Negotiating the Transition to College: Developmental Trajectories and Gender Differences in Psychological Functioning, Cognitive-Affective Strategies, and Social Well-Being

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Abstract

The transition to college, which for the majority of youth coincides with the transition to emerging adulthood, is stressful and disruptive. Using latent growth curve modeling (LGM), this study examines the longitudinal course of psychosocial adjustment in a sample of 2,095 emerging adults, at three time-points across this transition: In the week prior to college entry and at the end of each semester of the first year. Overall, the immediate transition is characterized by steep declines in psychological well-being, cognitive-affective strengths, and social well-being as well as increases in psychological distress and cognitive-affective vulnerabilities. These setbacks generally plateau, but do not resolve, later in the year. Examining gender differences in developmental trajectories revealed that females experience additional elevations in psychological distress even after the immediate transition, while males evidenced worse baseline levels in cognitive-affective vulnerabilities, cognitive-affective strengths, and social well-being. These findings indicate the need for services that promote well-being across this challenging developmental transition.

Keywords

emerging adulthood, psychosocial adjustment, mental health, longitudinal, gender differences, college transition

The transition from late adolescence into emerging adulthood is a key developmental period marked by changing roles, new challenges, and increased responsibilities. Late adolescence typically involves a focus on academic achievement, establishing and renegotiating social roles and moving away from home; extending these developmental tasks, emerging adulthood continues to entail exploring identity in academic and social domains as well as establishing personal responsibility and independent decision making (Arnett & Tanner, 2006; Kerig & Schulz, 2012; Schulenberg, Bryant, & O'Malley, 2004). An increasing majority of youth simultaneously transition between these developmental periods and into college (U.S. Department of Labor, 2011). Theory and research have established school transitions as bringing disruptive shifts in structure, roles, and expectations, which can jeopardize youths' psychological and social adjustment (Blyth, Simmons, & Carlton-Ford, 1983; Crockett, Petersen, Graber, Schulenberg, & Ebata, 1989; Martínez, Aricak, Graves, Peters-Myszak, & Nellis, 2011; Newman, Newman, Griffen, O'Connor, & Spas, 2007; Rudolph, Lambert, Clark, & Kurlakowsky, 2001). Thus, the transition to college offers an important developmental context for examining developmental trajectories of psychosocial risk versus resilience in emerging adulthood.

A developmental psychopathology perspective on emerging adulthood considers this transitional period to be a critical time for observing changes in psychosocial adjustment (Schulenberg, Sameroff, & Cicchetti, 2004). As the transition to college includes both a developmental transition—into emerging adulthood—and an ecological transition—to new academic, social, and often living contexts—it can be viewed as a crucial turning point in development, which presents a heightened risk for disruption and vulnerability (Compas, Wagner, Slavin, & Vannatta, 1986; Rutter; 1996; Rutter & Sroufe, 2000; Seidman & French, 2004). Increasing evidence suggests that difficulties in psychological and social domains during this critical juncture presage adjustment difficulties later in life (Rao et al., 1995; Rao, Hammen, & Daley, 1999; Reinherz, Giaconia, Hauf, Wasserman, & Silverman, 1999). Thus, understanding the developmental course of psychosocial well-being during this formative

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developmental transition has far-reaching implications for understanding—and promoting—lifelong adjustment.

Psychosocial Adjustment Across the Transition to College

Psychosocial adjustment is considered a broad construct encompassing many domains, including psychological (Viet & Ware, 1983), cognitive and affective (Bryant & Veroff, 1984), and social (Diener & Ryan, 2009; Erikson, 1963). As each of these domains is multifaceted, research and theory indicate the importance of capturing multiple and broad aspects of adjustment, including both positive and negative valences (Caprara, Steca, Gerbino, Paciello, & Vecchio, 2005; Ryff, 1989; Viet & Ware, 1983), in any effort to understand functioning and well-being. Additionally, examining adjustment through a developmental turning point requires assessing multiple aspects of adjustment over time (Cicchetti, 1984). As such, the current research employed a multidimensional model of adjustment to capture various aspects of psychological functioning (both well-being and distress), cognitive-affective strategies (both strengths and vulnerabilities), and social well-being, over time.

Integrative theories of psychosocial adjustment have noted that environmental stressors such as the transition to college can impact personal resources, cognitive strategies, and overall functioning (Billings & Moos, 1982). In the face of rapid developmental changes in relationships, responsibilities, and expectations, the transition to college often is accompanied by psychosocial adjustment difficulties (Abdullah, Elias, Mahyuddin, & Uli, 2009; Song et al., 2008; Tao, Dong, Pratt, Hunsberger, & Pancer, 2000). Thus, both as a psychosocial stressor and as a developmental milestone, the transition to college can bring about changes in multiple domains of psychosocial adjustment, including psychological functioning, cognitive-affective strategies, and social well-being.

Psychological functioning. An increasing number of college-attending emerging adults face elevated stress, psychological distress, depression, and anxiety (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001; Bewick, Gill, Mulhearn, Barkham, & Hill, 2008; Bouteyre, Maurel, & Bernaud, 2007; Eisenberg, Gollust, Golberstein, & Hefner, 2007; Svanum & Zody, 2001). Some epidemiological data indicate that college students experience clinical levels of distress at a higher rate than other youth or adult samples (Bayram & Bilgel, 2008) or general population norms (Stallman, 2010). Other research has pinpointed the first year of college as particularly distressing (Bayram & Bilgel, 2008; Sher, Wood, & Gotham, 1996; Towbes & Cohen, 1996), highlighting the importance of this pivotal developmental transition in establishing a trajectory of adjustment.

Although much research on emerging adults' adjustment to college focuses on psychological distress, understanding the full picture of adjustment from an integrated psychosocial framework requires considering strengths and positive aspects of adjustment (Caprara et al., 2005; Ryff, 1989; Viet & Ware, 1983). Some research has noted that indicators of psychological well-being, such as self-esteem, self-efficacy, and hope, act as protective factors against distress in college-attending emerging adults (Pritchard, Wilson, & Yamnitz, 2007; Ramos-Sánchez & Nichols, 2007) and can promote academic success and retention (Gloria & Ho, 2003; Pritchard & Wilson, 2003; Snyder, Hackett, Stewart, & Smith, 2002). Given the importance of positive adjustment during this transition, this study examines both positive and negative adjustment together, as well as how they unfold across this developmental turning point.

Cognitive–affective strategies. Although it is important to know what psychological challenges accompany the transition to college, it is equally important to understand emerging adults' personal resources for managing this life transition. Psychosocial theory places importance not just on environmental stressors but also on personal resources in predicting positive adjustment (Billings & Moos, 1982). Supporting this framework, there is some evidence that various cognitive-affective strategies, such as coping, emotion regulation, and thinking styles, impact emerging adults' adjustment to college (Bouteyre et al., 2007; Deckro et al., 2002; Jones & Frydenberg, 1998; Parker, Duffy, Wood, Bond, & Hogan, 2005; Pritchard et al., 2007) and academic achievement (Parker, Summerfeldt, Hogan, & Majeski, 2004; Vaez & Laflamme, 2008). Thus, this comprehensive examination of psychosocial adjustment considers the context of emerging adults' cognitive-affective strengths and vulnerabilities, as these strategies might be challenged during this developmental risk period.

Social well-being. Theorists have posited that in addition to emotional and psychological well-being, social well-being represents a central component of mental health and psychosocial functioning (Keyes, 2005). The transition to college is marked by major shifts in social context. Emerging adults separate from their families developmentally and often logistically and struggle to sustain old friendships from high school while forging new ones at college. At the cusp of emerging adulthood, new college students have to negotiate an unfamiliar social landscape with peers who study, socialize, and often live together, as well as with staff and faculty who serve as advisors, instructors, mentors, and *in loco parentis*. Emerging adults frequently report social difficulties in adjusting to college (American College Health Association, 2012; Surtees, Wainwright, & Pharoah, 2002; Tyrrell, 1992), and research indicates that social support and well-being are related broadly to college adjustment (Bouteyre et al., 2007; Compas et al., 1986; Tao et al., 2000), academic functioning (DeBerard, Spielmans, & Julka, 2004), and retention (Gloria & Ho, 2003). Although these findings emphasize the importance of social adjustment across the transition to college, research has yet to profile the *trajectories* of social adjustment during this time of great social significance and flux.

Gender Differences in Adjustment to College

Integrative theories of psychosocial adjustment have recognized the impact of gender on relations among different

psychosocial factors, stressors, and aspects of adjustment (e.g., Hankin & Abramson, 2001; Marchand & Durand, 2011). Many studies of college student distress have demonstrated that, similar to general samples of postpubertal adolescents and adult women, college-attending females experience greater levels of stress and distress than their male peers do (e.g., Abouserie, 1994; Adlaf et al., 2001; Alfeld-Liro & Sigelman, 1998; Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Surtees et al., 2002). However, males typically display greater externalizing behaviors and rates of dropping out and also have been shown to struggle with cognitive strengths such as internal regulation and coping strategies (Arthur, 1998; Dwyer, Hodson, & McCloud, 2013; Nelson & Padilla-Walker, 2013). Other research presents mixed, inconsistent, or even conflicting findings on gender differences in college adjustment (Bewick et al., 2008; Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Bouteyre et al., 2007; Fisher & Hood, 1987; Gall, Evans, & Bellerose, 2000; Sher et al., 1996; Tao et al., 2000). Further, this research often is limited to assessments of psychological distress, excluding broader indicators of adjustment. Beyond their *levels* of adjustment, it is unclear whether female and male emerging adults experience similar or different trajectories of adjustment across this developmental transition (Alfeld-Liro & Sigelman, 1998; Cooke et al., 2006; Stewart, Sokol, Healy, & Chester, 1986). Research on younger adolescents demonstrates that females often are more adversely affected by school transitions (Blyth et al., 1983; Crockett et al., 1989; Martínez et al., 2011; Simmons & Blyth, 1987), highlighting the importance of examining developmental trajectories separately for males and females in the college transition as well. In sum, this study was designed to clarify the gender similarities and differences in trajectories of adjustment to college over time, focusing on a broad array of adjustment outcomes within an integrative psychosocial framework.

Trajectories of Adjustment

Understanding the longitudinal picture of emerging adults' adjustment across the transition to college can help pinpoint key periods of risk or struggle versus periods of stability, as well as periods of resilience or positive growth. Previous research has explored the prevalence of adjustment difficulties at different points during college, but much of this research uses single time-point assessments or cross-sectional cohort designs (e.g., Bayram & Bilgel, 2008; Soet & Sevig, 2006; Song et al., 2008; Surtees et al., 2002; Tyrrell, 1992), does not include pre-transition baseline assessments (Gall et al., 2000; Sher et al., 1996; Tao et al., 2000), or does not track participants in each semester, necessary to capture change across the first year (Alfeld-Liro & Sigelman, 1998; Andrews & Wilding, 2004; Fisher & Hood, 1987; Pritchard et al., 2007). Further, much of this research is limited to brief assessments focused primarily on psychological distress, excluding broader and diverse aspects of adjustment. Despite limitations in design and assessment, piecing together disparate findings from past research suggests a picture of worsening psychosocial adjustment across

this developmental transition, from pre-college into the first year (Alfeld-Liro & Sigelman, 1998; Andrews & Wilding, 2004; Fisher & Hood, 1987), with some evidence of additional fluctuation after the immediate transition (Bewick et al., 2010; Cooke et al., 2006) as well as variability in patterns for different aspects of adjustment (Compas et al., 1986; Pritchard et al., 2007). In sum, although the significance of emerging adults' psychosocial adjustment across the transition to college is clear, the developmental pattern of adjustment over time requires further study. Pulling together the strengths of past research, the current study tracks the same participants longitudinally (Compas et al., 1986), from a pre-transition baseline through multiple assessments in the first year (Bewick et al., 2010; Cooke et al., 2006), with a broad range of assessments tapping both positive and negative aspects of psychosocial adjustment (Gall et al., 2000; Pritchard et al., 2007). Going further, the current research employs latent growth curve modeling (LGM) to chart trajectories of adjustment over time.

The Current Study

This study models longitudinal trajectories of psychosocial adjustment from a pre-transition baseline through the midpoint and end of the first year of college. In order to identify patterns of risk and resilience across this developmental transition, this research examines distinct trajectories, by gender, of various aspects of psychosocial adjustment, including (a) psychological functioning (both well-being and distress), (b) cognitive-affective strategies (both strengths and vulnerabilities), and (c) social well-being.

Based on theory and past research, we hypothesized that psychological distress would increase across this transition. Although research on college adjustment in other domains is limited, we speculated that, similar to the decline in adjustment for psychological distress, emerging adults would experience similar declines in psychological well-being, cognitive-affective strategies, and social well-being across this developmental transition. We also hypothesized that females would evidence greater psychological distress across the transition, but we did not make specific predictions about gender differences in patterns of psychological well-being, cognitive-affective strategies, or social well-being.

Method

Participants and Procedure

Participants ($N = 2,095$; $M_{age} = 18.49$; 68.7% female; 11.7% Asian, 2.3% Black, 6.8% Hispanic, 70.9% White, 1.8% Other, and 6.4% two or more ethnicities) included two consecutive cohorts (i.e., 1 year apart) of emerging adults transitioning to college at a private, urban, mid-sized Midwestern university. After the study was approved by an institutional review board, all incoming first-year undergraduate students in these cohorts were invited by e-mail to complete an online assessment of various aspects of psychosocial adjustment. Participants completed an informed consent online and data were deidentified

prior to analysis. Students who completed the survey were entered in prize drawings. At Time 1, in the week prior to the start of the academic year, 3,960 were invited and eligible and 2,974 (75.10%) participated. All students who completed the first round of the survey were invited to complete subsequent rounds. Of those eligible and invited at Time 2, at the midpoint of the first year, 2,012 (71.35%) participated. Of those eligible and invited at Time 3, at the end of the first academic year (i.e., 8 months after Time 1), 1,706 (63.40%) participated, yielding a final longitudinal sample of 2,095 who had data available on at least two time-points.[1] This sample did not differ from those who had insufficient data on the adjustment variables assessed in this study (ps = .071–.785).

In comparing the final sample to the overall population from which it was drawn, the final sample did not differ significantly by estimate of family income, $t(1559) = .79$, $p = .429$, mother's education, $t(1677) = 1.75$, $p = .080$, or father's education, $t(1664) = 1.63$, $p = .103$. However, the study sample did evidence higher high school grade point average (GPA), $t(2078) = 4.70$, $p < .001$, and was more likely to be female, $\chi^2(2) = 51.97$, $p < .001$, and White, $\chi^2(6) = 42.04$, $p < .001$.

Measures

Demographic information. Participants indicated their gender, which we confirmed with university records. The majority (74.44%) of participants provided an estimate of their family income. Finally, participants gave permission to release other demographic information from their university admissions records, including age, ethnicity, high school GPA, parental education, and college generational status. These variables were examined to determine the representativeness of the current sample, compared to the broader population from which it was drawn.

Psychosocial adjustment. At each time-point, participants completed validated measures assessing multiple aspects of psychosocial adjustment: (1) Psychological Well-Being (self-efficacy, self-esteem, resilience, hope, life satisfaction), (2) Psychological Distress (depression, anxiety, stress, perceived stress), (3) Cognitive-Affective Strengths (positive thinking, reappraisal, problem-focused coping, active-emotional coping), (4) Cognitive-Affective Vulnerabilities (dysfunctional thinking, suppression, avoidant coping), and (5) Social Well-Being (relationship satisfaction with friends and with parents; social support from friends, family, and general others). Table 1 provides information on the measures and their reliability (α range: .71–.98; test–retest reliability range: .29–.68).

Using a subsample with complete data across all time-points ($N = 1,332$), we used maximum likelihood (ML) confirmatory factor analysis (CFA) via LISREL 8 (Jöreskog & Sörbom, 1996) to test a hypothesized five-factor measurement model for the 21 measured scale-level indicators of psychosocial adjustment, splitting outcomes by domain and valence, using as input the separate item covariance matrices at Times 1, 2, and 3. The a priori measurement model consisted of intercorrelated dimensions of Psychological Well-Being (αs = .82–.84 for the

five included scales, at the three time-points), Psychological Distress (αs = .80–.87 for the four included scales), Cognitive-Affective Strengths (αs = .70–.73 for the four included scales), Cognitive-Affective Vulnerabilities (αs = .79–.80 for the three included scales), and Social Well-Being (αs = .73–77 for the five included items/scales; see Table 1 for a list of included scales in each dimension). Because the Problem-Focused and Active-Emotional Coping subscales were derived from the same self-report instrument, we allowed the unique error variances for these two measures to intercorrelate in the CFA model.

The proposed five-factor measurement model provided a reasonable goodness of fit (Bentler, 1990; Bentler & Bonnett, 1980; Browne & Cudeck, 1993; Hu & Bentler, 1998) to the adjustment data at each of the three time-points—Time 1: $\chi^2(178, N = 2,540) = 4,574.56$, root mean square error of approximation (RMSEA) = .096, standardized root mean square residual (SRMR) = .076, comparative fit index (CFI) = .94, Tucker-Lewis index (TLI) = .92; Time 2: $\chi^2(178, N = 1,566) = 2,973.64$, RMSEA = .099, SRMR = .078, CFI = .94, TLI = .93; and Time 3: $\chi^2(178, N = 1,357) = 2,624.67$, RMSEA = .099, SRMR = .073, CFI = .94, TLI = .93. Thus, we used the five CFA factors as primary dependent measures. To construct factor subscales for longitudinal analysis, we pooled male and female responses to the 21 adjustment measures collapsing across the three time-points, and then computed composite subscales for each of the five adjustment factors by averaging the standardized measures constituting each particular subscale.

Longitudinal measurement models that included autocorrelated measurement errors for each item (i.e., T1–T2, T2–T3, and T1–T3) were used to impose longitudinal metric invariance (in factor loadings) and longitudinal scalar invariance (in item intercepts) on the data of each of the five psychosocial adjustment factors separately, using structural equation modeling software and listwise deletion of cases with missing values (resulting Ns ranged from 1,007 to 1,146). Strongly supporting longitudinal measurement invariance, in all five cases the full-invariant measurement models provided acceptable goodness of fit to the data, RMSEAs < .10, SRMRs < .08, CFAs > .90, and NNFIs > .90 (Willoughby, Wirth, & Blair, 2012). Further supporting longitudinal measurement invariance, observed differences in goodness-of-fit indices for constrained versus unconstrained measurement models were very small—that is, 0.0001 ≤ CFIs ≤ .0042—all below the recommended cutoff value of CFI < 0.01 for inferring measurement invariance (Cheung & Rensvold, 2002). Thus, each of the five psychosocial adjustment factors demonstrated longitudinal invariance, thereby enabling meaningful comparisons of scores across time.

Results

Longitudinal Data Analysis Plan

This study was designed to examine changes in five broad domains of emerging adults' adjustment across a critical developmental transition. Thus, each domain of adjustment was

Table 1. Measures Included in the Five-Composite Model of Psychosocial Adjustment.

Composites	Scale Name	Items, α	Rating Scale	Test–Retest *r*	Range
Psychological Well-Being					
Self-Efficacy	General Self-Efficacy Scale (Sherer et al., 1982)	17 items, α = .87	1 (*Strongly disagree*) to 5 (*Strongly agree*)	.67	31–85
Self-Esteem	Rosenberg Self-Esteem Scale (Rosenberg, 1965)	10 items, α = .90	1 (*Strongly disagree*) to 7 (*Strongly agree*)	.68	0–30
Resilience	Connor–Davidson Resilience Scale (Campbell-Sills & Stein, 2007)	10 items, α = .91	0 (*Not true at all*) to 4 (*True nearly all of the time*)	.58	0–40
Hope	Adult Dispositional Hope Scale (Snyder et al., 1991)	8 items, α = .86	1 (*Definitely false*) to 4 (*Definitely true*)	.57	8–32
Life Satisfaction	Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)	5 items, α = .89	1 (*Strongly disagree*) to 7 (*Strongly agree*)	.60	5–35
Psychological Distress					
Depression	Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995), Depression subscale	7 items, α = .89	0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*)	.48	0–21
Anxiety	Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995), Anxiety subscale	7 items, α = .84	Same as above	.46	0–21
Stress	Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995), Stress subscale	7 items, α = .86	Same as above	.48	0–21
Perceived Stress	Perceived Stress Scale (Cohen & Williamson, 1988)	10 items, α = .85	0 (*Never*) to 5 (*Very often*)	.55	0–40
Cognitive-Affective Strengths					
Positive Thinking	Automatic Thought Questionnaire–Positive (Ingram & Wisnicki, 1988)	30 items, α = .98	1 (*Never*) to 5 (*All the time*)	.63	30–150
Emotion Regulation: Cognitive Reappraisal	Emotion Regulation Questionnaire (Gross & John, 2003), Reappraisal subscale	6 items, α = .87	1 (*Strongly disagree*) to 7 (*Strongly agree*)	.42	6–42
Problem-Focused Coping	Subscale of Brief COPE (Carver, 1997)	8 items, α = .77	1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*)	.59	8–32
Active-Emotional Coping	Subscale of Brief COPE (Carver, 1997)	10 items, α = .71	Same as above	.47	10–40
Cognitive-Affective Vulnerabilities					
Dysfunctional Thinking	Dysfunctional Attitudes Scale (Power et al., 1994)	24 items, α = .88	1 (*Totally disagree*) to 7 (*Totally agree*)	.63	29–168
Emotion Regulation: Expressive Suppression	Emotion Regulation Questionnaire (Gross & John, 2003), Suppression subscale	4 items, α = .76	1 (*Strongly disagree*) to 7 (*Strongly agree*)	.55	4–28
Avoidant Coping	Subscale of Brief COPE (Carver, 1997)	10 items, α = .77	1 (*I usually don't do this at all*) to 4 (*I usually do this a lot*)	.49	10–40
Social Well-Being					
Relationship Satisfaction: Friends	Developed for this research	1 item	1 (*Very dissatisfied*) to 5 (*Very satisfied*)	.29	1–5
Relationship Satisfaction: Parents	Developed for this research	1 item	Same as above	.43	1–5
Social Support: Friends	Subscale of Social Support Appraisals Scale (SSA; Vaux et al., 1986)	7 items, α = .90	1 (*Strongly disagree*) to 4 (*Strongly agree*)	.52	7–28
Social Support: Family	Subscale of SSA	8 items, α = .85	Same as above	.60	8–32
Social Support: General	Subscale of SSA	8 items, α = .88	Same as above	.60	8–32

Note. Cronbach's αs and test–retest correlations are averaged across three time-points. All scales are scored such that higher scores indicate greater levels of the constructs.
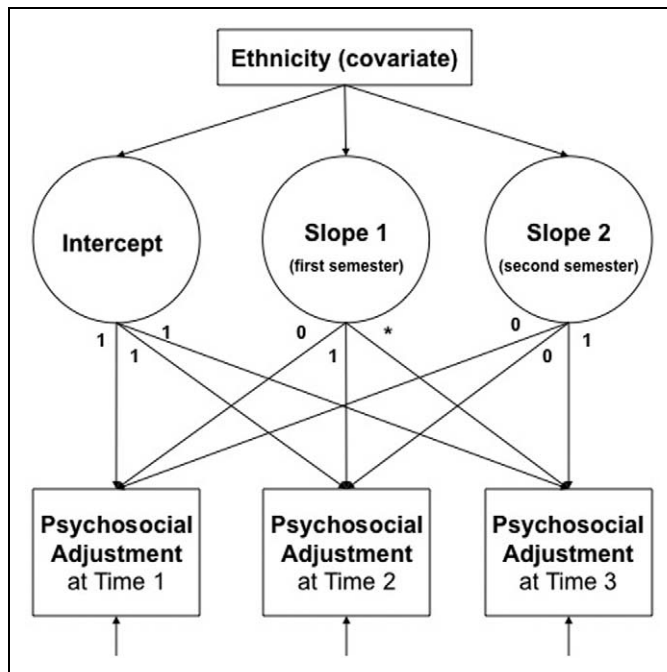
Figure 1. Basic LGM model used for each psychosocial adjustment composite with ethnicity as a covariate. Different models tested for invariance between Slope 1 and Slope 2 in the overall sample and within gender and for between-gender invariance of intercept and slopes. * = Factor loading freely estimated.

assessed at baseline (Time 1), the week prior to college entry, as well as in the middle (Time 2) and end of the first year of college (Time 3). Using Mplus Version 7.11 (Muthén & Muthén, 2013), LGM, a variant of structural equation modeling, examined individual changes across time. In this analysis approach, repeated measures data were used as indicators of latent variables to model baseline levels (measured as intercepts) and rates of change (measured as slope factors) to describe group mean trajectories and different between-individual trajectories (Duncan & Duncan, 2004). In each of the five latent growth models (one for each of the psychosocial adjustment domains), the three different time-points of a given composite score (i.e., Psychological Well-Being, Psychological Distress, Cognitive-Affective Strengths, Cognitive-Affective Vulnerabilities, or Social Well-Being) were used as indicators. In order to examine the differences in the rate of change during the first semester in comparison to the rate of change over the second semester, a piecewise model was proposed (Duncan & Duncan, 2004). The piecewise model estimated the rate of change from Time 1 to Time 2, referred to as Slope 1, and the rate of change from Time 2 to Time 3, referred to as Slope 2, separately. For each of the models, the loadings of the intercept factor were constrained to 1 on each time-point, while the factor loadings for Slope 1 were set at 0 for Time 1, 1 for Time 2, and freely estimated for Time 3; the factor loadings for Slope 2 were set at 0 for Time 1, 0 for Time 2, and 1 for Time 3 (Duncan & Duncan, 2004). Given restraints on degrees of freedom, residual variance terms were fixed to be

equal and covariances between intercepts and slopes were constrained at zero. The fit of each model was assessed using the CFI (Bentler, 1990), the TLI (Tucker & Lewis, 1973), the SRMR, and the RMSEA (Browne & Cudeck, 1993), using benchmarks of above .90 (CFI and TLI) and below .10 (RMSEA and SRMR) as indications of acceptable model fit, with values closer to 1.00 and .00, respectively, indicating better fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). Initial, separate growth models for each psychosocial adjustment domain were run first. As there is some evidence that ethnicity might play a role in predicting psychosocial adjustment (Toews & Yazedjian, 2007; cf. Burris, Brechting, Salsman, & Carlson, 2009), we then ran models including ethnic minority status as a covariate. After the baseline models were supported, LGM was used to test for invariance between Slope 1 and Slope 2 in the overall sample. To analyze gender differences, we ran baseline models separated by gender, followed by tests for between-gender invariance of intercept and slopes, and tests for within-gender invariance across Slope 1 and Slope 2. Figure 1 depicts the final model for each of the five psychosocial adjustment domains. The difference in model χ^2 was used to determine whether there were differences between (1) Slope 1 and Slope 2 in the overall sample and within gender, and between (2) intercepts and slopes, comparing between genders.

Power, Descriptive Statistics, and Correlations

Given the sample size, we have power to detect small to large effects (Cohen, 1992).[2] Means, standard deviations, and correlations among the five domains of adjustment, at each time-point and split by gender, are presented in Table 2. As expected, positive aspects of adjustment (Psychosocial Well-Being, Cognitive-Affective Strengths, and Social Well-Being) correlated positively with each other, as did negative aspects of adjustment (Psychological Distress, Cognitive-Affective Vulnerabilities), at each time-point. With only two exceptions (see Table 2), positive and negative adjustment correlated negatively at each time-point, and males and females demonstrated similar correlations across the psychosocial adjustment composites.

Growth Models: Baseline Latent Growth Models and the Influence of Conditional Predictors

Table 3 presents estimates of intercept and slopes and fit statistics for the baseline piecewise models, with and without ethnicity as a covariate.[3] All of the baseline models indicated acceptable fit to the data.[4] For each domain of adjustment, there was significant change over the course of the first semester of college (Slope 1), indicating that students are experiencing significant decreases in positive psychosocial factors, such as Psychological Well-Being, Cognitive-Affective Strengths, and Social Well-Being, as well as significant increases in negative psychosocial factors, such as Psychological Distress and Cognitive-Affective Vulnerabilities. There was a significant increase in Psychological Distress over the second semester (Slope 2), but there were no significant changes in the other four domains of adjustment.

Table 2. Correlations and Descriptive Statistics for Psychosocial Adjustment Variables, Across Time, for Males and Females.

Variable	M (SD) Females	M (SD) Males	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. T1 Psychological Well-Being	.10 (.71)	.15 (.79)	—	.75**	.69**	−.57**	−.43**	−.37**	.66**	.50**	.52**	−.50**	−.38**	−.37**	.58**	.54**	.48**
2. T2 Psychological Well-Being	−.14 (.83)	−.11 (.91)	.72**	—	.79**	−.50**	−.64**	−.47**	.48**	.64**	.54**	−.45**	−.50**	−.44**	.46**	.64**	.49**
3. T3 Psychological Well-Being	−.07 (.81)	−.02 (.84)	.66**	.75**	—	−.46**	−.53**	−.61**	.47**	.53**	.64**	−.43**	−.46**	−.54**	.41**	.54**	.61**
4. T1 Psychological Distress	−.12 (.72)	−.23 (.74)	−.59**	−.40**	−.36**	—	.60**	.55**	−.32**	−.28**	−.28*	.51**	.40**	.38**	−.38**	−.38**	−.37**
5. T2 Psychological Distress	.14 (.93)	.09 (.94)	−.37**	−.57**	−.48**	.42**	—	.64**	−.22**	−.33**	−.27**	.42**	.55**	.46**	−.35**	−.48**	−.37**
6. T3 Psychological Distress	.17 (.92)	.03 (.86)	−.43**	−.43**	−.64**	.44**	.53**	—	−.21**	−.25	−.32**	.40**	.43**	.59**	−.30**	−.36**	−.46**
7. T1 Cognitive-Affective Strengths	.12 (.71)	.05 (.71)	.64**	.49**	.48**	−.27**	−.19**	−.21**	—	.62**	.62**	−.29**	−.20**	−.24**	.48**	.40**	.39**
8. T2 Cognitive-Affective Strengths	−.08 (.75)	−.21 (.79)	.51**	.63**	.44**	−.23**	−.28**	−.08	.58**	—	.68**	−.29**	−.24**	−.26**	.39**	.51**	.39**
9. T3 Cognitive-Affective Strengths	−.02 (.73)	−.13 (.74)	.38**	.43**	.59**	−.12*	−.23**	−.27**	.49**	.51**	—	−.30**	−.28**	−.28	.37**	.44**	.51**
10. T1 Cognitive-Affective Vulnerabilities	−.13 (.69)	.06 (.73)	−.46**	−.38**	−.34**	.56**	.30**	.35**	−.18**	−.27**	−.15**	—	.64**	.65**	−.35**	−.34**	−.34**
11. T2 Cognitive-Affective Vulnerabilities	.03 (.74)	.22 (.71)	−.29**	−.43**	−.39**	.29**	.52**	.42**	−.18**	−.14**	−.21**	.47**	—	.68**	−.27**	−.39**	−.32**
12. T3 Cognitive-Affective Vulnerabilities	−.02 (.78)	.12 (.75)	−.36**	−.42**	−.43**	.36**	.37**	.51**	−.22**	−.23**	−.05	.56**	.58**	—	−.28**	−.33**	−.39**
13. T1 Social Well-Being	.09 (.68)	.03 (.73)	.67**	.52**	.52**	−.46**	−.31**	−.36**	.48**	.40**	.37**	−.36**	−.25**	−.32**	—	.62**	.55**
14. T2 Social Well-Being	−.05 (.73)	−.09 (.74)	.58**	.71**	.62**	−.36**	−.46**	−.38**	.44**	.56**	.40**	−.32**	−.35**	−.37**	.63**	—	.66**
15. T3 Social Well-Being	−.01 (.72)	−.10 (.79)	.42**	.42**	.61**	−.31**	−.28**	−.44**	.38**	.31**	.49**	−.25**	−.28**	−.31**	.51**	.58**	—

Note. SD = standard deviation. Means and SDs are z-scores that have been standardized across the three time-points. Correlations for females are above the diagonal; correlations for males are below the diagonal. Ns range from 1,002 to 1,439 for females, and from 439 to 655 for males, due to incomplete data for some respondents.
*p < .05. **p < .01.

Table 3. Baseline Model With Ethnicity as Covariate: Goodness of Fit and Estimates in Overall Sample.

Model	Goodness of Fit						Estimates		
	χ^2	df	RMSEA	SRMR	CFI	TLI	Intercept, b (SE)	Slope 1, b (SE)	Slope 2, b (SE)
Psychological Well-Being	20.31	1	0.096	0.024	0.99	0.96	0.08 (0.03)*	−0.28 (0.03)**	0.02 (0.03)
	7.19	*1*	*0.063*	*0.021*	*1.00*	*0.99*	*0.13 (0.02)**	*−0.21 (0.02)**	*−0.01 (0.02)*
Psychological Distress	2.13	1	0.023	0.008	1.00	1.00	−0.15 (0.03)**	0.36 (0.04)**	0.14 (0.04)**
	2.08	*1*	*0.023*	*0.010*	*1.00*	*1.00*	*−0.15 (0.02)**	*0.28 (0.02)**	*0.14 (0.03)**
Cognitive-Affective Strengths	2.88	1	0.030	0.010	1.00	0.99	0.15 (0.03)**	−0.24 (0.03)**	−0.04 (0.06)
	2.65	*1*	*0.028*	*0.012*	*1.00*	*0.99*	*0.10 (0.01)**	*−0.22 (0.01)**	*−0.02 (0.06)*
Cognitive-Affective Vulnerabilities	6.36	1	0.051	0.015	1.00	0.98	−0.03 (0.03)	0.18 (0.03)**	−0.04 (0.06)
	6.37	*1*	*0.051*	*0.018*	*1.00*	*0.99*	*−0.07 (0.02)**	*0.15 (0.02)**	*0.02 (0.04)*
Social Well-Being	11.74	1	0.072	0.021	0.99	0.96	0.07 (0.03)*	−0.19 (0.03)**	0.12 (0.13)
	12.06	*1*	*0.073*	*0.026*	*1.00*	*0.98*	*0.07 (0.02)**	*−0.13 (0.02)**	*0.08 (0.09)*

Note. The second line (in italics) for each model presents statistics from the baseline model without ethnicity as a covariate. Although the latter models fit slightly better, both sets of models provide acceptable fit and a similar pattern of statistical significance, with the exception of the intercept in the Cognitive-Affective Vulnerabilities model. RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; CFI = comparative fit index; TLI = Tucker–Lewis index; b = unstandardized β; SE = standard error.
*p < .05. **p < .01.

Table 4. Testing Invariance of Slope 1 and Slope 2 for Each Psychosocial Adjustment Composite in Overall Sample.

Model	Baseline Model		Invariant Model		Contrasting Models		
	χ^2	df	χ^2	df	$\Delta\chi^2$	Δdf	p
Psychological Well-being	20.31	1	70.64	2	50.33	1	<.001
Psychological Distress	2.13	1	18.06	2	15.93	1	<.001
Cognitive−Affective Strengths	2.88	1	16.19	2	13.31	1	<.001
Cognitive−Affective Vulnerabilities	6.36	1	23.18	2	16.83	1	<.001
Social Well-Being	11.74	1	28.12	2	16.38	1	<.001

Note. df = degrees of freedom.

Growth Models: Testing Invariance Between Slopes

To test whether there were different rates of change between the first semester of college (i.e., Slope 1) and the second semester of college (i.e., Slope 2) within the general sample, invariance constraints were employed within each model. For each composite, a baseline model was tested with each slope freely estimated. The next models constrained the mean values of each pair of slopes to be equal. The difference in model χ^2 was examined to determine whether there were significant differences between the slopes. As seen in Table 4, there were significant differences between Slope 1 and Slope 2 for each domain of adjustment.[5] Upon review of the mean slope values, these results suggest that there are significantly greater rates of change over the course of the first semester (Slope 1) in comparison to the second semester (Slope 2) across each domain of adjustment. The plotted trajectories are included in Figures 2 through 4.

Growth Models: Testing Differences Between Genders

To evaluate the fit of the data for each gender, baseline models were tested with each group estimated separately. The five models yielded acceptable goodness of fit statistics: Psychological Well-Being, $\chi^2(3) = 19.39$, RMSEA = .072, SRMR = .024, CFI = 1.00, TLI = 1.00; Psychological Distress, $\chi^2(2) = 6.20$,

RMSEA = .045, SRMR = .018, CFI = 1.00, TLI = .99; Cognitive-Affective Strengths, $\chi^2(2) = 7.30$, RMSEA = .051, SRMR = .018, CFI = 1.00, TLI = .98; Cognitive–Affective Vulnerabilities, $\chi^2(2) = 1.79$, RMSEA = .000, SRMR = .009, CFI = 1.00, TLI = 1.00; and Social Well-Being, $\chi^2(2) = 11.26$, RMSEA = .067, SRMR = .020, CFI = .99, TLI = .97. Initial invariance tests were used to examine whether males and females were significantly different in psychosocial adjustment domains at the pre-college baseline. Invariance tests of mean intercept values between males and females indicated significant differences in Cognitive-Affective Strengths, $\Delta\chi^2(1) = 5.48$, $p = .019$, Cognitive-Affective Vulnerabilities, $\Delta\chi^2(1) = 22.23$, $p < .001$, and Social Well-Being, $\Delta\chi^2(1) = 4.16$, $p = .041$. Specifically, the data indicated greater Cognitive-Affective Strengths for females, $M = 0.18$, standard error $[SE] = 0.03$, $p < .001$, than males, $M = 0.03$, $SE = 0.06$, $p = .591$, at the beginning of college. Additionally, males indicated greater Cognitive-Affective Vulnerabilities, $M = 0.19$, $SE = 0.06$, $p < .001$, in comparison to females, $M = -0.12$, $SE = 0.03$, $p < .001$. Finally, females reported greater Social Well-Being, $M = 0.11$, $SE = 0.03$, $p = .001$, in comparison to males, $M = -0.03$, $SE = 0.06$, $p = .639$.

Tests did not indicate difference in Slope 1 (from Time 1 to Time 2) between males and females: Psychological Well-Being,
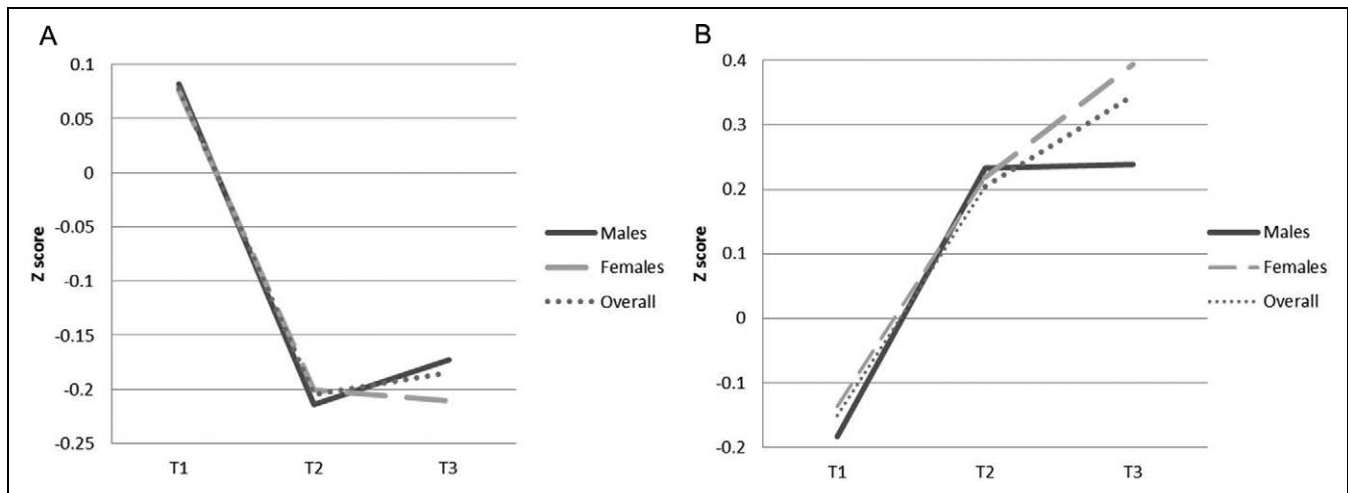
Figure 2. (A) Psychological Well-Being across the first year of college by gender. Significant decrease from Time 1 to Time 2, but no significant change between Time 2 and Time 3, for all groups. (B) Psychological Distress across the first year of college by gender. Significant increase from Time 1 to Time 2 for all groups. Significant increase from Time 2 to Time 3 for overall sample and females; no significant change between Time 2 and Time 3 for males.

$\Delta\chi^2(1) = .16$, $p = .689$; Psychological Distress, $\Delta\chi^2(1) = .98$, $p = .322$; Cognitive-Affective Strengths, $\Delta\chi^2(1) = .53$, $p = .467$; Cognitive-Affective Vulnerabilities, $\Delta\chi^2(1) = .44$, $p = .507$; and Social Well-Being, $\Delta\chi^2(1) = .02$, $p = .888$. When comparing Slope 2 (between Time 2 and Time 3) values between genders, there was a significant difference for Psychological Distress, $\Delta\chi^2(1) = 4.65$, $p = .031$, and Cognitive-Affective Strengths, $\Delta\chi^2(1) = 4.68$, $p = .030$. Related to Psychological Distress, the mean of Slope 2 for females, $M = 0.18$, $SE = 0.05$, $p < .001$, was significantly greater than that for males, $M = 0.01$, $SE = 0.07$, $p = .947$, suggesting that females continue to experience increases in Psychological Distress over the course of the second semester of college, while males experience a plateau in Psychological Distress (see Figure 2B). In regard to Cognitive-Affective Strengths, although neither slope reached significance, the mean of Slope 2 for males, $M = 0.13$, $SE = .086$, $p = .145$, was significantly greater than that for females, $M = -0.03$, $SE = .06$, $p = .671$, indicating that males experience a nonsignificant rebound toward more positive cognitive and affective strategies while females plateau (see Figure 3B). No other differences were found in slope values between males and females: Psychological Well-Being, $\Delta\chi^2(1) = .80$, $p = .371$; Cognitive-Affective Vulnerabilities, $\Delta\chi^2(1) = .05$, $p = .823$; and Social Well-Being, $\Delta\chi^2(1) = .16$, $p = .689$.

Discussion

Grounded in a developmental psychopathology perspective and an integrative framework of psychosocial adjustment, the present research indicates that the transition to college marks a major shift in well-being and thus represents a critical juncture in psychosocial adjustment for a substantial majority of emerging adults. Building on existing theory and prior research methodology, the current research demonstrates that the first year—and particularly the first few months—of this key developmental juncture is a pivotal time of change and struggle for many emerging adults. Notably, this transition witnesses substantial losses across diverse aspects of psychosocial well-being.

Developmental Patterns Over Time

Existing research on emerging adults' adjustment to college over time tends to rely either on cross-sectional data or on limited longitudinal designs that lack a pre-transition baseline or lack multiple assessments in the first year. There have been a few studies comparing mean levels of adjustment at different points within the first year (e.g., Alfeld-Liro & Sigelman, 1998) or spaced out more broadly over the college experience, such as once per year (e.g., Andrews & Wilding, 2004). The current research improved on these designs by using a pre-college baseline, multiple assessment points in the first year, and LGM to chart and compare developmental trajectories over time. With this advanced methodology, the present research demonstrated that across the transitional first semester of college, emerging adults experience significant declines in psychological well-being, cognitive-affective strengths, and social well-being as well as significant increases in psychological distress and cognitive-affective vulnerabilities. These detriments generally plateau, rather than worsen or rebound, during the second semester.

The current research improves our understanding of the broad longitudinal picture of psychosocial adjustment across the transition into and through college. As demonstrated in the current research, the transition to college, especially the first few months, seems to be particularly challenging for emerging adult adjustment and well-being. Although previous research has suggested that the transition to college is associated with elevated problems based on narrower assessments of mental health issues (Alfeld-Liro & Sigelman, 1998; Bewick et al., 2010; Cooke et al., 2006), the current study demonstrates a very
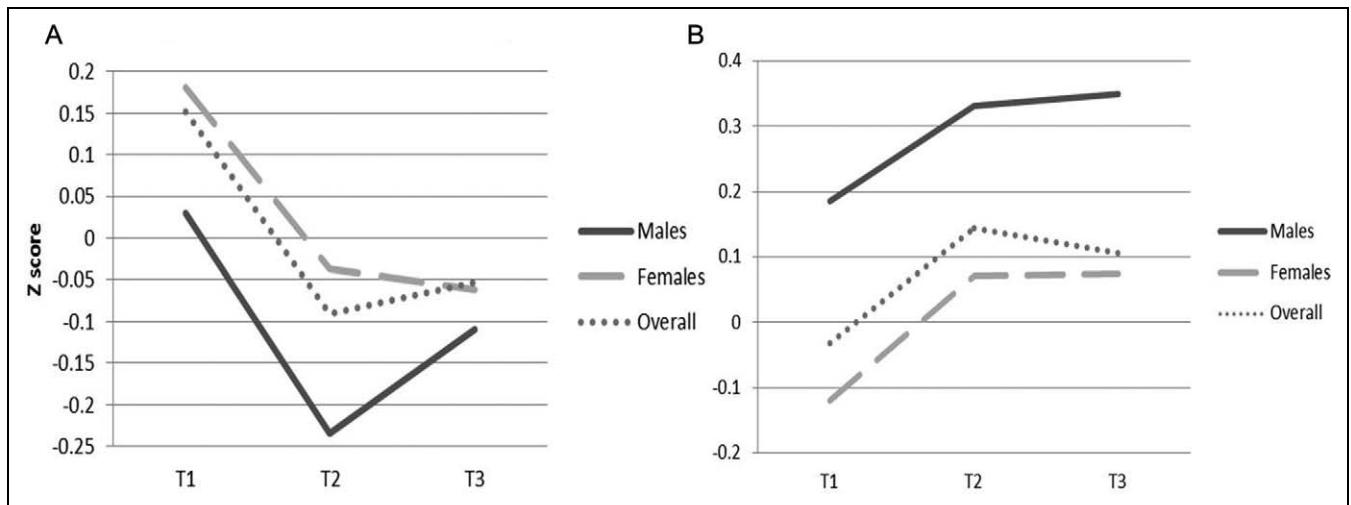
Figure 3. (A) Cognitive-Affective Strengths across the first year of college by gender. Significantly lower intercept for males. Significant decrease from Time 1 to Time 2 for all groups. Significant gender difference in slope between Time 2 and Time 3 although both males' and females' slopes are nonsignificant. (B) Cognitive-Affective Vulnerabilities across the first year of college by gender. Significantly higher intercept for males. Significant increase from Time 1 to Time 2, but no significant change between Time 2 and Time 3, for all groups.

broad spectrum of difficulties in psychosocial adjustment and pinpoints the first few months of the transition as the most difficult. These findings suggest that the first semester of college is a pivotal period of development characterized by steep declines in adjustment across various psychosocial domains and that despite a general trend of plateauing in the second semester, emerging adults continue to experience depleted levels of functioning, resources, and well-being compared to their prior levels of adjustment. Although past research has utilized diverse time courses and often lacks a pre-college baseline, piecing different findings together suggests that after initial difficulties in the first semester or first year, and as the transition becomes less salient, college-attending emerging adults might eventually rebound toward better adjustment (Cooke et al., 2006; Gall et al., 2000; Jones & Frydenberg, 1998; cf. Alfeld-Liro & Sigelman, 1998; Bewick et al., 2010). On a more macro level, researchers have found steady declines in distress across the 4-year college experience (Sher et al., 1996) and a general upward trend of increased well-being across the broader developmental period of emerging adulthood (Schulenberg, O'Malley, Bachman, & Johnston, 2005). Using advanced statistical methodology, this study adds to the existing body of research; combined with prior findings, this research indicates that the transition to college is a developmental challenge that is accompanied by an acute increase in distress and vulnerability as well as a loss of well-being, strengths, and support, but that these challenges are likely to be tempered in subsequent years. To verify this broader longitudinal pattern, further research will need to utilize both a pre-transition baseline and an in-depth assessment of multiple points during the transitional first year, as was done here, as well as follow-up assessments in subsequent years of college.

Anecdotal lore touts the transition to college as a welcomed developmental passage toward increased freedom, social blossoming, and exciting new opportunities (Brooks, 2010; Should

I Go to College.com, 2011). So why do college-attending emerging adults, as a whole, evidence such dramatic declines in adjustment during this developmental transition? Although the college transition does indeed mark a time of increased exploration and new experiences, these go hand in hand with major role changes, loss of social support systems, increased responsibilities, and the need to adapt to a new environment (Schulenberg, Sameroff et al., 2004; Towbes & Cohen, 1996). Furthermore, evidence suggests that college-bound emerging adults overestimate how well they will adjust to college (Gerdes & Mallinckrodt, 1994), which might leave them with unrealistic expectations and inadequate preparation for the challenges of this major life transition. Evidence from the current research and elsewhere (Bayram & Bilgel, 2008; Gall et al., 2000) suggests that this difficulty is most acutely experienced early in the transition; future research should continue to explore the patterns and processes by which these difficulties play out over time, as emerging adults' actual adjustment catches up with their expectations.

Gender Similarities and Differences

The current study attempted to clarify the limited and mixed findings in past research on gender similarities and differences in emerging adults' adaptation to college. Some research suggests that females experience more difficulty across this developmental transition (Alfeld-Liro & Sigelman, 1998; Cooke et al., 2006; Stewart et al., 1986; Surtees et al., 2002), while other research demonstrates few gender differences (Tao et al., 2000), or variations across aspects of adjustment with separate disadvantages for females and males (Bewick et al., 2010; Fisher & Hood, 1987; Gall et al., 2000; Nelson & Padilla-Walker, 2013).

The present study's findings also are somewhat mixed. In general, males and females evidenced similar patterns of

adjustment across the transitional first year of college but a few key gender differences emerged. Specifically, males and females experienced similar sharp declines over the first semester, in all domains of psychosocial adjustment. During the second semester, the slope for psychological distress significantly differed: While males' distress plateaued after the initial increase, females' distress continued to worsen later in the year, suggesting that as time passes, females may experience increasing levels of distress compared to males. This is consistent with the pattern of greater internalizing distress in females, which begins at puberty (Conley & Rudolph, 2009) as well as the general increases in body and eating pathology that emerge during the college transition (Heatherton, Nichols, Mahamedi, & Keel, 1995), which also could impact females' distress.

In contrast, males reported greater levels of cognitive-affective vulnerabilities and lower levels of cognitive-affective strengths and social well-being before the transition. Although the second-semester slope for cognitive-affective strengths was significantly stronger for males than for females, males' second-semester slope was still nonsignificant, suggesting a pattern of an initial disadvantage that does not subside by the end of the year (see Figure 3A). Further, as males and females evidenced similar increases in cognitive-affective vulnerabilities across the first semester and plateaus in the second semester, it appears that males maintain their disadvantage in this domain over the year (see Figure 3B). Figure 4 displays a similar pattern, such that males' initial disadvantage in social well-being is maintained even while levels fluctuate over the year. Previous research has indicated that males are less likely to use certain adaptive cognitive-affective strategies and more likely to use certain maladaptive strategies (see Blalock & Joiner, 2000; Gross & John, 2003; Herman-Stahl, Stemmler, & Peterson, 1995; Jones & Frydenberg, 1998; Sasaki & Yamasaki, 2005). During a disruptive and challenging life transition, emerging adult males might be even less likely to make use of such adaptive strategies and rely even more on maladaptive ones. Other research has indicated limited differences in social well-being between males and females (Tao et al., 2000), thus future studies should continue to examine the impact of gender on social functioning across this developmental turning point.

It is important to note that these males' greater utilization of *cognitive-affective* vulnerabilities, limited reliance on cognitive-affective strengths, and restricted *social* well-being does not appear to coincide with a similar vulnerability in *psychological* distress. Rather it is females, despite evidencing some greater cognitive and affective resources, who continue to experience increased psychological distress across the first year of college, while males' distress plateaus. This complex pattern might be explained by the categorization of strengths and vulnerabilities. For example, although cognitive reappraisal and problem-focused coping are typically thought of as adaptive (e.g., Folkman & Moskowitz, 2000; Gross & John, 2003) and emotional suppression or avoidant coping is viewed as maladaptive (see Blalock & Joiner, 2000; Gross
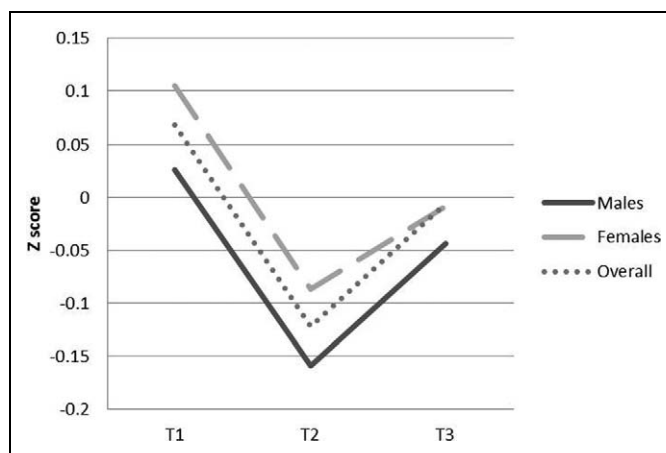

Figure 4. Social Well-Being across the first year of college by gender. Significantly lower intercept for males. Significant increase from Time 1 to Time 2, but no significant change between Time 2 and Time 3, for all groups.

& John, 2003), there is some evidence that an increased focus on emotion may explain the elevated rates of psychological distress in females (Thayer, Rossy, Ruiz-Padial, Johnsen, 2003). Additionally, although avoidant coping has been shown to predict symptomatology in females, the same has not been true for males (Blalock & Joiner, 2000). Thus, focusing heavily on emotions might be harmful rather than adaptive, and avoidance or suppression of negative emotion might be a more adaptive approach to handling this difficult developmental transition. Related to social well-being, research has demonstrated that social support is more closely linked to adjustment for females (Kendler, Myers, & Prescott, 2005) suggesting that the college transition, marked by intense changes in social context and support, might differentially affect males and females. Thus, although males may evidence less social well-being, this might not be as significant a factor in predicting their overall well-being and distress. Bridging findings from the current and past research, it seems that the traditional conceptualizations of social and cognitive-affective strengths versus vulnerabilities might depend on context—such as high-stress, transitional situations—as well as on gender. These findings support theoretical models of how demographic factors, such as gender, interact with the environment, such as the college transition, to predict patterns of adjustment (Billings & Moos, 1982; Hankin & Abramson, 2001).

Despite some important gender differences in the current study, a central finding remains that male and female emerging adults demonstrated largely similar trajectories of change in psychosocial adjustment across this significant developmental milestone. The current findings for gender similarities and differences in developmental patterns across the transition to college suggest important areas for continued research not only on developmental transitions but also on conceptualizations of strengths versus vulnerabilities within different populations and contexts.

Contributions, Limitations, and Future Directions

The present study wove together important methodological strengths that had not yet been synthesized in prior research—including a pre-transition baseline and two additional time-points spanning the first year of college—and also used an advanced statistical modeling strategy to understand trajectories of change across time, differences in these trajectories between the first and the second semester, as well as differences between genders. In addition, the current research expanded on prior work by including a broad assessment covering various domains of psychosocial adjustment. Yet, there remain areas for improvement in future research. Although much research on emerging adults' adjustment in college includes a narrow sample (e.g., from individual classes or participant pools), the present study invited all first-year students to participate. At each time-point, between 63% and 75% of invited participants responded, which is higher than most research in this area, and strengthened further by using ML estimation in the LGM models. Yet, any missing data raise issues of representative sampling and generalizability. Although sampling and attrition issues are particularly challenging in large-scale, longitudinal research, increased efforts toward recruiting and maintaining participants over time might yield higher response rates and more generalizable findings. Additionally, the current study's sample of students may experience different developmental trajectories of psychosocial adjustment, given the type and characteristics of the university from which they were sampled. Future research should consider whether and how trajectories of psychosocial adjustment differ in other groups of students. Given that students were assessed in the week prior to starting college, as a means to measure baseline functioning, it is possible that students might have been experiencing either anticipatory stress or excitement that might have affected how valid this measure of baseline functioning was for this population. Further, as is the norm in research on emerging adults' adjustment to college, the present study's use of self-report assessments could be enhanced in future research by incorporating observer ratings (e.g., from instructors, peers, or resident advisors) and clinical interviews. Finally, although the present research was focused on the early emerging adulthood transition into college, future research should examine whether the patterns demonstrated here extend across other populations and settings including non-college-attending emerging adults who transition to work settings.

The current results demonstrate a complex pattern of findings that prompt directions for future research. An important next step is to identify divergent trajectories of emerging adult adjustment across this developmental transition, highlighting those who have the most difficulty versus those who fare relatively well, as well as those who experience declines versus those who might improve over time. Combining descriptive and predictive methodologies, these investigations could further examine what predicts positive, negative, and stable trajectories of adjustment over time. Future research also can consider the developmental patterns of non-college-attending emerging adults to identify if the declines in adjustment demonstrated here are associated specifically with the transition to college or are indicative of a more normative shift during the transition to emerging adulthood.

Applications and Implications

Knowing how emerging adults adjust across the transition to college—and what they experience psychologically, cognitive-affectively, and socially during the critical first year—can help optimize effective services to address their developmental struggles. Many institutions already have programs in place that could be used more effectively to promote positive adjustment—and prevent difficulties—across this challenging transition point. Given the disruptive nature of this formative developmental transition, universities have a responsibility to provide services that promote successful psychosocial adaptation and to monitor and evaluate these services for effectiveness and impact. For example, in new student orientations, first-year seminars, and mental health counseling and outreach services, it is important to go beyond simply providing information on the transition to college and its typical impact on adjustment and to take a proactive role in fostering positive adjustment across this developmental transition. New student orientations can normalize the stress and distress that come with this exciting yet disruptive transition, reduce the stigma of reaching out for help, and ensure that students know concrete steps for utilizing support services. Going further, as campus mental health services tend to be underutilized in light of emerging adults' demonstrated needs (Eisenberg, Hunt, Speer, & Zivin, 2011), higher education institutions should channel resources into outreach services, such as giving workshops that teach stress management and effective coping. First-year seminars can equip college-attending emerging adults not only with the academic but also with the psychological and social skills they need to succeed. In particular, universities should select and implement skill-building prevention and promotion programs for first-year students making this transition, as such programs have demonstrated benefits for psychosocial, as well as academic, outcomes (Conley, Durlak, & Dickson, 2013). Finally, just as universities have early warning systems in place for identifying and reaching out to academically struggling students, universities also should train key staff, such as residence advisors, academic advisors, and faculty, to understand and monitor psychosocial adjustment difficulties, particularly in the first few months, and recruit their efforts to connect struggling students with effective support. With these improvements, we can do more to assist emerging adults during this critical developmental transition and promote a positive trajectory of adjustment through college and the broader developmental context of emerging adulthood.

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Notes

1. Following baseline tests that did not evidence violations of the assumption of data missing at random, we used maximum likelihood (ML) estimation to estimate each latent growth curve model. ML estimation takes the mean and variance as parameters and finds particular parametric values that make the observed results the most probable, given the model.
2. In structural equation modeling (of which LGM is a variation), Jackson (2003) provides the N:q rule for ML estimation, in which the ratio of cases (N) to the number of parameters in the model (q) should be 20:1, with 10:1 as the minimally accepted ratio. In the present set of analyses, the ratio of cases to parameters is 95:1 (2,095:22). Thus, this sample does not present risks of limited power (also see Cohen, 1992). In addition, power analysis reveals that the sample size of 2,095 provides 90% power to detect within-subject differences in scores as small as $|d| = 0.1$ at two-tailed $p < .05$.
3. By controlling for this demographic feature, we were able to examine the effect of gender above and beyond the impact of ethnicity.
4. Two models, Psychological Well-Being and Cognitive-Affective Strengths, indicated poor fit via the χ^2 test, but this statistic is very sensitive to large sample sizes (Hu & Bentler, 1999). Notably, all other indices of model fit (CFI, TLI, RMSEA, SRMR) indicated good fit (Hu & Bentler, 1999).
5. Similar tests within each gender revealed the same pattern with one exception. Overall, with the exception of Cognitive-Affective Vulnerabilities for males, where slopes did not significantly differ, $\chi^2(1) = 2.16$, $p = .142$, there were significant differences in slope values across each psychosocial domain for both males and females (ps < .012).

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