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Life-Course Pathways and the Psychosocial Adjustment of Young Adult Women

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Abstract

We examined seven life-course pathways from adolescence through the early adult years and their links with general health and psychosocial adjustment among 2,290 women from the National Longitudinal Study of Adolescent Health. Young women who followed a pathway involving college attendance to full-time employment with no family-formation transitions were functioning comparatively well with respect to general health, depression, and self-esteem. In contrast, young women who followed pathways involving early motherhood were functioning less well. Fixed-effects models suggested that the differences were due to selection factors. Young women who followed the pathway of college to full-time employment exhibited an increase in heavy drinking, whereas women who became married mothers exhibited a decrease in the same. Involvement in illegal behavior declined for all groups but least so for women who attended college.

Keywords

adolescence; fixed-effects models; life course; National Survey of Adolescent Health; well-being; youth

For decades, family scholars have grappled with how the life course should be conceptualized and operationalized. With respect to early adulthood, most researchers have focused on the precursors and consequences of single family transitions, such as cohabitation, marriage, and parenthood. The life-course perspective, however, emphasizes the timing and sequencing of multiple transitions (Elder, 1998; Zollinger & Elder, 1998). This perspective recognizes that transitions have different meanings, predictors, and consequences depending on when they occur in the life course and where they fit into larger sequences. For example, first marriages at age 18 and age 30 are qualitatively different events. Similarly, births that precede marriage differ from births that follow marriage in many respects. According to this perspective, pathways (the timing and sequencing of multiple transitions) rather than single transitions should be the subject matter of life-course research.

Several questions are relevant to early life-course pathways. Three central questions are the following: (a) What are the most common pathways young adults follow as they transition through multiple social roles, such as school completion, full-time employment, cohabitation, marriage, and parenthood? (b) What family-of-origin characteristics and experiences during childhood and adolescence predict those pathways? And (c) Do the pathways have implications for well-being in adulthood? Previous studies have provided tentative answers to the first and second questions (see below). The current study addresses the third question: whether particular pathways are associated with young adults' subsequent physical health and psychosocial adjustment.

We focus on the life-course pathways of young women for four reasons. First, women generally make life-course transitions (cohabitation, marriage, and parenthood) at later ages than do men. Because the current sample includes ages 18–23, substantially fewer men than women had made relevant transitions. Second, evidence suggests that men tend to underreport having children (one of the main transitions of interest), especially when children are born outside of marriage (Rendall, Clarke, Peters, Ranjit, & Verropoulou, 1999). Third, the complexity of life-course data makes it difficult to present results for more than one gender within the space limitations of a single journal article. Finally, the current study builds directly on the previous study by Amato, Landale et al. (2008) that contained life-course information on women only.

We assess a diverse range of outcomes: self-rated health, symptoms of depression, self-esteem, heavy drinking, and involvement in illegal activities. We also consider whether pathways have effects that are independent of selection factors that predispose youths to embark on particular pathways in the first place. To our knowledge, the current study is the first to address these issues.

Background

The transition to adulthood has become increasingly complex. Men and women are marrying at older ages (Ventura & Bachrach, 2000), choosing nonmarital cohabitation rather than marriage as their first union (Bumpass & Lu, 2000), and bearing more children outside of marriage (U.S. Census Bureau, 2010, Table 86). Because of the changing requirements of jobs, more young adults are continuing their educations beyond high school, and individuals who postpone family formation are most likely to pursue higher education (Amato, Landale et al., 2008). As a result of these combined trends, the early adult years have become a period of great variability in the life course (Settersten & Ray, 2010). Despite the complexity of this stage of the life course, the majority of studies continue to focus on transitions into single statuses, such as cohabitation, marriage, and parenthood.

Rather than focus on individual transitions, we argue that the theoretical and methodological implications of life-course theory require that life-course pathways (the timing and ordering of transitions) are the appropriate unit of analysis, as noted earlier. The complexity of life-course data, however, is a challenge for researchers. Consider five transitions commonly undertaken during the early adult years: finishing school, entering full-time employment, cohabiting, marrying, and becoming a parent. During the first decade of adulthood, some individuals make all of these transitions, and other individuals make only a few. Moreover, the order of the transitions varies across individuals, as do the ages at which the transitions occur. As a result, the number of possible pathways is extremely large. To study these phenomena, researchers must reduce these pathways to a manageable number.

To address this challenge, several studies have relied on latent class analysis (LCA) to identify groups with different constellations of roles. Osgood, Ruth, Eccles, Jacobs, and Barber (2005) used LCA with cross-sectional data to show role configurations at a particular age in early adulthood. Other studies used LCA with retrospective data to reveal role sequences over time (Amato, Landale et al., 2008; MacMillan & Copher, 2005; Sandefur, Eggerling-Boeck, & Park, 2005). Because the findings of Amato, Landale et al. (2008) are particularly relevant to the present study, we discuss their results in some detail. These researchers applied LCA to data from a sample of young women in Waves 1 and 3 of the National Longitudinal Study of Adolescent Health (Add Health). For each age between 18 and 23, information on five variables was coded: attending school, full-time employment, nonmarital cohabitation, marriage, and parenthood. An innovation of this study was the treatment of nonmarital cohabitation as a distinct family form—a decision consistent with

the recommendations of many demographers (e.g., Bumpass & Raley, 1995). Their analysis produced seven latent classes of pathways. (For a description of these pathways, see Table 1.)

In addition to describing the most common underlying pathways, Amato, Landale et al. (2008) identified multiple precursors of these trajectories. Measures of psychological and social resources (e.g., having close ties with parents and feeling cared for by others) predicted entry into the pathway characterized by college to full-time employment (Pathway 1). In contrast, adolescents with few psychological and social resources were especially likely to follow pathways that involved early union formation and parenthood (Pathways 3–6). Similarly, measures of socioeconomic advantage in the family of origin (parental education, family income, and growing up with two continuously married biological parents) and academic success (cognitive ability and grades) distinguished women who followed the college to full-time employment pathway from other women. Finally, women with more conservative orientations (as reflected in religiosity and the avoidance of sexual behaviors during high school) were especially likely to follow the college to full-time employment pathway. Married mothers also tended to score higher on conservatism than did cohabiting women (with or without children). Overall, this study indicated that family-of-origin characteristics and adolescents' attitudes and school experiences were good predictors of life-course pathways during the early adult years. (for more details, see Amato, Landale et al., 2008).

We rely on these seven pathways and the same data set (Add Health) in the present study. Our goal, however, is not to assess the factors that lead young women to choose one pathway rather than another. Instead, our goal is to determine if pathways through the early adult years have consequences for young women's health and psychosocial adjustment. To develop hypotheses, we rely on four conceptual perspectives that focus on (a) socioeconomic resources, (b) the accumulation of social roles, (c) stress proliferation, and (d) selection. We draw on these particular perspectives because they are related to a life-course perspective and suggest hypotheses relevant to the issues addressed in this study.

A focus on socioeconomic resources suggests that youths who delay family formation until they finish college and begin full-time employment have an advantage over youths who follow other pathways. Individuals with college degrees generally earn more income and have a higher standard of living than do other individuals (U.S. Census Bureau, 2010, Table 686). Moreover, the skills, information, and resources that accrue from obtaining a college degree help individuals cope with everyday difficulties (Ross & Huber, 1985), avoid depression (Kessler, 1982), and develop perceptions that their lives are largely under their control (Ross & Wu, 1995). Partly for these reasons, education is positively associated with mental health, physical health, and longevity (Ross & Wu, 1995). After marriage, individuals with high levels of educational and financial resources report greater marital quality (Amato, Booth, D. Johnson, & Rogers, 2007) and have a lower likelihood of divorce (Bramlett & Mosher, 2002). These considerations lead to the hypothesis that young women who graduate from college and transition to full-time employment before adopting family commitments and responsibilities (Pathway 1) experience a higher level of health and psychosocial well-being than do women who follow alternative pathways.

Although the advantaged status of women who follow Pathway 1 seems clear, other group comparisons are equivocal. Some versions of role theory assume that combining multiple roles is beneficial for women's mental and physical health (Moen, Dempster-McClain, & Williams, 1992). This perspective posits that social roles provide a sense of meaning and purpose in life. Moreover, holding multiple roles is an indicator of social integration, which also improves well-being. Role theory also points out that certain behaviors and roles are

incompatible. For example, alcohol consumption, drug use, and other risky behaviors tend to increase as youths leave the parental home and decrease as youths adopt the roles of parent, spouse, and full-time employee (Arnett, 1998; Wolfe, 2009). These aspects of role theory lead to the hypothesis that women who have accumulated the largest number of social roles (e.g., married and cohabiting mothers in Pathways 4 and 6, respectively) have higher levels of health and psychosocial functioning than do women who have accumulated few roles (e.g., women in Pathway 2 who transitioned directly from high school to employment without making any family transitions). Moreover, given the symbolic status of marriage in American culture (Cherlin, 2004), one might expect that married mothers have a higher level of well-being than do cohabiting mothers.

Another strand of role theory holds that problematic outcomes can occur if the demands of multiple roles conflict with one another or produce role overload (Glynn, MacLean, Forte, & Cohen, 2009). More specifically, a stress-proliferation perspective (Pearlin, Schieman, Fazio, & Meersman, 2005) holds that adopting multiple family roles early in life is problematic. Stress can occur because young adults do not have the personal or financial resources to take on the responsibilities of marriage or parenthood. Becoming a parent at an early age, for example, is associated with poverty, parenting strain, and social isolation, especially if it occurs without the support of a romantic partner (Edin & Kefalas, 2005). Consequently, young mothers without partners have an elevated risk of developing depression and other mental health problems (Avison, Ali, & Walters, 2007; Tobias, Gerritsen, Kokaua, & Templeton, 2009). Wolfe (2009) reported that women who became parents, irrespective of age, showed a decrease in heavy drinking around the time of childbirth—a finding consistent with the notion that adding new roles is beneficial. Women who made this transition before age 23, however, showed an increase in heavy drinking in the years following childbirth—a finding consistent with the notion that adopting certain roles early in life can be stressful. The stress-proliferation perspectives, therefore, suggest the hypothesis that women who accumulate multiple family roles early in life (e.g., married and cohabiting mothers who followed Pathways 4 and 6) will exhibit relatively low levels of psychosocial functioning. Unpartnered mothers (Pathway 5) may have the most stressful lives and, hence, the lowest level of well-being, given that they lack the social support of a partner and the economies of scale that result when partners share the same household.

Even if family-formation pathways are correlated with aspects of well-being in early adulthood, these associations may not be causal. A selection perspective holds that the factors that lead youths to follow particular pathways account for subsequent differences in well-being. For example, the Amato, Landale et al. (2008) study found that women who completed college and then shifted into full-time employment before making family commitments tended to have higher levels of psychological, social, and socioeconomic resources as adolescents than did women who followed pathways involving early union formation and childbearing. For these reasons, the well-being of young adult women may have less to do with their particular family formation pathways and more to do with the advantages and disadvantages that led them along various pathways in the first place. This perspective leads to the hypothesis that life-course pathways and psychosocial functioning are not associated after accounting for selection factors.

Contributions of the Present Study

As noted earlier, the Amato, Landale et al. (2008) study provided tentative answers to two questions: (a) What are the most common pathways that young women follow with respect to education, employment, cohabitation, childbearing, and marriage? and (b) What factors predict the particular pathways that young women follow? The present study builds directly on their research and answers a third question: Do these pathways have consequences for

young women's general health and psychosocial adjustment? To answer this question, we draw on Waves 1 and 3 of the National Longitudinal Study of Adolescent Health (Add Health), and we use the same seven latent classes that emerged from the Amato, Landale et al. (2008) study. Our goal is to determine whether life-course pathways are related to young adult women's self-rated health and psychosocial adjustment, net of selection factors.

Our analysis employs fixed-effects models with change scores. A major advantage of this approach is that unobserved time-invariant background variables that are correlated with the independent and dependent variables do not affect parameter estimates (Allison, 2009; D. Johnson, 2005). The time-invariant variables include parents' socioeconomic status, parents' and offsprings' stable personality traits, parents' childrearing strategies, parents' and children's race and ethnicity, many genetic factors, and other unmeasured selection factors. Because unobserved time-invariant variables do not affect parameter estimates from fixed-effects models, this method is well suited to assess the role of selection. A finding that early life-course trajectories are related to subsequent adjustment (net of unobserved selection factors) would support the assumption that pathways have causal implications. Alternatively, a finding that pathways are unrelated to adjustment in early adulthood (net of unobserved selection factors) would support the role of selection in accounting for observed links between life-course pathways and subsequent outcomes.

Our choice of outcomes depended on two criteria. First, identical measures of the outcomes had to be present in Wave 1 (before the initiation of pathways) and in Wave 3 (after the completion of pathways). Second, we chose variables that covered a broad range of outcomes, including self-reported general health, symptoms of depression, and self-esteem. We also included heavy drinking and illegal activities because those behaviors usually peak in the adolescent and early adult years (Chassin, Hussong, & Beltran, 2009; Steffensmeier, Allan, Harer, & Streifel, 1989). Although young men are more likely than young women to engage in such behaviors, the two genders show the same pattern of change over time: increasing during adolescence and decreasing in adulthood (E. O. Johnson, Arria, Borges, Ialongo, & Anthony, 1995; Livingston & Room, 2009). Including these five outcomes allows us to cast a broad net in understanding the consequences of life-course pathways for women's functioning in early adulthood. The correlations between these variables in Wave 3 ranged from $-.39$ (depression and self-esteem) to $.27$ (self-rated health and self-esteem), which indicates that the variables were tapping distinct dimensions of functioning in adulthood.

Because fixed-effects models exclude all time-invariant variables, it was not necessary to control for variables such as race, ethnicity, or parents' education in the analysis. We included the respondent's age as a time-varying control, however, because outcomes like heavy drinking and engaging in illegal activities are related to age, as noted earlier.

Method

Sample

Data came from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health (Add Health). Add Health is a longitudinal and nationally representative dataset of 20,745 adolescents in Grades 7 through 12 in 1994-5. In this first wave, data were collected through in-home interviews with adolescents and one of their parents. Adolescents were interviewed for a second time in 1996 and for a third time in 2001-2002. Of the 10,480 female adolescents in Wave 1, 8,030 (77%) were reinterviewed in Wave 3. At that time, adolescents ranged in age from 18 to 25 years. Because the goal of this study was to explore the implications of early life-course trajectories, we restricted the sample to 2,387 women ages 23-25 at Wave 3. Weights were missing for 97 women. After dropping those cases, the final

sample size was 2,290. At the time of the Wave 3 data collection, 36% of women in the sample were 23 years of age, 52% were 24 years of age, and 13% were 25 years of age.

Variables

Pathways—Pathways were based on five statuses: (a) cohabitation, (b) marriage, (c) parenthood, (d) educational enrollment, and (e) full-time employment. A status by age matrix was constructed in which binary variables (0, 1) indicated whether a woman occupied a given status at a particular age (ranging from 18–23), and LCA was performed to establish the most common underlying pathways. This analysis resulted in seven classes (or pathways), as described earlier. The entropy value (a measure of how well individual cases are classified) was .96, which is close to its maximum value of 1. Only about 4% of cases involved some degree of ambiguity in classification, and they were assigned to the class in which they had the greatest probability of membership. Note that if a woman had a child earlier than age 18, she was coded as being a parent at age 18—the first year in which trajectories were measured. (The same rule applied to other transitions.) Readers should see Amato, Landale et al. (2008) for a full description of the methodology.

General health—One question assessed health status: “In general, how is your health?” (1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*).

Depression—A measure of depression was constructed using questions from the Center for Epidemiologic Studies Depression (CESD) Scale. Nine questions from the scale were asked in both Waves 1 and 3 (each based on the frequency of the event during the previous 7 days): “bothered by things that usually don’t bother you,” “couldn’t shake off the blues,” “felt just as good as other people,” “had trouble keeping your mind on what you were doing,” “felt depressed,” “felt too tired to do things,” “enjoyed life,” “felt sad,” and “felt that people disliked you” (0 = *never or rarely*, 1 = *sometimes*, 2 = *a lot of the time*, and 3 = *most of the time or all of the time*). When appropriate, the coding was reversed so that high scores reflected high levels of depression. The mean response across the nine items served as the scale score ($\alpha = .83$ for Wave 1 and $.84$ for Wave 3).

Self-esteem—The mean responses to three questions were used to form a scale of self-esteem: “You have a lot of good qualities,” “You have a lot to be proud of,” and “You like yourself just the way you are” (1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, and 5 = *strongly agree*). The reliability coefficients were acceptable ($\alpha = .78$ for Wave 1 and $.77$ for Wave 3).

Heavy drinking—Three questions were averaged to create a scale of the frequency and severity of alcohol consumption over the previous 12 months: “On how many days did you drink alcohol?” “On how many days did you drink five or more drinks in a row?” and “On how many days have you gotten drunk or ‘very, very high’ on alcohol?” Response options were 0 = *never*, 1 = *one or two days*, 2 = *once per month or less*, 3 = *two or three days per month*, 4 = *one or two days per week*, 5 = *three to five days per week*, and 6 = *every day or almost every day*. Responses were summed and divided by 3 to create an average score, with high scores reflecting heavier alcohol consumption ($\alpha = .89$ for Wave 1 and $.87$ for Wave 3). Earlier researchers have scored these Add Health items in the same way (e.g., Langenkamp & Frisco, 2008).

Illegal behavior—A scale of illegal behavior was constructed using seven questions that referred to the previous 12 months. These behaviors included “deliberately damage property that didn’t belong to you,” “steal something worth more than \$50,” “go into a house or building to steal something,” “use or threaten to use a weapon to get something from

someone,” “sell marijuana or other drugs,” “steal something worth less than \$50,” and “take part in a fight where a group of your friends was against another group.” The total number of activities (0 to 7) served as the measure of illegal behavior ($\alpha = .60$ in both waves). Other delinquency researchers and criminologists have used the same scoring of this variable (e.g., Beaver, Wright, DeLisi, & Vaughn, 2008). As are most count variables, this measure was highly skewed: 72% of female adolescents in Wave 1 and 91% of young women in Wave 3 reported no criminal behaviors during the previous year. The most common behavior was stealing something worth less than \$50, which 15% of adolescents reported in Wave 1.

Descriptives—Table 2 shows descriptive statistics for the sample. Note that the sample contained a good deal of diversity. For example, 34% of women were racial or ethnic minorities, 17% had a parent who was not a high school graduate, and about 50% were not living with two biological parents at Wave 1.

Analysis

We conducted all analyses using the survey module in Stata (Version 9), which adjusts standard errors for sample clustering, stratification, and weighting. We weighted data to ensure that they were nationally representative of all young women in the sample age range. Problems with missing data were modest and never exceeded 5% for any variable. For this reason, we relied on a Stata routine to replace missing values using a single imputation. Multiple imputation does not work appreciably better when the amount of missing data is small (Amato, Booth et al., 2007).

For each outcome, a change score was created by subtracting each respondent's Wave 3 score from the corresponding Wave 1 score. Consider a continuous dependent variable (Y_i) measured at two points in time. The regression equations are

$$\begin{aligned} Y_{i1} &= a_1 + b\mathbf{x}_{i1} + \gamma\mathbf{z}_i + \alpha_i + \varepsilon_{i1} \\ Y_{i2} &= a_2 + b\mathbf{x}_{i2} + \gamma\mathbf{z}_i + \alpha_i + \varepsilon_{i2} \end{aligned} \quad (1)$$

In these equations, a represents the intercepts for each period, $\mathbf{x}_i$ represents predictor variables that take on different values in each period, $\mathbf{z}_i$ represents predictor variables that do not change over time, and b and γ represent vectors of coefficients. The equations contain two error terms, with ε_i representing unobserved variables that affect each individual at each point in time and α_i representing unobserved variables that do not change over time.

Subtracting the first equation from the second equation, results in the following formula:

$$Y_{i2} - Y_{i1} = (a_2 - a_1) + b(\mathbf{x}_{i2} - \mathbf{x}_{i1}) + (\varepsilon_{i2} - \varepsilon_{i1}) \quad (2)$$

In the reduced equation, the difference score $Y_{i2} - Y_{i1}$ is due to the change in intercepts, the change in the time-varying predictors, and the change in the error terms for each individual at each time. Importantly, $\mathbf{z}_i$ and α_i drop out of the equation. In other words, all variables that do not change over time are “controlled,” including unobserved variables (Allison, 2009). To control for predictors that change over time, researchers must measure these variables and include them in the statistical model as change scores. The present study used respondents' ages in this fashion.

We relied on ordinary-least-squares regression to estimate most models. Because illegal behavior was a skewed count variable, we relied on negative binomial regression—an appropriate analytic method for this type of data (DeMaris, 2004). For each outcome, we relied on omnibus F tests to determine whether the overall differences across the seven groups were statistically significant. We did not interpret differences between groups if the F

test was not significant. Because of the large number of possible comparisons, when F tests were significant, we used a .01 probability value to determine significant group differences.

Results

Table 3 shows the means for self-reported general health and the psychosocial adjustment variables, measured at Wave 1, for female adolescents who *later* followed the seven pathways. Omnibus F tests (shown in the second column from the right) revealed that the overall differences across groups were statistically significant for all indicators. The first row for each indicator shows the means for raw scores, and the second row (with the exception of illegal activities) shows the standardized means. With respect to general health, adolescents who later followed Pathway 1 (college to full-time employment with no family-formation transitions) reported the highest level of general health, whereas adolescents who later followed Pathway 6 (single mothers) reported the lowest level of general health. The standardized version of this variable indicated that the difference between the two groups represented .69 of a standard deviation. The results for depression followed a roughly similar pattern, with adolescents who later followed the pathway of college to full-time employment reporting the lowest level of depression and adolescents who later followed the single mother pathway reporting the highest level. Coincidentally, this difference also represented .69 of a standard deviation. In addition, adolescents who followed pathways involving early union formation (Pathways 3–5) reported more symptoms of depression than did adolescents who did not follow pathways involving union formation (Pathways 1, 2, and 7). With respect to self-esteem, adolescents who followed pathways involving cohabitation and employment (Pathway 3) and early marriage and motherhood (Pathway 4) had the lowest levels. Differences between groups in self-esteem were generally about one fourth of a standard deviation or slightly larger.

Table 3 also shows that adolescents who later followed Pathway 3 (full-time employment and cohabitation) had the highest level of heavy drinking. The difference between adolescents who followed Pathways 3 and 1, for example, represented .36 of a standard deviation. Finally, with respect to illegal activities, those who attended college and then entered full-time employment (Pathway 1) had the lowest mean, whereas single mothers (Pathway 6) had the highest mean. To put these differences in perspective, Table 3 also shows the percentage of adolescents who reported engaging in at least one illegal activity during the previous year. These values ranged from 18% for adolescents who followed Pathway 1 to 39% for adolescents who followed Pathway 6. In general, adolescents who later attended college and then transitioned into full-time employment appeared to be doing better than the other groups across most outcomes. Correspondingly, adolescents who later became single mothers appeared to be the most troubled during adolescence.

Table 4 shows the mean scores at Time 2 (Wave 3) after women had reached young adulthood. In many respects, the Time 2 results were similar to the Time 1 results. In particular, women who attended college and then shifted to full-time employment (Pathway 1) had the highest level of general health, the lowest level of depression, and the second-highest level of self-esteem (second only to women who followed Pathway 2). Correspondingly, women who became single mothers (Pathway 6) had the lowest level of general health, the highest level of depression, and the lowest level of self-esteem. Contrary to the results for other indicators, however, heavy drinking was most common among young women who followed Pathways 1 and 3. Finally, the overall difference across groups in criminal behavior was not statistically significant at Time 2.

Table 5 shows the results of the fixed-effects analysis of change scores, controlling for changes in age. (Changes in age were not related significantly to any outcome, so Table 5

does not include this variable. Because the change scores for the outcomes were adjusted for changes in age, the mean change scores in Table 5 do not exactly reflect the differences between means in Tables 2 and 3, although they are very close.) We conducted two types of significance tests. First, each change score was divided by its standard error. This test indicated whether the degree of change within each group was significantly different from 0. The second test (the omnibus *F* test) indicated whether the seven pathways taken together were significantly related to each outcome. We calculated the standardized mean change score by dividing the raw change score by the Time 1 standard deviation. Consequently, this statistic shows the amount of change over time relative to the Time 1 standard deviation.

The change scores for general health were positive for all groups, although only the change scores for the first five groups were significantly different from 0. The change in health was most pronounced for young women who followed Pathway 2—an increase of about one third of a standard deviation. The omnibus *F* test was not significant, however, which indicated that changes in health were comparable for each trajectory. The results for depression were similar. Young women who followed all seven pathways reported declines in depression, and only the mean change score for Pathway 7 (inactive) was not significantly different from 0. Some of the changes were moderately large, with the values for Pathways 4–6 reflecting about half of a standard deviation. Once again, however, the omnibus *F* test was not significant. Self-esteem revealed similar trends, with all groups increasing over time, with five of seven changes being significantly different from 0. As with the previous two indicators, the omnibus *F* test was not significant.

Overall, the results are consistent with previous research showing that emotional stability tends to improve between adolescence and early adulthood (Adkins, Wang, Dupre, van den Oord, & Elder, 2009; Roberts, Walton, & Viechtbauer, 2006). More important, the results are consistent with a selection perspective. Adolescents who followed various pathways differed with respect to Wave 1 and Wave 3 indicators of general health, depression, and self-esteem, but these groups all experienced similar levels of change over time.

The results for heavy drinking revealed a different pattern. Young women who followed Pathway 1 (college to full-time employment) exhibited a significant increase in alcohol use. Women who followed Pathway 2 (high school to full-time employment) also showed a modest increase. In contrast, women who became married mothers (Pathway 4) showed a significant decline in alcohol use. The overall difference between the groups was statistically significant, as reflected in the *F* statistic. Women who followed Pathway 1 showed a significantly greater increase in alcohol use than did women who followed all other pathways (with the exception of Pathway 3).

In supplementary analyses, we disaggregated the measure of heavy drinking into the frequency of drinking (the number of days in which people drank alcohol) and the severity of drinking (the number of days in which people drank five or more drinks and the number of days in which people got drunk). The increase in heavy drinking among women who followed Pathway 1 was due to an increase in both frequency and severity. Both measures increased significantly over time. In addition, for both measures, women who followed Pathway 1 scored significantly higher than women who followed all other pathways. A few other group differences also emerged. Women who followed Pathways 2 and 3 increased alcohol use significantly in frequency but not in severity. Women who followed Pathway 4 did not change in frequency but decreased in severity. And women who followed Pathways 5–7 did not change in either frequency or severity of drinking.

The results for illegal behavior were somewhat similar. In Table 5, the first row for this variable shows that all groups declined over time, although the changes were greater for

some groups than for others. In particular, the mean for women who followed Pathway 1 did not decline as much as the means for women who followed Pathways 2–5. The second row for this variable shows the absolute decline in the percentage of women who reported one or more crimes. The decline for women who followed Pathway 1 was about 10%, which is about half the decline reported by women who followed Pathways 2–6.

Discussion

The present study drew on a life-course perspective to estimate the effects of life-course pathways on five indicators of well-being in early adulthood. We argued earlier that pathways that involve multiple transitions rather than single transitions should be the unit of analysis in life-course research. We drew on an earlier study by Amato, Landale et al. (2008) that identified seven pathways a sample of young women followed in the Add Health data set. The earlier study focused on the factors that predisposed women to follow various pathways. The current study, in contrast, considered whether following these pathways had implications for health and psychosocial adjustment in early adulthood, net of selection factors.

As noted earlier, a focus on socioeconomic resources suggests that the hypothesis that following a pathway from college attendance to full-time employment (and avoiding early family responsibilities) should produce a comparatively high level of adjustment in adulthood (Kessler, 1982; Ross & Huber, 1985; Ross & Wu, 1995). A version of role theory that stresses the value of holding multiple roles (Moen, Dempster-McClain, & Williams, 1992) leads to the hypothesis that young women who accumulate multiple roles (e.g., married women with children in Pathway 6, many of whom also held full-time jobs) should have relatively high levels of health and psychosocial adjustment in early adulthood. In contrast, a stress-proliferation perspective (Glynn, MacLean, Forte, & Cohen, 2009; Pearlin, Schieman, Fazio, & Meersman, 2005) suggests that accumulating multiple roles, especially during the early adult years, is likely to lead to stress and lowered well-being. This perspective leads to the hypothesis that women who follow pathways involving union formation, parenthood, and employment (e.g., cohabiting mothers, most of whom were in full-time employment) should have a relatively high level of stress and, correspondingly, a low level of well-being.

The results for health, depression, and self-esteem do not support any of these hypotheses. In general, women reported improvements in health, declines in depressive symptoms, and increases in self-esteem between Waves 1 and 3, irrespective of the pathways they followed. These increases were large enough to be substantively important, with the overall mean for self-reported health increasing by about 25% of a standard deviation, the overall mean for depression decreasing by 40% of a standard deviation, and the overall mean for self-esteem increasing by about 33% of a standard deviation. The positive changes across all groups are consistent with prior research indicating that perceived health and psychological well-being tends to improve between adolescence and the early adult years (Adkins et al., 2009; Roberts et al., 2006). College-educated women (Pathway 1) reported good health, few symptoms of depression, and a high self-esteem at Time 2. These women, however, also had reported a comparatively high level of well-being 6 years earlier when they were in high school. Correspondingly, single mothers (Pathway 6) reported comparatively poor health, more symptoms of depression, and low self-esteem at Time 2. But these women also had reported comparatively low levels of well-being at Time 1, when they were in high school. The fact that the fixed-effects results for these three outcomes were not significant indicates that women in each group maintained the same rank order over time. These results are consistent with the selection perspective. In other words, women who followed Pathway 1 were doing well at Time 2, but only because they were doing well at Time 1.

Correspondingly, women who followed Pathway 6 were doing poorly at Time 2, but only because they were doing poorly at Time 1. The results strongly suggest that levels of well-being at Time 1 led women to select different life-course pathways. But the pathways, once selected, had no consequences for subsequent levels of well-being, as measured by these outcomes.

The results for the other indicators (heavy drinking and illegal activities) provided evidence that pathways have implications—although the results may not be congruent with many people's expectations. With respect to alcohol consumption, adolescents who attended college and transitioned into full-time employment showed a marked increase over time. Indeed, during adolescence, young women who later followed the pathway of college to full-time employment did not differ from other adolescents. But in early adulthood, these youths had a level of alcohol use (in terms of frequency and severity) that was significantly greater than other groups. The link between college attendance and an increase in heavy drinking is probably due to the relative freedom from parental supervision and the absence of family responsibilities, combined with the culture of heavy alcohol use that is prevalent on many college campuses (Paschall & Flewelling, 2002). In contrast, women who became married mothers showed the greatest decline in alcohol consumption, which suggests a protective effect of marriage and childbearing (Wolfe, 2009).

Women who followed all pathways reported declines in illegal activities—a trend consistent with prior research showing that deviant behaviors tend to peak in adolescence and decline during the adult years (Steffensmeier et al., 1989). Nevertheless, youths who attended college and then transitioned into full-time employment showed a smaller decline than most other groups. In adolescence (Time 1), these women reported a relatively low level of criminal activity, but in young adulthood (Time 2), their level of criminal activity was not different from that of women in other groups. Given that alcohol use increased among young women who attended college, the links between alcohol use and crime victimization and perpetration (Martin, 2001) may account for the relatively modest decline in criminal behavior among these individuals. Of course, because young women in this group had the lowest level of criminal behavior in adolescence, they had a lower starting point from which to decline, so this result should not be overinterpreted. Nevertheless, the findings are counterintuitive. That is, young women who attended college—the most advantaged group—reported the greatest increase in heavy drinking and the least decline in criminal behavior. Following a relatively privileged pathway (and coming from a relatively privileged background) does not guarantee that youths display especially responsible personal and social behaviors in early adulthood.

As do all studies, the current study has several limitations. We were able to assess outcomes only in the early years of adulthood. It is possible that women who followed pathways involving early union formation and parenthood see declines in adjustment during the subsequent decade of their lives, as a result of the instability of early unions and the cumulative stress of raising children as single parents. In contrast, it is likely that the relatively high level of heavy drinking among women who followed the pathway involving college and full-time employment exhibit a decline in subsequent years, especially as they become parents. This assumption is congruent with research showing that alcohol use tends to peak during the college years and decline after that (Chassin et al., 2009). The next wave of data from the Add Health study should help clarify these issues.

Another issue involves the decision to include women who made a family transition before age 18 in the analysis. Excluding these women would have biased the sample and made it less representative. Including these women, however, meant that the initial measurement of well-being in Wave 1 occurred after (rather than before) the initiation of a pathway

involving early family formation. Specifically, 5% of women became mothers, 1% of women were married, and 1% of women were cohabiting before the Wave 1 interview. This problem could have been avoided by including only women age 12 or younger in Wave 1. (The youngest family transition in the sample—childbirth—occurred at age 13.) This strategy would have guaranteed that the initial assessment of well-being occurred before women initiated a family-formation pathway. But these women could be followed only to about age 18 in Wave 3. Consequently, we would not have been able to assess psychosocial adjustment in early adulthood for those women. To assess how this decision affected our results, we replicated all analyses excluding women who made family formation transitions before the first interview, and the results were essentially identical to those reported in Tables 3-5. So this decision appears to have had no substantive implications for our conclusions.

Another relevant point is that fixed-effects models cannot control for unobserved variables that change over time. Consequently, it is possible that time-varying unobserved variables may have affected the results in unanticipated ways. Nevertheless, the ability to eliminate the effects of all unobserved time-invariant variables is a major advantage of fixed-effects models (Allison, 2009).

Finally, because our analysis was based entirely on women, we have no insight into the pathways followed by young men or the implications of these pathways for men's well-being. The original Amato, Landale et al. (2008) study focused on women because they tend to make family-formation transitions at younger ages than do men. Nevertheless, a study that addresses young men's early life-course transitions (and their implications for well-being) would make a useful complement to the current research.

Despite these limitations, the present study suggests that family scholars should question some widely held assumptions about the links among behaviors such as college attendance, early union formation, early parenthood, and subsequent well-being. Women who avoided early family-formation transitions—especially those who attended college—were functioning relatively well in adulthood, and they had functioned relatively well during the high school years, before college attendance. Correspondingly, women who engaged in early family-formation transitions—especially single mothers—were functioning relatively poorly in adulthood, and they had functioned relatively poorly during their high school years. Contrary to most previous studies, our results indicate that early cohabitation, marriage, and parenthood do not compromise young women's reports of general health, depression, or self-esteem, net of the disadvantages that precede these transitions. In general, the most important factors that predispose young women to experience high or low levels of psychosocial adjustment are present in their families of origin and in their experiences during childhood and adolescence, before their decisions to attend college, obtain full-time employment, cohabit, marry, or have children.

These findings should lead to questions about the putative advantages of a college education, and the putative disadvantages of early union formation and parenthood, for health and psychosocial adjustment—at least in the early adult years. Our findings suggest that well-being in adolescence largely determines well-being in early adulthood, irrespective of what people choose to do with their lives following the high school years. Because the current study is the first of its kind to examine the links between life-course pathways and well-being, future studies should replicate the current findings by using other samples, extending the analysis to women older than age 23, and focusing on men. The recent release of Wave 4 of the Add Health study will allow researchers to address these issues in more detail.

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Table 1

Life-Course Pathways of Women Ages 18–23

Pathway (% of Total)	Description
Pathway 1: College to job with no family formation (29%)	These women attended school between the ages of 18 and 21 and then shifted into full-time employment at ages 22 and 23. The probability of family formation (cohabitation, marriage, or childbearing) was low at all ages. Women in this class had the highest level of educational attainment: 78% had earned a 4-year degree and another 7% had earned a 2-year degree.
Pathway 2: High school to job with no family formation (19%)	These women showed a steep decline in the probability of being in school between the ages of 18 and 19. The probability of full-time employment rose quickly and was close to 1.0 by age 21. Members of this group exhibited little family-formation behavior.
Pathway 3: Cohabiting without children (15%)	These women showed a steep decline in the probability of being in school between ages 18 and 19. About 10% did not complete high school. The probability of full-time employment rose to about .8 by age 21. The probability of nonmarital cohabitation rose quickly and peaked at .9 by age 21. Few of these women had children.
Pathway 4: Married mothers (14%)	These women showed a steep decline in the probability of being in school between ages 18 and 19. About 10% did not complete high school. The probability of marriage rose quickly to nearly 1.0 by age 21. The probability of nonmarital cohabitation was never high. Following marriage, the probability of having a child increased sharply to more than .8. After age 20, about 60% were employed full-time.
Pathway 5: Single mothers (10%)	These women showed a steep decline in the probability of being in school between ages 18 and 19. About 8% did not complete high school. The probability of having a child was about .4 at age 18 and rose to 1.0 by age 21. The probabilities of cohabitation and marriage were never high for this group. Full-time employment increased gradually, with about 75% being employed by age 23.
Pathway 6: Cohabiting mothers (8%)	These women had a low level of education: 16% did not finish high school. The probability of nonmarital cohabitation was slightly less than .5 at age 18 and rose to nearly 1.0 by age 20. The probability of parenthood also was high and increased from about .4 at age 18 to 1.0 by age 21. About 60% were in full-time employment.
Pathway 7: Inactive (6%)	Women revealed a rapid decline in the probability of being in school, which dropped from 1.0 at age 18 to less than .2 at age 20. One quarter of these women did not finish high school. Otherwise, this group showed little activity, with the probabilities of full-time employment, cohabitation, marriage, and parenthood being low at all ages. Close to half (44%) were living with their parents—a substantially greater number than in any other class. Almost 40% of mothers described these young women as having a “cognitive disability.”

Table 2

Descriptive Statistics

	Min.	Max.	Mean or Proportion	Standard Deviation	Standard Error
Pathway membership					
College to full-time job	0	1	0.27		0.019
High school to full-time job	0	1	0.19		0.012
Cohabiting without children	0	1	0.16		0.012
Married mothers	0	1	0.14		0.014
Cohabiting mothers	0	1	0.09		0.011
Single mothers	0	1	0.09		0.012
Inactive	0	1	0.06		0.010
Wave 1 indicators					
General health	1	5	3.76	0.92	0.030
Depression	0	3	0.73	0.52	0.016
Self-esteem	1	5	3.98	0.63	0.025
Heavy drinking	0	6	1.01	1.24	0.046
Illegal activity	0	7	0.42	0.85	0.022
Wave 3 indicators					
General health	1	5	3.98	0.89	0.030
Depression	0	3	0.52	0.48	0.015
Self-esteem	1	5	4.19	0.57	0.019
Heavy drinking	0	6	1.19	1.21	0.057
Illegal behavior	0	7	0.13	0.52	0.016
Wave 1 background variables					
Race/ethnicity					
Non-Hispanic White	0	1	0.66		
Non-Hispanic Black	0	1	0.18		0.031
Hispanic	0	1	0.06		0.015
Other	0	1	0.10		0.020
Age at Wave 1	16	19	17.46	0.55	0.018
Parent education					

	Min.	Max.	Mean or Proportion	Standard Deviation	Standard Error
Less than high school education	0	1	0.17		0.019
High school graduate or GED	0	1	0.32		0.015
Greater than high school education	0	1	0.51		0.026
Household income	0	999,000	45,883	39,722	1,921
Family structure					
Two biological parents	0	1	0.51		0.023
Stepfather	0	1	0.13		0.010
Stepmother	0	1	0.02		0.004
Single mother	0	1	0.20		0.015
Single father	0	1	0.03		0.005

Note: Means and standard deviations are adjusted for weighting. Standard errors are adjusted for clustering, stratification, and weighting.

Table 3
Means of Health and Psychosocial Indicators for Female Adolescents by Life-Course Pathways (Wave 1)

Indicator	Life-Course Pathways						F Test	Significant Comparisons ($p < .01$)
	(1) College to Full-Time Job	(2) High School to Full-Time Job	(3) Cohabiting Without Children	(4) Married Mothers	(5) Cohabiting Mothers	(6) Single Mothers	(7) Inactive	
General health	Raw score (Z score)	4.04 (0.28)	3.74 (-0.05)	3.66 (-0.13)	3.63 (-0.17)	3.40 (-0.41)	3.82 (-0.04)	7.37*** 1 > 2, 3, 4, 5, 6 2, 7 > 6
Depression	Raw score (Z score)	0.60 (-0.30)	0.69 (-0.14)	0.80 (0.07)	0.82 (0.11)	0.97 (0.39)	0.66 (-0.20)	9.67*** 3, 4, 5, 6 > 1 6 > 2, 3, 7
Self-esteem	Raw score (Z score)	4.05 (0.14)	4.02 (0.09)	3.86 (-0.16)	3.87 (-0.15)	3.92 (-0.07)	4.00 (0.05)	4.44*** 1, 2 > 3, 4
Heavy drinking	Raw score (Z score)	0.88 (-0.03)	0.98 (0.06)	1.32 (0.33)	0.97 (0.04)	1.13 (0.18)	0.87 (-0.04)	2.26* 3 > 1, 2, 4, 5
Illegal behavior	Raw score (% any) ^a	0.27 (21.24)	0.41 (27.46)	0.55 (33.83)	0.51 (34.39)	0.63 (39.79)	0.41 (26.12)	4.43** 3, 5, 6 > 1
Sample size	659	426	333	326	221	191	134	

^aPercentage of adolescents who reported at least one illegal activity.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4
Means of Health and Psychosocial Indicators for Young Adult Women by Life-Course Pathways (Wave 3)

Indicator	Life-Course Pathways						F Test	Significant Comparisons ($p < .01$)
	(1) College to Full-Time Job	(2) High School to Full-Time Job	(3) Cohabiting Without Children	(4) Married Mothers	(5) Cohabiting Mothers	(6) Single Mothers	(7) Inactive	
General health	Raw score (Zscore)	4.22 (0.25)	4.04 (0.04)	3.90 (-0.11)	3.94 (-0.07)	3.89 (-0.12)	3.89 (-0.13)	8.47*** 1 > 3, 4, 5, 6
Depression	Raw score (Zscore)	0.40 (-0.31)	0.50 (-0.10)	0.59 (0.08)	0.54 (-0.02)	0.56 (0.01)	0.60 (0.11)	7.89*** 2, 3, 4, 5, 6, 7 > 1
Self-esteem	Raw score (Zscore)	4.26 (0.12)	4.30 (0.20)	4.10 (-0.16)	4.16 (-0.05)	4.19 (0.00)	4.17 (-0.03)	5.51*** 1 > 3, 6 2 > 3, 4, 6
Heavy drinking	Raw score (Zscore)	1.41 (0.24)	1.19 (0.05)	1.44 (0.27)	0.81 (-0.28)	0.95 (-0.15)	0.99 (-0.12)	10.19** 1, 3 > 4, 5, 6 2 > 4
Illegal behavior	Raw score (% any) ^a	0.10 (8.22)	0.10 (5.92)	0.20 (12.31)	0.07 (4.47)	0.12 (9.35)	0.18 (9.72)	1.85
Sample size	659	426	333	326	221	191	134	

^aPercentage of women who reported at least one illegal activity.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 5
Mean Change Scores of Health and Psychosocial Indicators by Life-Course Pathways (Wave III - Wave I)

Indicator	Life-Course Pathways							F Test	Significant Comparisons ($p < .01$)
	(1) College to Full-Time Job	(2) High School to Full-Time Job	(3) Cohabiting Without Children	(4) Married Mothers	(5) Cohabiting Mothers	(6) Single Mothers	(7) Inactive		
General	Raw 0.17*** (0.19)	0.30*** (0.32)	0.24*** (0.26)	0.28*** (0.30)	0.27*** (0.29)	0.10 (0.10)	0.07 (0.08)	0.90	
Depression	Raw -0.21*** (-0.39)	-0.19*** (-0.36)	-0.21*** (-0.40)	-0.26*** (-0.49)	-0.26*** (-0.49)	— (-0.53)	-0.05 (0.10)	1.25	
Self-esteem	Raw 0.21*** (0.32)	0.28*** (0.44)	0.24*** (0.36)	0.29*** (0.45)	0.13 (0.20)	0.10 (0.15)	0.17* (0.26)	1.55	
Heavy drinking	Raw score 0.53*** (0.44)	0.21* (0.17)	0.13 (0.11)	-0.16* (-0.14)	-0.01 (-0.01)	-0.07 (-0.07)	0.10 (0.10)	8.70***	1 > 2, 3, 4, 5, 6
Illegal behavior	Raw score -0.16*** (-9.97)	-0.31*** (-21.93)	-0.35*** (-21.56)	-0.35*** (-19.90)	-0.39*** (-23.96)	-0.37*** (-23.76)	-0.23 (-12.67)	4.25**	1 > 2, 3, 4, 5
Sample	659	426	333	326	221	191	134		

^aChange in percentage of women who reported at least one illegal activity.

* $p < .05$.

** $p < .01$.

*** $p < .001$.