

Depressive Symptoms and Life Satisfaction Among Emerging Adults: A Comparison of High School Dropouts and Graduates

Joan H. Liem · Kara Lustig · Colleen Dillon

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Abstract Using three waves of data (1998, 2000, 2002) on 1,325 emerging adults, we examined depressive symptoms and life satisfaction among a diverse group of high school dropouts and graduates. Emerging adults who left school without graduating were significantly more depressed and reported lower life satisfaction than graduates at the time of their expected graduation (T1), but these differences were nonsignificant 4 years later (T3). Working within an ecological developmental framework (Bronfenbrenner 1977, 1986), we found that graduation status, household composition, family general and transition specific support, peer support, and adolescent attachment styles protected against adverse mental health consequences at T1. However, only parent and peer support and attachment predicted changes in depressive symptoms and life satisfaction from T1 to T3.

Keywords Depressive symptoms · Life satisfaction · Emerging adults

“Emerging Adulthood” (EA), a term coined by Arnett (2000), describes the period of development from individuals’ late teens through their twenties, when individuals are no longer adolescents, but have not yet obtained the independence and self-sufficiency associated with adulthood. This is a time when most individuals are making significant life changes, such as graduating from high school, undertaking new educational and occupational

endeavors, moving out of their parents’ home, and becoming involved in significant intimate relationships. Such changes may result in improvements or declines in mental health symptoms in the context of dissolving relationships and changing contexts and resources.

In the current study, we examine two mental health outcomes, life satisfaction and depression, among emerging adults as they were graduating from high school in 1998, or would have been graduating from high school if they had not dropped out, and again 4 years later in 2002. We focus on both depression and life satisfaction because developmental transitions, such as graduating or leaving high school, can result in both positive and negative outcomes. For example, as a result of these transitions, some emerging adults may be at heightened risk for depression, especially if transitions have been disrupted (Weissman et al. 2000). In fact, depression has been found to be relatively frequent among adolescents and emerging adults (Kessler et al. 1994; Liem et al. 2008), and results in significant role impairments in individuals 18 and older (Kessler et al. 2003).

In contrast, for other emerging adults, transitions may act as positive turning points (Gore et al. 1997) and result in increased life satisfaction. Earlier research, e.g., found that self-esteem actually increased among dropouts once they left high school. This was attributed to dropouts having left an environment associated with feeling unsuccessful (McCaul et al. 1992). We also decided to focus on life satisfaction due to the call in recent years for reducing or supplementing the focus on deficits and pathology in developmentally oriented mental health research and increasing the attention paid to strengths, positive functioning, and wellness. Life satisfaction is one of the most well established indicators of general wellness and positive functioning (Suldo et al. 2006).

J. H. Liem (✉) · K. Lustig · C. Dillon
Department of Psychology, University of Massachusetts Boston,
100 Morrissey Blvd., Boston, MA 02125-3393, USA
e-mail: joan.liem@umb.edu

Both life satisfaction and depression have been associated with dropping out of school (Chan et al. 2003; Kaplan et al. 1994; Ou 2008) and level of education (Herzog et al. 1998; Suldo et al. 2006). In general, leaving high school without graduating is a developmental transition associated with a more problematic life-course, including poorer employment outcomes (U.S. Department of Labor 2003; McCaul et al. 1992), lower wages (Alliance for Excellent Education 2003), and higher levels of risky behaviors (Beauvais et al. 1996), as well as poorer mental health outcomes (Kaplan et al. 1994; Kortering et al. 1997; Liem et al. 2001; Ou 2008). For example, Kaplan et al. (1994) found that not graduating increased the likelihood of depression, anxiety, and self-derogation. Similarly, Kortering et al. (1997) found that high school dropouts were less satisfied with their lives and reported more psychologic distress and social despair than high school graduates.

There is also evidence that there are mental health differences between early school leavers that go on to get a high school degree or GED and those that do not. For example, using data from the National Education Longitudinal Study of 1988 and the 4th follow-up panel collected in 2000, Chan et al. (2003) found significant differences in life satisfaction, measured primarily in terms of work satisfaction, between dropouts who completed their high school education and those who did not. Similarly, Ou (2008), controlling for sociodemographic factors, early cognitive skills, and participation in postsecondary education, found significant differences in symptoms of serious depression, future optimism, and life satisfaction between high school graduates, dropouts that later received their GED, and dropouts without a GED. The current study will extend previous research exploring differences in mental health outcomes among drop outs, dropouts with GEDs or high school degrees, and graduates by exploring these associations during emerging adulthood.

In previous research on school and work trajectories during emerging adulthood (e.g., Dillon et al. 2003), as well as in the current study, we have drawn on Bronfenbrenner's (1977, 1986) ecologic-developmental model to understand protective factors during the transition from high school. Bronfenbrenner emphasizes the multiple social contexts in which development occurs and distinguishes between broad features of an environment or context (e.g., a two-parent versus single-parent household) and the transactional interactions (e.g., parent-child interactions around school and work related issues) that take place within that environment. Bronfenbrenner suggests that the broad, or "distal", features of a context alone offer limited explanatory power because they reveal the constraints on, not the mechanisms of, development. Instead, this model points to more "proximal" processes as the primary mechanisms of growth. Proximal processes

involve the reciprocal interactions between the developing child and other individuals across multiple contexts (Bronfenbrenner and Ceci 1994). We employ this framework to examine the critical role played by family members, peers, and the individual, who is an active participant in the developmental process, in promoting healthy development during transition periods.

Using this framework in the past, we have found that the support resources families have to offer and parent-child interactions related to transition-related challenges are important to successful role adaptations and well-being of high school dropouts during emerging adulthood. We have also found that family resources and supports operate in concert with the coping styles of the adolescents themselves (Dillon et al. 2003). Similarly, Chan et al. (2003) reported preliminary associations between contextual factors (e.g., interactions with parents, teachers, and peers) and early school leavers' decisions about subsequent schooling and resultant life satisfaction. In the current study, we seek to clarify these associations among both dropouts and graduates.

The first set of contextual factors this study looks at, family factors and processes, is well studied within the adolescent and young adult literature. Numerous family context variables, including parental education, household composition, and family socioeconomic status (Ekstrom et al. 1986; Rumberger et al. 1990), and family process variables, including family engagement (Franklin and Streeter 1992), the conflictual and supportive nature of parent-child relationships (Aseltine et al. 1994; Helsen et al. 2000; Holahan et al. 1994) monitoring, educational expectations, supervision (Astone and McLanahan 1991), decision making, and parenting styles (Rumberger et al. 1990), have been implicated in early school leaving, as well as mental health and social adaptation among adolescents and young adults more generally. In this paper, we examine the specific family context of household composition (i.e., two-parent versus one parent versus no parent households) and family process variables that capture both transition specific and general family support, all of which have been found to be associated with dropping out and mental health in young adulthood, to determine their efficacy in predicting depressive symptoms and life satisfaction for dropouts and graduates after leaving high school. We expect emerging adults from family environments with more contextual resources (e.g., two parent households) and more general and transition specific support to fare better than emerging adults without these resources.

In addition to family variables, we also focus on peer support as an additional process variable. In the context of increased independence from parents, peer relationships are increasingly important throughout adolescence and emerging adulthood (Furman and Buhrmester 1992;

Collins and Laursen 2004). Research has established that supportive peer relationships positively affect mental health among adolescents and young adults (Helsen et al. 2000; Hussong 2000; La Greca and Harrison 2005; Liem et al. 2008; Ma and Huebner 2008). We expect emerging adults with more peer support to fare better during the transition from high school than those with less peer support.

In keeping with Bronfenbrenner's framework, we have also focused on an intraindividual resource that we expect to affect young adult mental health—the adolescent's attachment style. Adult attachment researchers (Collins and Read 1990) have identified personality differences in the beliefs and expectations that individuals hold about themselves and others that are fundamental to their feelings of security and well-being in adulthood. These beliefs and expectations are closely tied to early childhood experiences with parents (Bowlby 1973, 1982), and exhibit some continuity over time (Fraley 2002). Attachment styles affect how individuals experience relationships and the ways in which they experience, express, and cope with distressing emotions.

Insecure attachment styles (avoidant and anxious) have been consistently linked to negative mental health outcomes (Roberts et al. 1996; Murphy and Bates 1997; Shaver and Hazan 1994). Furthermore, attachment style may be key in understanding individuals' ability to cope with difficult life events, threats, and developmental tasks (Mikulincer and Florian 1998), such as leaving home and entering college (Lopez et al. 2002). Evidence suggests that attachment style may affect psychologic well-being by affecting individuals' perceptions of whether others will be responsive and available when needed, as well as their capacity to use other people as a source of support and coping strategy (Wei et al. 2005; DeFronzo et al. 2001; Simpson et al. 1992). Given this research, we hypothesized that young adults who have a more secure attachment style and feel comfortable eliciting support when coping with transition specific challenges, such as dropping out of or graduating from school and transitioning to new school or work environments, are more likely to report positive mental health outcomes than emerging adults who attempt to cope with these developmental challenges in isolation.

In sum, the current study examines depressive symptoms and life satisfaction during emerging adulthood, focusing on differences between high school dropouts, dropouts who later get GEDs or high school degrees, and high school graduates. We hope to improve on past research by using better measures of depression and life satisfaction, using longitudinal data with a diverse sample, and working within an ecologic developmental framework. Controlling for demographic variables (e.g., gender, Black and Latino ethnic groups, and parent education/SES) we

hypothesize that: (1) Dropouts will report more depressive symptoms and less life satisfaction than graduates. Dropouts who go on to acquire high school degrees or GEDs will report less depressive symptoms and more life satisfaction than dropouts without a degree. These differences will be evident at the time of adolescents' expected high school graduation (T1) and will continue to be evident 4 years (T3) after the transition from high school. (2) Graduation status, household composition (coming from a two parent rather than one parent or no parent home), higher levels of general and transition specific support from parents, higher levels of peer support, and more secure attachment style will be associated with less depressive symptoms and more life satisfaction for both dropouts and graduates at T1. (3) Graduation status, household composition, general and transition specific support from parents, peer support, and adolescent attachment style will also be predictive of *changes* in depressive symptoms and life satisfaction between T1 and T3 after controlling for these mental health variables at T1.

We will also explore, but do not have a priori hypotheses about, whether dropout status will moderate the relationships between our mental health outcomes and household composition, parental general and transition support, peer support, and attachment. Such analyses will enable us to determine whether family, peer, and individual resources are more important for emerging adults who have not completed high school than they are for young adults who have accomplished this developmental task.

Method

Sample

The data for these analyses came from three waves of a prospective mental health study of a cohort of young people as they made the transition from high school to subsequent school and work roles. High school seniors ($N = 1,143$) were first interviewed in the winter of 1998. This sample was obtained through random sampling of enrolled seniors in nine Boston area high schools that were selected to reflect the socioeconomic and racial/ethnic diversity of the state. Additional individuals ($N = 182$) who would have been in this graduating cohort, but dropped out before graduation were also identified.

Dropouts and graduates were interviewed again in 2000 and 2002. At T2 and T3, 1,093 (83%) and 905 (83%) young adults were interviewed, respectively. Compared to young adults who participated at T1, young adults who were *not* interviewed at T2 and T3 were more likely to be male ($\chi^2(1, n = 1,325) = 9.571, p < .01$), to be an ethnic minority ($\chi^2(16, n = 1,325) = 53.83, p < .05$), to have

parents with a high school degree or less ($\chi^2(4, n = 1,264) = 33.69, p < .05$), to have dropped out of school ($\chi^2(1, n = 1,325) = 10.17, p < .05$), and to live in one or no parent households ($\chi^2(4, n = 1,325) = 41.51, p < .05$). They also reported lower parental support ($F = 7.97, p < .05$), transition specific support ($F = 22.18, p < .05$), and peer support ($F = 19.97, p < .05$) than young adults who continued in the study. No significant differences in attachment style, life satisfaction, or depressive symptoms were found. These results suggest that we have lost young adults with fewer support resources, and thus are limited in our ability to generalize our findings to these more challenged young people.

The mean age of participants included in this study at T1 was 18.08 years old ($SD = 1.40$); 643 (48.5%) were males and 682 (51.5%) were females. Among them 648 (46.9%) were self-described as white, 147 (11.1%) as Latino, 248 (18.7%) as Black, 93 (7.0%) as Asian or Asian American, and 185 (14.3%) as other. About 703 (53.1%) participants had at least one parent who completed some schooling beyond high school; 360 (27.2%) participants had at least one parent who had a high school degree; and 201 (15.2%) participants had neither parent who completed high school. At T1, 805 (60.8%) of participants were living with two parents, 391 (29.5%) with one parent, and 129 (9.7%) with no parents.

Measures

Graduation status was determined through records provided by each school system and self-report measures. Dropouts who had not obtained a high school degree or GED at each time point were coded 0. Dropouts who had subsequently returned to school and obtained a high school degree or GED were coded 1. High school graduates who never dropped out were coded 2. These categories are mutually exclusive and were created for T1 and T3. Of the 182 dropouts, 60 had graduated or received their GED by T3. For regression analyses, two dummy variables were created for each wave of data. For the variable 'dropout status', dropouts who do not later obtain GEDs or degrees were coded as 1. For the variable 'GED status', dropouts who later obtained GEDs or degrees were coded as 1.

The family context variable, *household composition*, was measured at T1. Respondents were asked with whom they currently lived. Two parent households were coded as 2, one parent households as 1, and no parent households as 0.

Two family process variables, transition support and general parental support, were examined. *Transition support* was assessed at T1 and used items from the National Educational Longitudinal Study (U.S. Dept. of Education 1990). This measure assessed transition specific

interactions between adolescents and their parents germane to planning for their future. Respondents were asked about their parents' involvement in post-high school efforts to find jobs, address financial needs, return to school, or apply to college or other educational training programs. Sample items include: "Since September, how often have you discussed the following with your parent or parents: the kinds of jobs or businesses that might be right for you? Applying for college or other schools? Other concerns about how you will manage financially?" Items were scored on a four-point scale that ranged from "a lot" to "not at all." Cronbach's α for the current sample = .84.

General parental support was measured at T1 and T2 using a scale taken from Gore et al. (1992) to assess the extent to which parents' behavior addressed Cutrona's (1989) six support functions (social integration, reliable alliance, attachment, assurance of self-worth, guidance, and nurturance). Sample items include: "How much can you rely on your (mother, father) for help if you have a serious problem?" and "How much does your (mother, father) understand the way you feel about things?" Items are scored on a four-point scale from "a lot" to "not at all." Cronbach's α for the current sample = .85 for T1 and .87 for T2.

A six-item scale measuring perceived *peer support* was taken from Gore et al. (1992). Items paralleled those for parents. Sample items include: "How much do your friends really care about you?" and "How much can you rely on them for help if you have a serious problem?" Items are scored on a four-point scale ranging from "a lot" to "not at all." Cronbach's α for the current sample = .87 at T1 and .85 at T2.

The adolescent's *attachment style* (i.e., stance toward seeking and receiving help from others) was assessed at T1 and is based on an abbreviated version of Collins and Read's (1990) adult attachment instrument. Collins and Read (1990) identified three dimensions to their 21-item scale based on factor analysis: the extent to which respondents trust others and depend on them to be available when needed, the extent to which respondents fear close relationships and thus avoid them, and the extent to which respondents are comfortable with closeness and intimacy in relationships. They report good internal consistency and test-retest reliability for each factor. Sample items from the eight-item abbreviated version employed in this study include: "How often do you try to hide your thoughts and feelings from the people you are close to?" and "How often does sharing your thoughts and feelings with others you are close to make you uncomfortable?" Items are scored on a five-point scale ranging from "almost always" to "never." Cronbach's α for the current sample = .83.

The psychological outcomes, *depressive symptoms* and *life satisfaction*, were measured at T1 and T3. We used the

12-item version of the 20 item Center for Epidemiologic Studies—Depression Scale (CES-D) (Radloff 1977; Ross and Mirowsky 1984) to measure depressive symptoms. The CES-D assesses the self-reported frequency of depressive symptoms over the past week. The CES-D has been determined to be valid and reliable across diverse samples of adolescents and young adults (Roberts et al. 1990). Sample items from the version used in this study include: “you could not shake off the blues even with help from family or friends,” “everything you did was an effort,” “your sleep was restless,” and “you felt sad.” Each item is rated on a four-point scale ranging from “less than 1 day” to “5–7 days” in the last week. Use of the shortened version is supported by previous research (Kohout et al. 1993). Correlations between the full scale and the abbreviated version are very high. The Cronbach’s α for the CES-D for this study are .81 for T1 and .83 for T3.

Life Satisfaction was assessed using a measure adapted from the 11-item general positive affect scale of the Mental Health Inventory (Veit and Ware 1983). Sample items from the five-item measure ask how often during the past month: “Have you felt that the future looks hopeful and promising?” and “Has your daily life been full of things that were interesting to you?” Each item is rated on a six-point scale ranging from “all of the time” to “none of the time.” Cronbach’s α are .69 for T1 and .76 for T3.

Demographic characteristics were also assessed. *Gender* was measured at T1. Males were coded as 1 and females as 2. *Parental education* was included as a proxy for family’s socioeconomic status. It is an ordinal variable measuring the highest level of education attained by either parent. Respondents with at least one parent who received a degree higher than high school were coded as 2. Respondents with at least one parent who graduated high school were coded as 1. Respondents with neither parent who graduated high school were coded as 0. Self-identified *race and ethnic identity* were obtained at T1 using the two-pronged approach used in the 2000 census. Respondents were first asked whether they considered themselves to be of Hispanic or Latino origin. They were then asked to indicate their race. Responses included ‘white’, ‘Black or African American’, ‘Asian’, ‘American Indian or Alaska native’, ‘Native Hawaiian or other Pacific islander’, ‘Hispanic/Central American’, ‘Cape Verdean’, ‘Haitian/Caribbean’, and ‘other’. The selection of more than one response was permitted. In order to create one measure of race and ethnicity, all respondents who indicated Hispanic or Latino origin were grouped together, irrespective of racial designation. Dummy variables for Black or African American and Hispanic or Latino origin were created. Controls for demographic variables were employed in all regression models.

Analysis Plan

In order to test hypothesis 1, that dropouts, dropouts with high school degrees or GEDs, and graduates would differ in their reports of depressive symptoms and life satisfaction at T1 and T3 after controlling for demographic variables, ANCOVAs were employed. In order to test hypothesis 2, OLS hierarchical regressions were employed. Variables were added to the regression model in the following order: covariates, including demographic variables, then graduation status, household composition, transition specific and general parental support, peer support, and attachment style. This order was determined based on the nature of the variables. Distal variables, which are thought to have less influence, were placed before proximal variables in the regressions (Bronfenbrenner and Ceci 1994). To test hypothesis 3, controls for prior levels of the dependent variable were entered in the first step together with the demographic variables, and the effect of the independent variables on *changes* in T3 depressive symptoms and life satisfaction were examined. In order to explore whether the effects of the independent variables would vary by dropout status, interaction variables were created and then entered into the regressions separately and one at a time to test their effect.

Results

Preliminary Analyses

ANOVAs were used to examine differences in continuous variables between dropouts, dropouts who later obtained GEDs or high school degrees, and graduates. As indicated in Table 1, the three groups were significantly different on all continuous variables, with the exception of T3 life satisfaction. For these variables, post hoc tests demonstrated that graduates reported significantly higher levels of transition, parental, and peer support, attachment, and life satisfaction, and lower levels of depressive symptoms than dropouts. Dropouts with GEDs reported significantly higher levels of transition support than dropouts without GEDs. Furthermore, as seen through the decrease in the *F*-values from T1 to T2 and T3 for parental and peer support, depressive symptoms, and life satisfaction, group differences decreased from T1 to T3. Chi-squared analyses also indicated that dropouts were more likely to be ethnic/racial minorities (χ^2 (16, $N = 1,325$) = 47.19, $p < .05$), were less likely to come from two-parent households (χ^2 (4, $N = 1,325$) = 107.50, $p < .05$), and were less likely to have parents who had more than a high school education than were graduates (χ^2 (4, $N = 1,264$) = 24.50, $p < .05$). Chi-squared analyses for gender were not significant.

Table 1 Descriptive statistics and ANOVAs of differences between dropouts, dropouts who later obtained GEDs or degrees, and graduates

	Range	Dropouts		Dropouts w GEDs/degrees		Graduates		<i>df</i>	<i>F</i>
		<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD		
T1 Transition support	0–21	9.05	5.98	12.27	5.74	13.57	4.77	2, 1317	52.13*
T1 Parental support	0–36	22.77	9.95	22.34	8.12	26.77	7.28	2, 1320	22.65*
T2 Parental support	0–36	23.75	9.11	23.59	9.09	27.14	7.90	2, 1087	9.38*
T1 Peer support	0–18	13.56	4.31	14.01	4.14	15.01	3.20	2, 1315	12.55*
T2 Peer support	0–18	15.36	2.87	14.64	4.42	16.07	2.63	2, 1088	7.90*
T1 Attachment	0–32	20.95	6.57	21.25	5.51	22.36	5.44	2, 1320	4.60*
T1 Depression	0–34	10.68	7.47	11.57	8.54	8.80	5.83	2, 1320	9.33*
T3 Depression	0–34	8.25	5.92	9.90	6.93	7.51	5.85	2, 905	3.29*
T1 Life satisfaction	0–25	13.50	4.58	13.65	5.17	15.73	3.94	2, 1320	23.05*
T3 Life satisfaction	0–25	15.63	4.79	14.59	4.81	15.86	4.21	2, 905	1.69

Note: Ns for T1 = 142 dropouts; 40 dropouts with GEDs/degrees; 1,143 for graduates; Ns for T2 = 67 dropouts; 48 dropouts with GEDs/degrees; 978 graduates; Ns for T3 = 46 dropouts; 39 dropouts with GEDs/degrees; 823 graduates

* $p < .05$

Bivariate correlations were employed next to examine the relationships among variables. Although variables in similar categories were related, no problems with multicollinearity were observed. Excluding correlations of the same measure at different time points, correlations among independent variables did not exceed $r = .40$. Bivariate correlations were also used to examine the relations among the two dependent variables at T1 and T3. Correlations between depressive symptoms and life satisfaction at the same wave were significant and ranged from $-.56$ to $-.64$. Although these variables were related, they appear to signify different constructs.

Hypothesis 1

We first used one-way between-groups ANCOVAs to test whether the differences in mental health outcomes among graduation status categories remained after controlling for demographic variables. After controlling for ethnicity, parent education, gender, and household composition, we found significant differences in T1 depressive symptoms [$F(2, 1254) = 8.00, p < .05, \text{partial } \eta^2 = .013$], and T1 life satisfaction [$F(2, 1254) = 14.20, p < .05, \text{partial } \eta^2 = .022$] among dropouts, dropouts with GEDs, and graduates. Repeat contrasts demonstrated that while dropouts with and without GEDs had significantly lower levels of satisfaction and higher levels of depression than graduates, there were no significant differences among the two groups of dropouts. There were no significant differences for T3 depressive symptoms and life satisfaction. Our hypothesis, that dropouts experienced more depressive symptoms and less life satisfaction, was confirmed for T1 only. These differences decreased and became insignificant at T3.

Hypothesis 2

Table 2 summarizes the results of the multiple regression models predicting depressive symptoms and life satisfaction at T1 based on graduation status, household composition, parental support for transition specific tasks, general parental support, peer support, and attachment style. Gender, ethnicity, and parental education were first entered into the equation as controls. Graduation status, household composition, parent transition support and general parental support, peer support, and then attachment were entered into the regression at steps 2 through 5, respectively.

As indicated in Table 2, gender, parental education, graduation status, household composition, transition support, parental support, peer support, and attachment style each made independent contributions to the variance accounted for in T1 depressive symptoms. As predicted, being a high school dropout with and without a GED, coming from households with fewer parents, having lower levels of transition, parental, and peer support, and lower levels of secure attachment were all related to increased levels of depressive symptoms. Being female and having less educated parents were also associated with higher levels of depressive symptoms. The overall model accounted for 24.3% of the variance in depressive symptoms at T1.

A second regression model (see Table 2) showed that gender, Latino status, parental education, graduation statuses, household composition, transition, parental, and peer support, and attachment style each made independent contributions to the variance accounted for in T1 life satisfaction. As predicted, being a high school dropout with and without a GED, residing in a household with fewer parents, having lower levels of transition, parental, and peer support, and having lower levels of secure attachment

Table 2 Summary of hierarchical regression analyses predicting T1 depressive symptoms and life satisfaction ($N = 1,325$)

Variable	Depression T1				Life Satisfaction T1			
	<i>B</i>	SE <i>B</i>	β	ΔR^2	<i>B</i>	SE <i>B</i>	β	ΔR^2
Step 1				.026*				.025*
Gender	1.71	.34	.14*		-.62	.23	-.08*	
Black identity status	.29	.45	.02		-.47	.30	-.05	
Latino identity status	.71	.56	.04		-.72	.38	-.06*	
Parent education	-.51	.23	-.06*		.62	.16	.11*	
Step 2				.012*				.027*
Dropout status T1	1.81	.56	.09*		-2.03	.38	-.15*	
GED status T1	2.54	1.01	.07*		-1.91	.67	-.08*	
Step 3				.004*				.005*
Household comp.	-.60	.28	-.07*		.49	.18	.08*	
Step 4				.046*				.092*
Transition support	-.07	.04	-.06*		.11	.02	.14*	
Parent support T1	-.17	.03	-.21*		.14	.02	.27*	
Step 5				.021*				.023*
Peer support T1	-.29	.05	-.16*		.20	.03	.16*	
Step 6				.134*				.065*
Attachment T1	-.42	.03	-.39*		.20	.02	.27*	
	Total $R^2 = .243$				Total $R^2 = .237$			

* $p < .05$

predicted lower levels of life satisfaction. Being female or Latino or having parents with lower levels of parent education also predicted lower levels of life satisfaction. The overall model accounted for 23.7% of the variance in life satisfaction.

Hypothesis 3

Table 3 presents similar regression models predicting depressive symptoms and life satisfaction 4 years later at T3. T1 depressive symptoms and life satisfaction were included at step 1 so that we could interpret coefficients for the other independent variables as the effects of these variables on change in these outcomes from T1 to T3.

For T3 depressive symptoms, Black and Latino status, parental and peer support, and attachment style each made independent contributions to the variance accounted for when T1 depressive symptoms were controlled. Lower levels of parent and peer support and less secure attachment were associated with increased levels of depressive symptoms from T1 to T3. In addition, while being Black or Latino were significant predictors of changes in depressive symptoms, gender and parental education were not. Given that graduation status, household composition, and transition support did not have a significant effect, our hypothesis was only partially confirmed. The full model was again significant and accounted for 18.9% of the variance in T3 depressive symptoms.

Controlling for T1 life satisfaction, Latino status, dropout status, and parental and peer support each made independent contributions to the variance in T3 life satisfaction. Counter to our hypotheses, attaining a GED, household composition, transition support, and attachment did not have a significant effect. Moreover, being a high school dropout without a GED was related to increased levels of satisfaction. Having lower levels of parent and peer support were associated with decreased levels of life satisfaction from T1 to T3. Gender and Black identity were not significant; Latino identity was. The full model was significant and accounted for 22.8% of the variance in T3 life satisfaction.

Exploratory Analyses

To explore whether the effects of the household composition, parent, transition, and peer support, and attachment on depressive symptoms and life satisfaction would vary among dropouts and graduates, five interaction terms were centered and created. Interaction terms were then entered into the regression analyses separately and one at a time (Tabachnick and Fidell 2001).

For T1 depressive symptoms, the effect of parental support was moderated by dropout status ($\beta = -.07, p < .05$). While low levels of parental support had a similar effect on dropouts and graduates, high levels of parental support had a stronger positive effect on dropouts. For T3 depressive symptoms, no interaction term was significant.

Table 3 Summary of hierarchical regression analyses predicting T3 depressive symptoms and life satisfaction ($N = 908$)

Variable	Depression W3				Life satisfaction W3			
	<i>B</i>	SE <i>B</i>	β	ΔR^2	<i>B</i>	SE <i>B</i>	β	ΔR^2
Step 1				.136*				.185*
Outcome T1	.33	.03	.34*		.43	.03	.41*	
Gender	-.02	.38	-.00		.19	.26	.02	
Black status	1.55	.49	.10*		-.66	.34	-.06	
Latino status	1.42	.61	.08*		-.95	.43	-.07*	
Parent education	-.19	.25	-.02		.13	.18	.02	
Step 2				.002				.006*
Dropout status T3	-.37	.66	-.02		1.12	.47	.08*	
GED status T3	1.09	.91	.04		-.27	.64	-.01	
Step 3				.001				.001
Household comp.	-.22	.30	-.03		.19	.21	.03	
Step 4				.033*				.025*
Transition support	.00	.04	.00		.04	.03	.05	
Parent support T2	-.15	.03	-.20*		.09	.02	.16*	
Step 5				.014*				.010*
Peer support T2	-.27	.07	-.13*		.17	.05	.11*	
Step 6				.004*				.002
Attachment T1	-.08	.04	-.08*		.04	.03	.05	
	Total $R^2 = .189$				Total $R^2 = .228$			

* $p < .05$

For T1 life satisfaction, dropout status moderated the effect of household composition ($\beta = -.07$, $p < .05$) and transition support ($\beta = -.07$, $p < .05$). While dropouts and graduates living with no parents had similar levels of life satisfaction, graduates living with one or two parents reported more satisfaction than dropouts. While life satisfaction was similar among graduates and dropouts at low levels of transition support, when transition support was high, graduates rates of life satisfaction increased dramatically and dropouts decreased slightly. Exactly the same pattern emerged at T3 when dropout status again moderated the effect of transition support ($\beta = -.08$, $p < .05$).

Conclusions, Future Directions and Study Limitations

The purpose of this study was to examine mental health during emerging adulthood among a cohort of high school graduates and dropouts. This study adds to past studies that explored the effects of dropping out (e.g., Kaplan et al. 1994; Kortering et al. 1997; Ou 2008), by extending the period of observation over 4 years. Our results demonstrated that while there were significant and relatively large differences between dropouts and graduates in depressive symptoms and life satisfaction at T1, even after controlling for demographic variables, by 4 years later these differences had decreased. After controlling for demographic

variables, we found that the differences between high school graduates and dropouts in T3 depressive symptoms and life satisfaction became insignificant. These results were confirmed by regression analyses, which demonstrated that dropping out of high school, even after attaining a GED, was significantly related to higher levels of depressive symptoms and lower levels of life satisfaction at T1. However, at T3 graduation status was unrelated to depression and having dropped out and not received a degree or GED was related to *increased* life satisfaction. These results suggest that the later mental health consequences of dropping out, as found in past studies (Kaplan et al. 1994; Kortering et al. 1997; Liem et al. 2001; Ou 2008), are likely mediated through the mental health consequences dropouts experience at the time they drop out or soon after dropping out. The high predictive value of T1 mental health outcomes on T3 mental health outcomes in the regression analyses supports this possibility.

Furthermore, in contrast to Ou's findings (2008), our results regarding the effect of attaining a GED or degree on dropouts' mental health were inconsistent. ANOVAs did not reveal the hypothesized mental health differences between dropouts with and without GEDs. In addition, regression analyses for T3 life satisfaction showed that *not* attaining a GED was related to increased life satisfaction. However, the GED status variable did significantly affect T1 depression and life satisfaction as hypothesized, thereby

pointing to the potential benefit of attaining a GED or degree on mental health shortly after dropping out. Future studies should further explore this relationship.

Our results suggest that although high school dropouts may be more depressed and less satisfied during late adolescence, these individuals are largely able to rebound during the early years of young adulthood. However, the direction of causation is ambiguous because we do not have mental health data for our sample prior to the high school years and, thus, cannot determine whether a student's poor mental health preceded and contributed to his or her school failure, co-occurred with it, or resulted from dropping out. In either case, this study demonstrates that by early adulthood dropouts are able to bounce back from the negative mental health they experienced when leaving high school.

This study also explored those factors that may be implicated in mental health during young adulthood. The quality of the parent-child relationship, the nature of child-parent interactions related to transition-related challenges, and household composition have been linked to dropping out in several studies (Astone and McLanahan 1991; Chan et al. 2003; Streeter and Franklin 1991; Younge et al. 1996). Furthermore, these factors have been linked more generally to mental health among adolescents and young adults (Dillon et al. 2003; Helsen et al. 2000; Holahan et al. 1994). Therefore, we sought to determine if these factors play a role in later mental health, as dropouts and graduates enter emerging adulthood. As hypothesized, household composition, parent support, and transition specific support were significant predictors of depressive symptoms and life satisfaction at T1. However, only general parent support predicted changes in mental health from T1 to T3.

These results suggest that household composition and transition support are more important in the onset, rather than the maintenance, of depressive symptoms and low-life satisfaction. These results may be influenced by the changing nature of the parent-child relationship. As young adult children move from home and become more independent, the composition of the household and direct involvement of parents in transition planning may become less important to mental health, while more general parent support remains important. Also, transition planning may be more influential at earlier ages. These results may also reflect the nature of our measures. In the regression models, we used data on household composition and transition support from T1 only, but used data on general parent support from both T1 and T2.

Furthermore, dropout status was found to moderate the relationships between several family variables and mental health. While high levels of parent support had a greater effect on dropouts' depression, high levels of transition support and two-parent households had a greater effect on

graduates' life satisfaction. Although low in predictive value, these results suggest the importance of continued parent support, but not transition support and household composition, in helping dropouts to rebound.

The relationships between peer support and mental health was also explored. Our results confirmed the results of past studies suggesting the importance of peer relations during emerging adulthood (Hussong 2000; Liem et al. 2008). Peer support was significantly related to T1 and changes in T3 depressive symptoms and life satisfaction. Given young adults' increasing independence from their families during early adulthood, peer support remains important in predicting and better understanding their mental health (Helsen et al. 2000).

We also found that young adults who have a secure attachment style, and thus are more open to support, are less depressed at T1 and T3 and more satisfied at T1 than individuals who have a less secure attachment style. Changes in life satisfaction from T1 to T3 were not significantly affected by attachment style. With the exception of T3 life satisfaction, these results confirm the results of past studies, which show that individuals with a more secure attachment style have more positive mental health outcomes (e.g., Shaver and Hazer) and are better able to cope with the stressors and developmental tasks associated with emerging adulthood (e.g., Wei et al. 2005).

There are several limitations to consider in interpreting these findings. First, as described earlier, sample attrition may have conservatively biased the impact of the independent variables on mental health. The effect of attrition on the sample size of dropouts, combined with the difficulty of attaining a sample of dropouts in the first place, resulted in relatively small sample sizes for the two dropout groups (those with and without GEDs). This may have limited our ability to obtain significant findings for the graduation status variables. Furthermore, the findings are limited in terms of suggesting causality. Although we tried to model a causal process using longitudinal data, it remains impossible to be sure about the direction of causation. Methodological limitations also restrict the interpretation of findings. The data used for this study were limited to self-report measures. Multiple reports from parents and peers may more accurately capture participants' relationships with their parents and peers. Lastly, this study controlled rather than examining the relationships between gender, race, ethnicity, and socioeconomic status and mental health variables. More direct consideration of these issues is necessary in order to fully understand mental health within the lives of emerging adults.

Emerging adulthood is a time of change and adjustment to new roles (Arnett 2000). Our findings suggest that successfully navigating this developmental period is a transactional process involving individuals, as well as their

peers and families. For dropouts and graduates, the presence of more external family and peer resources, in conjunction with the capacity to accept and utilize them, is critical to protect against poor mental health in young adulthood. In addition, the interactions modestly suggest that specific family resources may have different effects for dropouts and graduates. These results point to the usefulness of employing ecological models in understanding the mental health of young adults during this period of transition (Bronfenbrenner 1986). Furthermore, this study clarifies which family factors may be more influential during late adolescence versus young adulthood. Given the changes that take place in young adults' lives during emerging adulthood, their needs and utilization of family resources are likely to change. Our results likely reflect these changes. Future studies should continue to use ecological models to explore mental health trajectories among graduates and dropouts during emerging adulthood.

This study also points to the resilience of high school dropouts in terms of mental health. Dropouts in this study were largely able to rebound from the negative mental health that they reported during the first wave of data collection. Furthermore, although our results were inconsistent, this study, along with past studies (Chan et al. 2003; Dillon et al. 2003; Ou 2008), points to the potential importance of further exploring the effect of attaining a GED and of family dynamics on the mental health of dropouts. Future studies should further examine factors likely to be influential in high school dropouts' ability to rebound from the disruptive consequences of dropping out.

These findings have important implications for intervention programs. Programs designed to help parents become more aware of young adult children's continuing need for their general support, and at the same time address young adults' reluctance to rely on parental and peer support may be especially helpful. Although this reluctance may be developmentally appropriate for many youth, higher risk adolescents may be more vulnerable to psychologic problems if they are less able to accept family and peer support during the transition to adulthood or after a major disruption like dropping out.

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