	Depression		Anxiety		Self-Acceptance		Daily Hassles	
	M(*SD*)	α	*M*(*SD*)	α	*M*(*SD*)	α	*M*(*SD*)	α
Wave 1	1.64(.70)	0.79	1.58(.63)	0.77	4.53(.68)	0.65	–	–
Wave 2	1.85(.88)	0.83	1.74(.83)	0.83	4.48(.71)	0.7	2.53(.57)	0.73
Wave 3	1.80(.85)	0.83	1.69(.79)	0.83	4.57(.66)	0.74	2.48(.61)	0.78
Wave 4	1.81(.93)	0.86	1.73(.92)	0.89	4.50(.70)	0.71	2.48(.62)	0.78
Wave 5	1.74(.72)	0.83	1.58(.61)	0.78	4.48(.70)	0.82	2.36(.59)	0.82
Wave 6	1.66(.69)	0.83	1.60(.65)	0.81	4.44(.71)	0.82	2.47(.59)	0.81
Wave 7	1.72(.70)	0.83	1.67(.64)	0.8	4.40(.71)	0.82	2.43(.54)	0.8
Wave 8	1.71(.72)	0.84	1.59(.59)	0.78	4.29(.78)	0.83	2.45(.56)	0.81

Table 3 Mean, standard deviation, and Cronbach's alpha for externalizing behaviors across middle (Waves 1–4) and late adolescence (Wave 5–8)

	Cigarette use		Alcohol use		Marijuana use		Non-violent delinquency		Violent behavior	
	M(*SD*)	α	*M*(*SD*)	α	*M*(*SD*)	α	*M*(*SD*)	α	*M*(*SD*)	α
Wave 1	1.31(.76)	0.82	1.44(.97)	0.85	1.54(1.28)	0.92	1.32(.52)	0.82	1.35(.53)	0.74
Wave 2	1.40(.89)	0.83	1.54(1.01)	0.84	1.85(1.58)	0.9	1.33(.54)	0.83	1.41(.59)	0.79
Wave 3	1.52(1.09)	0.84	1.60(1.18)	0.86	1.85(1.65)	0.89	1.27(.48)	0.84	1.33(.53)	0.8
Wave 4	1.62(1.20)	0.85	1.61(1.18)	0.85	1.96(1.75)	0.87	1.23(.46)	0.84	1.28(.51)	0.81
Wave 5	1.71(1.24)	0.87	1.89(1.26)	0.82	2.02(1.87)	0.86	1.18(.40)	0.79	1.24(.42)	0.67
Wave 6	1.79(1.38)	0.8	2.02(1.44)	0.86	1.93(1.83)	0.85	1.16(.38)	0.78	1.26(.49)	0.73
Wave 7	1.82(1.31)	0.82	2.20(1.54)	0.79	2.09(1.90)	0.87	1.13(.31)	0.73	1.21(.44)	0.69
Wave 8	1.91(1.46)	0.81	2.20(1.58)	0.86	2.10(2.01)	0.91	1.17(.43)	0.82	1.25(.50)	0.75

Procedure

Participants in Waves 1–4 (i.e., 9th to 12th grades) were interviewed at one-year intervals whether they were in or out of school. Waves 5 through 8 data were collected in one-year intervals beginning approximately two years after Wave 4 was completed. Structured face-to-face interviews were conducted with students in school or in a community setting if the participants could not be found in school. Waves 5 through 8 interviews were mostly conducted in a community setting. Before each interview, the participant read and signed the study's consent forms and asked any questions regarding the confidentiality procedures. On average, each interview lasted 50–60 min. After the interview portion of the protocol, participants completed a self-administered paper and pencil questionnaire about alcohol and substance use, sexual behavior, and other sensitive information. We obtained a 90% response rate over the first four waves of the study and a 68% response rate across all eight waves. Participants were given an incentive ($15 for Wave 1, $20 for Wave 2, $25 for Waves 3 through 8) as remuneration for taking time to participate in the study.

Data Analytic Strategy

We conducted attrition analyses across all Wave 1 study measures by comparing participants with complete data with those excluded due to missing data on their work history measure. Furthermore, we tested for differences in demographic characteristics in our exploratory analyses of the work trajectory measure. All analyses included variables across all eight Waves (except for daily hassles, which was not collected in Wave 1). Age and high school dropout were included as covariates in all analyses.

We used Wilks' lambda (*W*) as an omnibus test statistic in all multiple analysis of covariance (MANCOVA) in order to test for differences between the outcomes' means for the three work measures (Crichton 2000). Because many repeated measures tests were performed, all longitudinal omnibus multivariate tests in our analyses were corrected using the Bonferroni post-hoc correction to decrease chance findings due to the number of tests performed (e.g., experimenter-wise Type I error). The adjusted alpha (i.e., *p* level) was .005. When Wilks' lambda was statistically significant post-correction, we

proceeded to test whether the work measure main effect, time main effect, and work by time interaction effect were statistically significant through their respective *F* statistics. We provide full statistical statements only for those outcomes that achieved statistical significance to facilitate brevity. Given the number of analyses partaken, we present our data analytic strategy in each subsection of the results for clarity.

Results

Attrition Analyses

Attrition analyses indicated that males were more likely to leave the study than females (χ^2 (1, N = 592) = 10.46; $p < .01$) and older respondents were more likely to leave the study than younger adolescents (t (679) = –4.72; $p < .01$). Respondents who left the study also reported having lower grade point average in Wave 1 (t (677) = –2.21; $p < .05$), fathers with lower educational attainment (t (498) = 2.73; $p < .01$), and divorced parents (χ^2 (3, N = 592) = 31.69; $p < .01$) than those who remained in the study. We found no differences by mother's education level (t (627) = .93; n.s.), mother's employment status (χ^2(3, N = 592) = 3.05; n.s.), or father's employment status (χ^2 (3, N = 592) = .953; n.s.).

Participants who dropped out of the study tended to use more cigarettes (t(659) = –4.59; $p < .01$), alcohol (t(641) = –2.14; $p < .01$), and marijuana (t(650) = –4.02; $p < .01$) in Wave 1 than those who remained in the study. We found no differences across internalizing behaviors, violent behavior, or non-violent delinquency.

Differences in Demographic Characteristics Across Work Trajectories

We tested differences in work trajectories with 592 African-American adolescents ranging between 14 and 17 years of age at Wave 1 (M = 14.5 years, SD = 0.6). Age differences existed between work trajectories (F(4,587) = 5.02; $p < .01$). Scheffé post-hoc comparisons indicated that respondents in the consistent work trajectory were .30 years older than those in the never worked trajectory, and .34 years older than those in the late starter trajectory.

Respondents' work trajectories did not differ by sex (χ^2 (4, N = 592) = 1.68; n.s.), mother's education (F(4, 544) = .651; n.s.), father's education (F (4, 427) = .08; n.s.), mother's employment status (χ^2 (12, N = 592) = 11.94; n.s.), father's employment status (χ^2 (12, N = 592) = 19.95; n.s.), or parents' marital status (χ^2 (12, N = 592) = 9.39; n.s.).

Work History Analyses

Single Timepoint Analyses (Waves 1, 4, and 8)

We tested for single timepoint differences in internalizing and externalizing behaviors across Waves 1, 4, and 8 using MANCOVA. We examined single timepoint group differences at Waves 1, 4, and 8 because they represent meaningful developmental transition periods for most adolescents and young adults: enrollment in high school (Wave 1), expected year of graduation from high school (Wave 4), and young adulthood (Wave 8), respectively. Single timepoint tests allowed us to explore: (1) if youth's baseline internalizing and externalizing behaviors contributed to their decision to work at any given time during high school; (2) if working at any time during adolescence had an effect on their internalizing and externalizing behaviors during the expected year of graduation from high school; and, (3) if working at any time during adolescence had a long-term effect as youth transitioned to adulthood.

We found no single timepoint difference across participants' work history in internalizing or externalizing behaviors for Wave 1, Wave 4, or Wave 8.

Longitudinal Analyses (Waves 5 through 8)

For this subset of longitudinal analyses, we explored whether work history predicted internalizing and externalizing behaviors during the transition into young adulthood. While a causal mechanism cannot be tested, we sought to test whether work history (i.e., working at any time across Waves 1 through 4) was associated with internalizing and externalizing behaviors post-high school (Waves 5 through 8) by using repeated measures MANCOVA to test for the work history main effect, the time main effect, and the time-by-work history interaction effect.

We found a time-by-work history interaction effect on marijuana use (W = .97; F (3, 258) = 2.72; $p < .05$). Participants who did not work during high school reported higher marijuana use than their working counterparts as they transitioned into adulthood, yet this difference disappeared by Wave 8. We found no other work history main effects, time main effects, or time-by-work history interactions across the transition into adulthood years.

Work Intensity Analyses

Single Timepoint Analyses (Waves 1, 4, and 8)

Similar to the work history analyses, we initially tested for group differences across the three work intensity groups in internalizing and externalizing behaviors across Waves 1,

4, and 8 using MANCOVA. These single time-point tests allowed us to explore: (1) if youth's baseline internalizing and externalizing behaviors were associated with their work intensity status (e.g., non-worker, low intensity worker, high intensity worker) during the expected year of graduation from high school; (2) if their internalizing and externalizing behaviors during senior year differed by their work intensity that year; and, (3) if working at different intensities during senior year had a long-term effect as youth transitioned to adulthood. If we found overall between-group differences, we performed univariate *F*-tests and Scheffé post-hoc multiple comparisons to determine which variables and groups differed.

We found no difference between non-workers, low intensity workers, and high intensity workers in internalizing or externalizing behaviors at Wave 1, Wave 4, or Wave 8.

Longitudinal Analyses (Waves 5 through 8)

We then assessed whether different work intensity during the senior year (Wave 4) was associated with longitudinal changes in internalizing and externalizing behaviors after high school (Waves 5 through 8) by using repeated measures MANCOVA. We test for the work intensity main effect, the time main effect, and the time-by-work intensity interaction effect.

We found a time-by-work intensity effect for self-acceptance ($W = .96$; F (6, 564) = 2.10; $p < .05$). As shown in Fig. 1, non-working participants' self-acceptance decreased consistently during the transition into young adulthood. On the other hand, low and high intensity workers reported increasing self-acceptance at the beginning of the transition followed by a sharp decrease in self-acceptance (with the decrease occuring sooner for low intensity workers than high intensity workers; Wave 6 and Wave 7, respectively). By Wave 8, however, all three groups had comparable self-acceptance scores. We found no other work intensity main effects, time main effects, or time-by-work intensity interactions across the transition into adulthood years.

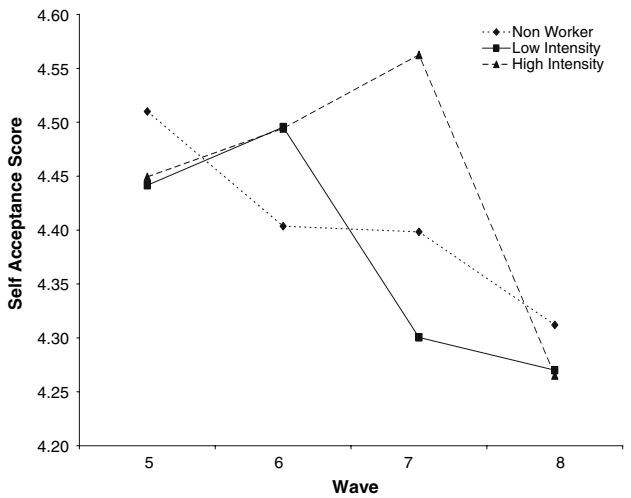

Fig. 1 Mean self-acceptance score for non-workers (did not work in Wave 4), low intensity (worked less than 21 h per week in Wave 4), and high intensity workers (worked 21 h or more per week in Wave 4) across late adolescence (Waves 5–8) in a sample of African American youth

Work Trajectory Analyses

Single Timepoint Analyses (Waves 1, 4, and 8)

Because the work trajectory measure does not account for the number of hours worked per week across Waves 1 through 4, we included number of hours worked as a covariate to avoid confounding. Congruent with the work history and work intensity single timepoint analyses, we tested whether internalizing and externalizing behaviors differed by work trajectories across Waves 1, 4, and 8 using MANCOVA. These single timepoint tests allowed us to explore: (1) if youth's baseline internalizing and externalizing behaviors predicted adolescent work trajectories; (2) if different adolescent work trajectories had an effect on their internalizing and externalizing behaviors during the expected year of graduation from high school; and, (3) if adolescent work trajectories had a long-term effect as youth transitioned to adulthood. If we found overall between-group differences, we performed univariate *F*-tests and Scheffé post-hoc multiple comparisons to determine which variables and groups differed.

We found no single timepoint difference across work trajectories for internalizing or externalizing behaviors in Wave 1, Wave 4, or Wave 8.

Longitudinal Analyses (Waves 1 through 4)

Given that the work trajectory approach is a dynamic operationalization that measures when and for how long adolescents work, we first tested whether different work trajectories were associated with internalizing and externalizing behaviors during adolescence (Waves 1 though 4). A significant association between different work trajectories and problem behaviors would suggest that different work trajectories are correlated over time with different problem behavior patterns across the high school years. We used repeated measures MANCOVA. Here we test for the work trajectory main effect, the time main effect, and the time-by-work trajectory interaction effect.

We found a time-by-trajectory interaction for depression ($W = .95$; $F(12, 1074) = 1.85$; $p < .05$) during the high school waves. As shown in Fig. 2, participants in the never

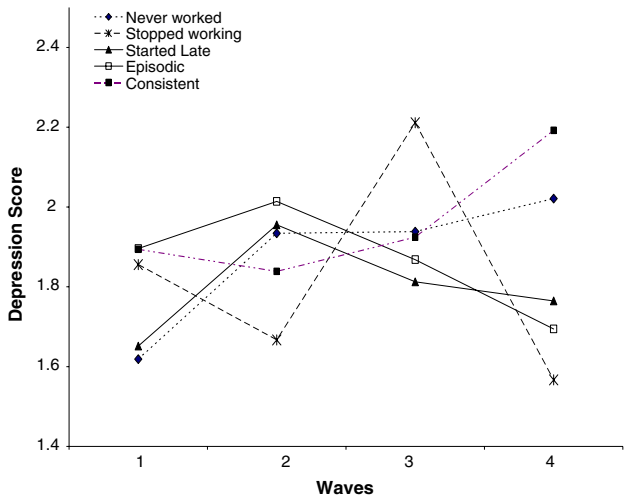

Fig. 2 Mean depression score across five work trajectories (never worked, stopped working, started late, episodic, and consistent) across mid-adolescence (Waves 1–4) in a sample of African American youth

worked and consistent work trajectories had a linear increase for depression across the adolescent years. On the other hand, participants in the late starters and episodic trajectories had linear decreases in depression during the first four waves. Youth in the stopped working trajectory had an increase in depression during Wave 3 (e.g., a year after they stopped working), yet their mean depression score decreased again by Wave 4.

We also found a time-by-trajectory interaction for anxiety ($W = .94$; $F(12, 1063) = 1.95$; $p < .05$). As shown in Fig. 3, never workers' anxiety scores consistently increased across the adolescent waves. Youth in the stopped working trajectory had an increase in anxiety during Wave 3 (e.g., a year after they stopped working), yet their mean anxiety score decreased again by Wave 4. Episodic workers had the highest anxiety scores across the adolescent waves, with increases in their anxiety scores in Wave 2, followed by decreases across the remaining high school years. Among late starters, anxiety scores increased in Wave 2 yet decreased as they began working in Waves 3 and 4. Consistent workers had no change in their anxiety scores in Waves 1 and 2, followed by a decrease in Wave 3 that reverted into an increase in Wave 4.

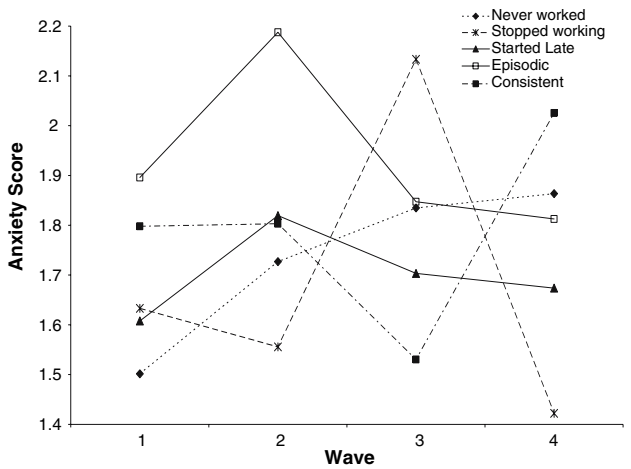

Fig. 3 Mean anxiety score across five work trajectories (never worked, stopped working, started late, episodic, and consistent) across mid-adolescence (Waves 1–4) in a sample of African American youth

We found a decreasing time main effect for daily hassles ($W = .98$; $F(2, 404) = 4.38$; $p < .05$), suggesting daily hassles decreased for all African American youth during the high school waves. We found no other work trajectory main effects, time main effects, or time-by-work trajectory interactions for internalizing behavior.

We found a trajectory main effect ($W = .94$; $F(4, 509) = 2.50$; $p < .05$) and a time-by-trajectory interaction for cigarette use ($F(12, 979) = 1.82$; $p < .05$). Participants in the never worked trajectory had the greatest linear increase over time for cigarette use. Episodic workers seemed to increase and decrease their smoking behavior across the four waves yet, with the exception of Wave 3, their trajectory had the lowest mean cigarette use. Late starters reported increased cigarette use during Waves 1 and 2, with their use remaining constant in Waves 3 and 4 (e.g., the year they started working). Participants who stopped working had no change in their cigarette use in Waves 1 and 2, followed by a decrease in Wave 3 that reverted into an increase in Wave 4. Figure 4 illustrates the self-reported cigarette use over time for each trajectory. We found no time-by-trajectory interactions for alcohol or

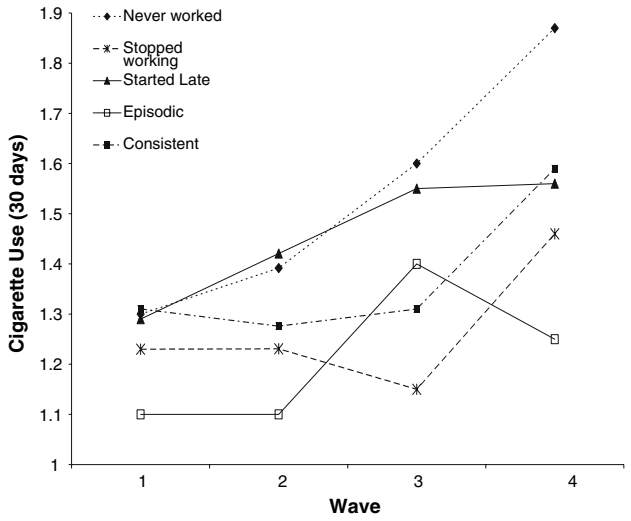

Fig. 4 Mean cigarette use in the past 30 days across five work trajectories (never worked, stopped working, started late, episodic, and consistent) across mid-adolescence (Waves 1–4) in a sample of African American youth

marijuana use, non-violent delinquency, or violent behavior across the first four Waves.

We also found a time main effect for marijuana use, suggesting that marijuana use increased for the entire sample over time ($W = .97$; $F(3, 372) = 3.63$; $p < .05$). We found no other trajectory or time main effects for externalizing behavior across the first four Waves.

Longitudinal Analyses (Waves 1 through 8)

Finally, we assessed whether adolescent work trajectories were associated with changes in internalizing and externalizing behaviors during the transition into young adulthood. Given that analyses of Waves 1 through 4 revealed differences in some internalizing and externalizing behaviors across work trajectories, we accounted for these variations by including the mean scores for internalizing and externalizing behaviors across Waves 1 through 4 in the young adulthood analyses (Waves 5 through 8). We had two main reasons for including data from Waves 1 through 4. First, it allowed us to assess whether the associations found between the work trajectories and problem behaviors during middle adolescence persist during late adolescence (e.g., does the relationship between work trajectories and cigarette use during middle adolescence carry over to late adolescence?). Second, we were able to explore whether the effects of different work trajectories on youth's problem behaviors are delayed (e.g., does the nonsignificant association between work trajectories and self-acceptance during middle adolescence become apparent if data on self-acceptance during late adolescence are included in the analyses?). We used repeated measures MANCOVA to test for the work trajectory main effect, the time main effect, and the time-by-work trajectory interaction effect.

We found a time-by-trajectory effect for anxiety across all eight waves ($W = .86$; $F(28, 964) = 1.53$, $p < .05$). Respondents in the never worked trajectory had the lowest anxiety scores and reported decreases in anxiety across Waves 5 through 8. Youth in the stopped working, late starting, and consistent trajectories had similar linear changes across Waves 5 through 8. Youth in these trajectories reported slight increases in their mean anxiety scores between Waves 6 and 7, followed by decreases in anxiety by Wave 8. Episodic workers often had the highest mean anxiety scores when compared to other trajectories (except in Wave 6), with sporadic increases and decreases as they transitioned to adulthood. By Wave 8, however, participants across all work trajectories reported similar anxiety scores (see Fig. 5).

The associations between work trajectory and cigarette use and depression, respectively, found across Waves 1 through 4 became non-significant once all 8 Waves were used in the analyses. We found no other time-by-trajectory effects, trajectory main effects, or time main effects for the other internalizing or externalizing behaviors across all eight Waves.

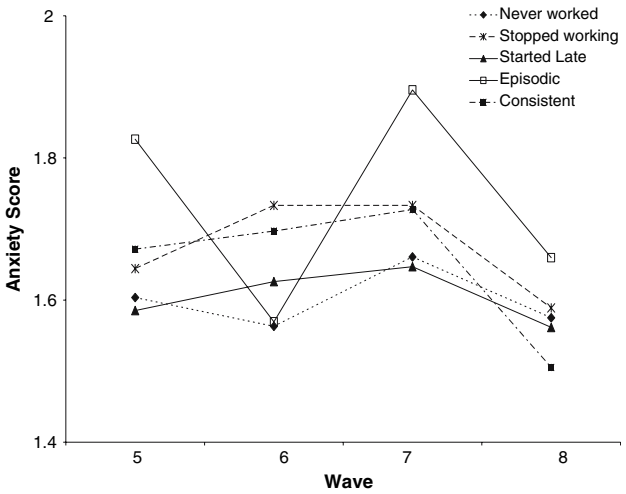

Fig. 5 Mean anxiety score across five work trajectories (never worked, stopped working, started late, episodic, and consistent) across late adolescence (Waves 5–8) in a sample of African American youth

Summary of Cross-Measurement Comparisons

We explored three competing operationalizations of work during adolescence: work history (never worked or worked during adolescence); work intensity among working and non-working adolescents in Wave 4 (no work, 20 h or less per week, or 21 h or more per week); and, work trajectories (never worked, episodic, stopped working, late starters, and consistent workers). Interestingly, we found no work effects or differences across work measures on internalizing and externalizing behaviors across the single timepoint analyses. Our results, however, suggest that different measurement approaches may imply different relationships between work and internalizing and externalizing behaviors across the longitudinal analyses.

We found the work history approach to be insensitive to differences in internalizing behaviors. Based on these analyses, we would conclude that working at any time during adolescence is not associated with African American youth's internalizing behaviors and, therefore, is neither protective nor deleterious for youth's development. Nonetheless, we observed other patterns in internalizing behavior when using the work intensity or the work trajectory approaches. Findings from the work intensity approach in youth's self-acceptance across the transition into adulthood would suggest that working during the expected year of graduation (Wave 4) might benefit adolescents by delaying decreases in self-acceptance until later in the transition into young adulthood. Similarly, findings from

the work trajectory approach would suggest that youth who never worked or worked consistently had higher depression and anxiety scores by the time they reached their expected year of graduation than youth in the stopped working, started later, or episodic trajectories. Nonetheless, the timing of employment also seems to influence internalizing behavior. Episodic workers had the highest depression and anxiety scores, yet youth who worked for two consecutive years (the stopped working and the late starter work trajectories) seemed to have the lowest depression and anxiety scores by their expected year of graduation. Taken together, findings across internalizing behaviors from the work intensity and work trajectory approaches seem to weigh in favor of the work benefits perspective. This seems to suggest that including the sequence of when and for how long you work during adolescence may be as important as work intensity in future studies.

We found the work intensity approach was insensitive to differences in externalizing behaviors. Based on these analyses, we would conclude that working intensity during the expected year of high school graduation is not associated with African American youth's externalizing behaviors and, therefore, is neither protective nor deleterious for youth's development. Nonetheless, we observed other patterns in externalizing behavior when using the work history and the work trajectory measures. The work history approach captured differences in marijuana use, with working youth reporting less marijuana use than non-working youth during the transition into adulthood. Similarly, the work trajectories approach offered support to the work benefits perspective. Participants who never worked and stopped working reported greater cigarette use over time, while all other working trajectories increased their cigarette use at slower rates. Episodic workers, however, seemed to increase and decrease their smoking behavior across the high school years. These trajectory differences reinforce the importance of including the sequence of when and for how long adolescents work during adolescence.

Taken together, these findings suggest that all approaches may be informative in understanding the effects of work on adolescent development. On the other hand, the different measurement strategies do not overlap across internalizing and externalizing behaviors. In the following section, we explore the implications of using these measurement approaches in testing the work benefits and work consequences perspectives.

Discussion

The effects of work during adolescence have been conceptualized from two perspectives: work benefits and work consequences. The work benefits perspective suggests that adolescents who work during high school learn social skills such as time management and responsibility that help them successfully negotiate their transitions into adulthood (Swanson et al. 1998; Shanahan et al. 2002). This perspective also suggests that working youth may be less inclined to engage in problem behaviors such as alcohol and other drugs (AOD) because they value their earned money, have positive adult influences, or have fewer opportunities to use substances (Greenberger and Steinberg 1986; Staff et al. 2004). The work consequences perspective on adolescent work, on the other hand, suggests that working may expose youth to adult-like roles and responsibilities that may place them at risk of increased internalizing and externalizing behaviors such as exposure to cigarettes, marijuana, and alcohol use (Johnson 2004). This perspective suggests that adolescents may also suffer from greater psychological distress due to their inability to focus on their age-specific academic and social development (Bachman and Schulenberg 1993; Weller et al. 2003; Mortimer 2003).

Overall, our results offer some support to the work benefits perspective and suggest that working during adolescence may not have negative health consequences for African American youth (Irwin et al. 2002; Staff et al. 2004). Youth who work during adolescence at any time, for example, self-report less marijuana use over time than adolescent non-workers. Similarly, working with greater intensity seemed to improve adolescents' self-acceptance as they transition into young adulthood when compared to their non-working counterparts. While our findings contradict the robust finding that self-acceptance increases over time for adolescents (Graber 2004), researchers have found variation in self-esteem over time and have acknowledged that not all youth experience an increase in self-esteem (Zimmerman et al. 1997; Hirsch and DuBois 1991). One potential explanation for declining self-esteem is that the youth in our sample may have limited access to resources in their community and are exposed to a number of environmental stressors including violence and poverty. Having a job may help adolescents overcome some of the challenges of a negative neighborhood environment (Kegler et al. 2005), which in turn enhances their sense of self-worth. Future research exploring whether community environments moderate the relationship between work and adolescent health may be useful.

Differing employment trajectories during adolescence had different effects on adolescents' internalizing behavior. African American youth who worked consistently or who never worked reported greater anxiety and depression than adolescents who worked a little and quit or started working in middle adolescence. Not working or working for too long during adolescence seems to have a negative effect on African American youth's internalizing behavior.

Nonetheless, not working or working consistently seemed to have less of an effect than episodic work. This seems to suggest that intermittent exposure to the workplace during adolescence may disrupt youth's ability to cope and adapt to the work environment. Future qualitative and quantitative research exploring how the meaning and context of work influence adolescent health by placing them in different trajectories may be useful.

Work trajectories were also associated with youth's smoking habits. Working seemed to protect youth from smoking as we found adolescents who never worked or stopped working during adolescence increased smoking habits faster than any other trajectory. On average, however, most participants reported not smoking or smoking less than one cigarette daily. The low substance use incidence in our sample may reflect the lower adoption rates of these behaviors among African American youth (Ellickson et al. 2004). These effects disappear, however, as youth transition into adulthood. Together, these findings underscore the importance of assessing *when* and *for how long* adolescents work, after controlling for the number of hours they work. Work trajectory approaches may help inform and refine health-promotion programs and policies focused on youth development by ensuring that the efficacy of intervention components (i.e., working at a job) are maximized by identifying when and for how long to enroll youth into these programs.

While our study suggests some support for the work benefits perspective, our findings require replication and must be interpreted with caution. Our work trajectories' effects on internalizing and externalizing behaviors suggest that there is greater variability during adolescence than in the transition into young adulthood. As a note of caution, it is important to highlight that the variability in internalizing and externalizing behaviors captured by work trajectories may be confounded by adolescents' motivation to work. For example, an adolescent's decision to work because he/she needs to contribute to the household income may place him/her in a different work trajectory than an adolescent who decides to work in order to buy his/her first car and assert his/her independence. Consequently, the associations found between different work trajectories and internalizing and externalizing behaviors may disappear once youth's motivations for working have been included in the analyses. Since we cannot rule out alternative explanations, future research testing potential mediational pathways is required.

Differences across work intensity and work trajectory patterns suggest their importance in clarifying the role of work in adolescent development. Thus, a combination of the work intensity and work trajectories approaches across the adolescent years in future studies may prove useful. While we acknowledge that other longitudinal measurement approaches are used to study adolescent development (i.e., growth curve models), their statistical complexity limits researchers' ability to easily communicate to policymakers and stakeholders whether different work patterns have particular meanings (e.g., *consistent worker, episodic worker, late starter, non-worker*) and may hinder policy and youth development programs focused on identifying at-risk adolescents. Furthermore, while a growth curve approach is often used to test within-group variation over time, a repeated measures MANCOVA approach facilitates the testing and interpretation of between-group comparisons across problem behaviors. Thus, our study did not include growth curve models as a fourth measurement approach. Future studies comparing work trajectories to growth curve models may be useful.

Several additional limitations should be noted. First, the study's findings may not be generalizable because participants in this study were recruited based on their risk for school dropout (e.g., GPA lower than 3.0 during eighth grade). Nonetheless, previous studies with the same sample have found adolescents had a more even distribution of GPA by wave 4 (12th grade) of the study (Zimmerman et al. 2002). Second, our attrition analyses also suggest that we may have lost those youth who may be at greatest risk for internalizing and externalizing behavior. This may explain why we found numerous non-significant findings across the three work approaches. On the other hand, the absence of work differences may simply mean that work has neither a positive nor a negative effect. Moreover, the fact that some of our results are consistent with past research findings suggests that the bias introduced by our sample selection and study attrition may not diminish our overall findings. Replication of these three work approaches in other longitudinal samples following adolescents as they transition into adulthood may be useful. Finally, we were unable to account for the quality or type of job that adolescents worked while in high school (Mortimer et al. 2002). Work type, wages, and quality may help identify differences in adolescent work and development. Adolescents working poor quality jobs, for example, may differ from those working in higher quality jobs, regardless of work intensity. Future research exploring how these factors may mediate or moderate the work and developmental transitions relationship would be useful. This work will be essential in order to inform policy initiatives adequately.

These limitations not withstanding, this study builds on knowledge about the effects of work on adolescent development in several ways. First, the study focused on a large sample of urban African American adolescents at risk for internalizing and externalizing behavior. This is especially critical because most previous work in this area included predominantly White samples even though significant

racial disparities exist in youth employment (US Department of Labor 2004). Few studies of adolescent employment have studied a large African American sample without constraining their analyses to comparisons across races or ethnicities (Johnson 2004). Second, the availability of data for participants across 8 Waves allowed for the exploration of the relationship of adolescent employment and internalizing and externalizing behavior during the high school years and transition to young adulthood. Third, our study explored the potential differences due to the operationalization of adolescent work across multiple outcomes to internalizing and externalizing behavior. Overall, our results suggest that the way researchers operationalize work during high school may influence the conclusions they might draw about the effects of work on adolescent development. We found that work intensity and work trajectories in high school provided more detailed information about the effects of adolescent work on developmental outcomes. Perhaps most importantly, our results suggest that longitudinal analyses may be necessary to assess adequately the effects of employment during high school for health adolescent development and the transition to adulthood.

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Author Biographies

José A. Bauermeister, MPH, PhD is currently a postdoctoral fellow at the HIV Center for Clinical and Behavioral Studies, Columbia University and New York State Psychiatric Institute. He received his MPH and PhD from the University of Michigan—School of Public Health. His research interests revolve around the intersectionality of culture, sexuality, and health. He is currently studying how various social influences contribute to minority communities' physical, mental, and social well-being.

Marc A. Zimmerman, PhD focuses on adolescent health and resiliency and empowerment theory. His work on adolescent health examines how positive factors in adolescent's lives help them overcome risks they face. His research includes analysis of adolescent resiliency for risks associated with alcohol and drug use, violent behavior, precocious sexual behavior, and school failure. He is also studying developmental transitions and longitudinal models of change. Dr. Zimmerman's work on empowerment theory includes measurement and analysis of psychological and community empowerment. The research includes both longitudinal interview studies and community intervention research.

Dr. Zimmerman is the Director of the CDC funded Prevention Research Center of Michigan. He is also the Principal Investigator for the CDC funded Youth Violence Prevention Center. Dr. Zimmerman is the Editor of Health Education & Behavior and is a member of the editorial board for Health Education Research.

Tracey E. Barnett, PhD is a postdoctoral fellow in rehabilitation outcomes at the Rehabilitation Outcomes Research Center of the US Department of Veteran Affairs, at the North Florida/South Georgia Veterans Health System. Her research focuses on the relationship between social support and health outcomes across the lifecourse.

Cleopatra Howard Caldwell, PhD is an Associate Professor in the Department of Health Behavior and Health Education and Co-Associate Director of the Program for Research on Black Americans at the University of Michigan. She has published in the areas of help-seeking behaviors and informal social support among African Americans, the Black church as a social service institution, and race-related socialization and academic achievement among African American youth. In addition to research and academic experiences, Dr. Caldwell has experience in the health policy field. She served as the health policy analyst on Capital Hill for U.S. Congressman J. Roy Rowland, and as a fellow in the office of U.S. Congressman Sander Levin.