

Transitioning Through Emerging Adulthood and Physical Health Implications

Christopher P. Barlett¹, Natalie D. Barlett¹,
and Holly McCartney Chalk² 

Emerging Adulthood
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Abstract

Emerging adulthood represents a developmental period marked by many life transitions as 18- to 29-year-olds leave adolescence to adulthood. Some individuals can successfully navigate through this transitional period, whereas others may struggle. Past research has shown individual differences in the perceptions of the (un)success of emerging adulthood transition can predict mental health outcomes; however, there is a paucity of studies testing physical health outcomes. Emerging adult participants ($N > 2,000$) completed measures of emerging adulthood, stress, sex, and somatic physical health symptoms, and results showed that the perceptions of emerging adulthood dimensions representative of an unsuccessful transition (negativity/instability) positively predicted stress and somatic physical health concerns, but positive emerging adulthood transition dimensions (experimentation/possibilities) negatively predicted these outcomes. Further, stress mediated the simple relationships between the aforementioned emerging adulthood dimensions and physical health symptoms. Finally, despite sex differences in all measured variables, participant sex did not moderate these overall relationships.

Keywords

stress, health, identity, quantitative methods, transitions to adulthood

Emerging adulthood is a developmental period that lies between late adolescence and early adulthood (Arnett, 2000) and is often highlighted by substantial life changes (Arnett, 2007), identity development (Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013), and increased independence (Nelson & Barry, 2005). Applied to individuals between 18 and 29 years of age from industrialized countries (Arnett, Zukauskienė, & Sugimura, 2014), emerging adulthood represents a time in which most individuals leave their parent's/guardian's care, attend college, get married, have kids, gain financial independence, begin a long-term career, and/or make their own important life decisions (P. Cohen, Kasen, Chen, Hartmark, & Gordon, 2003).

Reifman, Arnett, and Colwell (2007) developed a self-report questionnaire to assess emerging adult's identification with dimensions of transition through this time period—the Inventory of the Dimensions of Emerging Adulthood (IDEA). Derived from Arnett's (2004) theory of emerging adulthood, the IDEA measures five distinct features that Reifman et al. (2007) purports corresponds with the perception of the transition through this developmental period, which include identity exploration (psychosocial moratorium where one's identity can change or remain static), negativity/instability (anxiety and uncertainty regarding the lack of confidence to

navigate through the number of options and new independence), self-focused (the sense of taking on greater responsibilities afforded by newly found independence), feeling in-between (the perception that one is no longer an adolescent, but not yet an adult), and experimentation/possibilities (optimism about a variety of commitments and potential life changes). Negativity/instability is an unfavorable dimension (Reifman, Arnett, & Colwell, 2007) that estimates an unsuccessful transition through emerging adulthood.

Using the IDEA, research has suggested that individual differences in how an individual successfully transitions through emerging adulthood and into young adulthood predict myriad psychological and behavioral outcomes. For instance, negativity/instability (suggesting an unsuccessful emerging adulthood transition; cf. Lisha et al., 2014) is related to higher psychopathy, narcissism, and reactive aggressive behavior (Barlett,

¹Department of Psychology, Gettysburg College, Gettysburg, PA, USA

²Department of Psychology, McDaniel College, Westminster, MD, USA

Corresponding Author:

Christopher P. Barlett, PhD, Department of Psychology, 300 N., Washington St., Gettysburg, PA 17325, USA.

Email: cbarlett@gettysburg.edu

2016; Barlett & Barlett, 2015) and internalizing mental health symptoms (e.g., depression, anxiety; Goodman, Henderson, Peterson-Badali, & Goldstein, 2015). Conversely, higher scores on emerging adulthood dimensions that indicate a successful transition through emerging adulthood correlate negatively with negative outcomes and positively with positive outcomes. For instance, Barlett and Barlett (2016) found that identity exploration negatively predicted psychopathy, whereas Negru (2012) showed positive correlations between self-focus and experimentation/possibilities and life satisfaction in a sample of college-aged emerging adults. Overall, transitioning through emerging adulthood can be difficult for some individuals and easy for others, and the current study examined the psychological and health-related consequences of emerging adulthood transition (un)success.

Despite the increase in the empirical work testing the positive and negative consequences of transitioning through emerging adulthood, less is known about the physical health consequences. Although a small body of research testing the relationship between emerging adulthood and mental health (e.g., Galambos, Barker, & Krahn, 2006) does exist, we are unaware of any empirical research examining the relationship between emerging adulthood dimensions and physical health indicators. We were interested in furthering our understanding of how the perception of one's transition through emerging adulthood leads to self-reported physical health problems, elucidating the psychological variables that likely mediate the relationship between emerging adulthood transitions and physical health outcomes and whether individual differences (i.e., sex of participant) moderate these relations. The current study tested these important gaps in the literature by having emerging adults complete self-report measures that assess perceptions of one's transition through emerging adulthood (i.e., experimentation/possibilities, negativity/instability, identity exploration, and feeling in-between), somatic physical health symptoms (our primary outcome), perceived stress (our proposed mediator), and demographics to assess participant sex (our proposed moderator). Overall, we hope that the findings from our study will further illuminate the importance of understanding the developmental transitions through emerging adulthood by clarifying the role of perceived stress on physical health outcomes in this transition.

Emerging Adulthood and Health

Several studies have examined the mental health consequences of an unsuccessful transition through the emerging adulthood developmental period in populations ranging from 18 to 29 years of age. For instance, research has found that increased negativity/instability negatively correlates with life satisfaction (Negru, 2012; Reifman et al., 2007). Moreover, Howard, Galambos, and Krahn (2010) longitudinally assessed emerging adults at ages 18, 19, 20, 22, and 25 years and found (a) the negative relationship between life satisfaction and depressive symptoms became stronger as the sample aged and (b) increases in depression over time for women negatively

predicted life satisfaction while controlling for having children, obtaining a degree, the number of times employed, and their relationship status (i.e., married or divorced). Finally, Nelson and Barry (2005) showed that depression was significantly higher for participants who identified as emerging adults compared to those who identified as having passed through emerging adulthood. Overall, these studies suggest that, for some, the unsuccessful transition through emerging adulthood is related to negative mental health consequences; however, we are unaware of any published research that examined the physical health consequences of transitioning through emerging adulthood (see Schulenberg & Zarrett, 2006). We hypothesize (Hypothesis 1) that the perception of the unsuccessful transition through emerging adulthood will be related to higher somatic physical health symptoms—analogueous to the previously cited work with mental health.

In addition to examining the simple relationships between emerging adulthood dimensions and somatic physical health symptoms, we examined the mediating role of perceived stress. In their theoretical model linking childhood/early adolescent trauma to depressive symptoms in emerging adulthood via stress in late adolescence, Foster, Hagen, and Brooks-Gunn (2008) argued that life transitions in late adolescence (i.e., high school graduation, moving away from parents, etc.) may cause an increase in stress and changes to self-identity that are related to depression in emerging adulthood. In other words, variations in markers of emerging adulthood during late adolescence that causes high stress predict later depressive symptoms. Applying this model to the current study, we posit that the perception of the unsuccessful navigation through emerging adulthood is related to stress that causes changes in subsequent physical health symptoms. Although Foster et al. (2008) studied depression, results from other studies have shown strong links between mental health (depression) and physical health (e.g., Aneshensel, Frerichs, & Huba, 1984). Therefore, if stress and poor physical health and positively correlated (Repetti, Taylor, & Seeman, 2002) and specific emerging adulthood markers predict physical health, such as unemployment (Linn, Sandifer, & Stein, 1985) and being married (Verbrugge, 1983), then we argue that the Foster et al. (2008) model is applicable to the current research and we hypothesize (Hypothesis 2) that stress will mediate the relationship between the perception of emerging adulthood transitional success and somatic physical health symptoms.

Examining Potential Moderators

Our theoretical model (adapted from Foster, Hagen, & Brooks-Gunn, 2008) posits that the perception of the unsuccessful navigation through emerging adulthood will be positively related to somatic physical health symptoms, which will be mediated by perceived stress. Although we are unaware of any research specifically testing this model, past research testing parts of this model have uncovered sex differences, suggesting that the model we are testing may not be ubiquitous. For instance, Barlett and Barlett (2016) showed that emerging adult males

scored significantly lower than females on several emerging adulthood transition variables (i.e., experimentation/possibilities, negativity/instability, self-focused, and feeling in-between). Moreover, research has suggested that emerging adult females (aged 18–22) have more headaches, constipation, fainting or dizziness, and bladder or kidney problems than their male peers (Macintyre, Hunt, & Sweeting, 1996). Finally, Denton, Prus, and Walters (2004) found evidence that higher levels of stress in females, compared to males, account for the sex differences in health.

Mean-level sex differences on key variables offer limited empirical support for the plausibility of the moderating role of sex in the relation between emerging adulthood transition perceptions and physical health symptoms. However, additional research sheds light onto such moderated importance. Halfon and Hochstein (2002) proposed a model that delineates the optimal health trajectory from birth to death emphasizing the importance of the how various risk and protective factors can shift health functioning closer to or away from the optimal mark. In other words, various risk and protective factors act as moderators in the relation between age (i.e., development) and physical health outcomes, and we hypothesize that participant sex may act as a risk or protective factor in the relation between emerging adulthood transition perceptions and physical health. Indeed, research has shown that the percentage of individuals transitioning through emerging adulthood who are depressed are higher for females relative to males as the participants' age (Hankin et al., 1998). Less is known about the physical health consequences for emerging adults; however, preliminary evidence with early adolescents suggests that the positive slope between age and subjective health complaints (i.e., headache, back pain, and general complaint) is stronger for females compared to males (Torsheim et al., 2006). Unfortunately, such research does not sample emerging adults. Therefore, we hypothesize (Hypothesis 3) that sex will moderate the mediating role of perceived stress in the relations between emerging adulthood dimensions and physical health symptoms.

Objective of the Current Study

Overall, we sought to determine whether (a) the perception of an (un)successful transition through emerging adulthood was related to physical health, (b) whether perceived stress mediated such relations, and (c) whether participant sex moderated these effects. Consistent with past work and theory, we hypothesized that (a) the perception of emerging adulthood transitions would correlate with somatic health symptoms, (b) perceived stress will mediate such relations, and (c) sex will moderate these mediated effects.

Method

Participants and Procedure

Data were collected as part of a much larger study. A full description of the sample, measures, and data gathering procedures is included in the Open Science Framework project page

(<https://osf.io/te54b/>). Two thousand and sixteen¹ (74% female) emerging adults participated in the current study for a chance to enter a raffle to win one of several small gift cards. The average age of the sample was 20.26 ($SD = 2.28$) years. The majority of the sample were White (60.4%) and in their second year of undergraduate education (84.8%).

Measures

Somatic physical health symptoms. To assess our primary outcome variable, we modified the Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2002). This scale was modified by removing 2 items that were only applicable to female participants (i.e., “menstrual cramps or other problems with your periods”) or for ethical reasons (“pain or problems during sexual intercourse”). The remaining 13 items ($\alpha = .84$) asked participants to indicate how often they have been bothered by several physical health symptoms during the past 4 weeks on a 3-point rating scale from 1 (*not bothered at all*) to 3 (*bothered a lot*). A sample item includes “stomach pain.” Scores on these items were averaged, such that higher scores indicate more somatic physical health symptoms.

Stress. Perceived stress was assessed using a modified version of the Global Measure of Perceived Stress (S. Cohen, Kamarck, & Mermelstein, 1983). Due to space constraints, this measure was shortened from 14 original items to 10 ($\alpha = .85$). Participants were instructed to indicate how often they felt a certain way in the past month on a 5-point rating scale from 1 (*never*) to 5 (*very often*). A sample item includes, “In the last month, how often have you been able to control irritations in your life?” Certain items were reverse coded prior to averaged, such that higher scores indicate more perceived stress.

Emerging adulthood. We assessed the perception of the transition through emerging adulthood using the short form of the IDEA (IDEA-8; Baggio, Iglesias, Studer, & Gmel, 2015). This measure asks participants to think about their life during the past few years to answer the questions on a 4-point rating scale from 1 (*strongly disagree*) to 4 (*strongly agree*). This scale includes four subscales to assess various dimensions of the transition through emerging adulthood, and each subscale consists of 2 items. The first is identity exploration ($r = .39, p < .05$) and a sample item includes, “Is this period of your life a time of defining yourself.” The second is experimentation/possibilities ($r = .40, p < .05$) and a sample item includes, “Is this period of your life a time of many possibilities.” The third is negativity/instability ($r = .60, p < .05$) and a sample item includes, “Is this period of your life a time of high pressure.” The final subscale assesses feeling in-between ($r = .32, p < .05$) and a sample item includes, “Is this period of your life a time of gradually becoming an adult.” The scores on the subscales were averaged, such that higher scores represent a higher degree of transition through emerging adulthood specific to each dimension.

Inspection of Table 1 shows varying Cronbach α coefficients for the IDEA scales. In order to gauge the factor structure

Table 1. Zero-Order Correlations and Descriptive Statistics for Relevant Variables.

Variable	1	2	3	4	5	6
1. Somatic physical health Symptoms	(.84)					
2. Perceived stress	.46**	(.85)				
3. Experimentation/possibilities	-.05*	-.06**	(.57)			
4. Negativity/instability	.23**	.36**	.14**	(.75)		
5. Identity exploration	.01	.03	.44**	.22**	(.56)	
6. Feeling in-between	-.02	.04	.36**	.27**	.39**	(.49)
Mean	1.62	3.09	3.64	3.56	3.59	3.58
Standard deviation	.39	.65	.48	.58	.51	.51
Skew	0.72	-0.02	-1.40	-1.43	-1.26	-1.46
SE (skew)	.06	.06	.06	.06	.06	.06
Z	12.00**	-0.33	-23.33**	-23.83**	-21.00**	-24.33**

Note. Numbers in parentheses are Cronbach's α for each measure.

* $p < .05$. ** $p < .01$.

of the IDEA subscales, we conducted a confirmatory factor analysis in MPLUS (Version 6.1) in which we had the 8 observed IDEA items load onto their four respective latent factors, which we correlated. Results showed that the model fit really well, $\chi^2(df = 14) = 60.78$, $p < .05$, CFI = .98, TLI = .97, RMSEA = .04 (90% confidence interval [CI] = [.03, .05]), SRMR = .02. Although statistically significant, the factor loadings for feeling in-between (β s = .54 and .60, respectively) were the lowest among the other IDEA subscales. Indeed, the factor loadings for experimentation/possibilities (β s = .58 and .69, respectively), negativity/instability (β s = .74 and .81, respectively), and identity exploration (β s = .64 and .61, respectively) were slightly improved.

Demographics. A demographics questionnaire was used to assess sex, educational attainment, race/ethnicity, income, nation of origin, and country of residence.

Results

A plan for analysis of these data was preregistered (<https://osf.io/a6uxf/>). We retained the correlation and sex differences analyses; however, we omitted the use of the exploratory factor analysis due to the exploratory nature of the analysis itself. Moreover, we altered the use of PROCESS as a tool to test for moderated mediation due to the number of variables. Instead, we opted to use multigroup path modeling to answer the same hypothesis. The preregistered hypotheses remained intact; however, due to a data collection error regarding the omission of age on some demographic questionnaires, we removed the age hypothesis.

Correlations

Table 1 displays the zero-order correlations between the variables. Of theoretical interest, results supported our first hypothesis and showed that somatic physical health symptoms significantly correlated with perceived stress ($r = .46$, $p < .001$). Perceived stress and negativity/instability were also correlated ($r = .36$, $p < .001$). All emerging adulthood transition

variables correlated positively with each other (all r s $> .14$, all p s $< .01$). Table 1 also shows that the four emerging adulthood variables were significantly skewed (all Z s > 1.96 , p s $< .05$), and thus, our subsequent path modeling procedures used 5,000 bootstrapped estimates with 95% CIs around unstandardized coefficients.

Path Model

Our second hypothesis states that perceived stress will mediate the relation between emerging adulthood transition success and somatic physical health symptoms and was tested using path modeling procedures in MPLUS (Version 6.1) that utilized maximum likelihood estimation techniques to address missing data. Our path model had the four emerging adulthood variables (identity exploration, experimentation/possibilities, negativity/instability, and feeling in-between) as correlated exogenous variables that predicted perceived stress and somatic physical health symptoms. Finally, perceived stress predicted somatic physical health symptoms. INDIRECT model statements in MPLUS allowed for the test of mediation. Due to the skewed nature of the data, we examined the direction and strength of the direct and indirect relationships using 5,000 bootstrapped unstandardized regression coefficients with 95% CIs. All paths and relationships were estimated, and thus, the model was fully saturated causing the data to be a perfect fit for the data (i.e., no degrees of freedom to estimate model fit indices).

Results showed that negativity/instability ($b = .44$, 95% CI [.39, .49]) and experimentation/possibilities ($b = -.14$, 95% CI [-.20, -.07]) significantly predicted perceived stress, which significantly predicted somatic physical health symptoms ($b = .26$, 95% CI [.23, .28]). Negativity/instability ($b = .06$, 95% CI [.03, .10]) and feeling in-between ($b = -.04$, 95% CI [-.08, -.002]) were the only emerging adulthood variables to directly predict somatic physical health symptoms. Finally, all the emerging adult variables significantly correlated with each other. Examination of the estimated indirect effects (and corresponding 95% CIs) showed that perceived stress significantly mediated the relationship between experimentation/

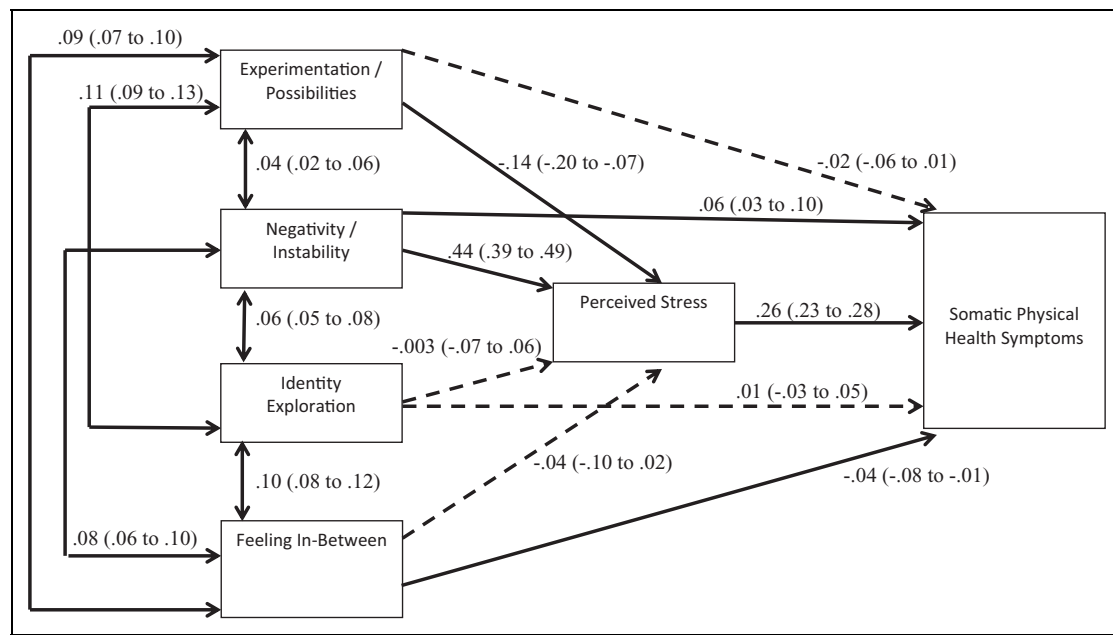


Figure 1. Path model results. Solid lines indicate statistically significant relationships and dashed lines indicate nonsignificant relationships. Single headed arrows are path coefficients and double headed arrows are correlations. Numbers in parentheses are 95% confidence intervals around the unstandardized estimate.

Table 2. Means and Inferential Statistics for Sex Differences on Relevant Variables.

Variable	Male	Female	<i>t</i>	<i>d</i>	<i>Z</i> (Mann–Whitney <i>U</i> Test)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Somatic physical health symptoms	1.46 (.37)	1.68 (.39)	−11.36**	−.51	−12.19**
Perceived stress	2.92 (.66)	3.15 (.64)	−6.80**	−.31	−6.63**
Experimentation/possibilities	3.60 (.51)	3.66 (.47)	−2.50*	−.11	−2.66*
Negativity/instability	3.47 (.63)	3.59 (.56)	−3.84**	−.17	−3.73**
Identity exploration	3.49 (.57)	3.63 (.48)	−5.34**	−.24	−4.71**
Feeling in-between	3.51 (.52)	3.61 (.50)	−3.79**	−.17	−4.30**

Note. The sample size for males in these analyses is 504 for all variables except for the 503 who completed the health symptoms questionnaire. The sample size for females is 1,483 for the four emerging adulthood variables, 1,482 for health symptoms, and 1,481 for perceived stress (varying numbers are a function of missing data). * $p < .05$. ** $p < .01$.

possibilities and somatic physical health symptoms ($b = -.04$, 95% CI $[-.05, -.02]$) and the relationship between negativity/instability and somatic physical health symptoms ($b = .11$, 95% CI $[.10, .13]$). No other mediated effects were significant. The unstandardized path coefficients with 95% CIs from the path model are displayed in Figure 1.

Sex Differences

Several independent t tests were conducted to compare male and female participants on our key variables. Results are displayed in Table 2 and show significant sex differences on all variables, such that female participants reported higher levels of somatic physical health symptoms, perceived stress, and all four emerging adulthood transition variables compared to males. These differences were retained when Mann–Whitney

U tests were conducted to address the skewed nature of the data.

Multigroup Path Model

In order to examine the moderating role of sex and to test our third hypothesis, a multigroup path model was conducted. The model was identical to the previous path model analysis and 5,000 bootstrapped estimates with 95% CIs were estimated for the direct and indirect paths for males and females separately. We started by constraining all paths to be equal between male and female participants. Results showed good model fit for the fully constrained model, $\chi^2 = 18.34$ ($df = 15$), $p = .25$, CFI = 1.00, TLI = 1.00, RMSEA = .02 (90% CI $[.00, .04]$), SRMR = .04. We compared this to a model that was fully unconstrained (the previous path model), which had no degrees of freedom to estimate model fit due to the fully saturated nature of the model

itself. Because the fully constrained and fully unconstrained model did not significantly differ from each other, sex did not moderate the mediated relations found in Figure 1.

Discussion

Past research has found that perceived transitional success through emerging adulthood and into young adulthood is related to several mental health variables (e.g., Galambos et al., 2006); however, there is a paucity of research examining the physical health outcomes associated with this important life transition period. In support of our first hypothesis, our correlational analysis showed that somatic physical health symptoms were positively correlated with negativity/instability and negatively correlated with experimentation/possibilities. These findings are consistent with the research showing that negativity/instability is positively correlated with other negatively valenced variables, such as narcissism (Barlett, 2016), psychopathy (Barlett & Barlett, 2015), and poor mental health (Arnett et al., 2014).

Next, we sought to determine why emerging adulthood dimensions correlate with somatic physical health symptoms. Past research has found positive correlations between perceived stress and physical health symptoms (Toussaint, Shields, Dorn, & Slavich, 2016), and moreover, the unsuccessful transition through emerging adulthood has been associated with increased stress (Lisha et al., 2014). Therefore, we predicted and found evidence to suggest that perceived stress mediated the relationships between (a) negativity/instability and somatic physical health symptoms and (b) experimentation/possibilities and somatic physical health symptoms. The path coefficients and direction of these effects suggest that negativity/instability is positively correlated with stress, which may explain why those who have a negative outlook after emerging adulthood will likely have more somatic physical health symptoms. Conversely, those who are optimistic and excited about future possibilities (high scores on experimentation/possibilities) showed a negative correlation with perceived stress and subsequent somatic health symptoms.

The indirect relationship between negativity/instability and somatic physical health through perceived stress is expected. Past work has consistently shown that this emerging adulthood individual difference variable is related to myriad other negative psychological outcomes, such as internalizing mental health symptoms (Goodman et al., 2015), poor life satisfaction (Reifman et al., 2007), aggression (Barlett, 2016), and psychopathy and narcissism (Barlett & Barlett, 2015). Further, the theorizing by Foster and colleagues (2008) posits that various life transitions during emerging adulthood may increase stress and eventual negative functioning, which, when integrated with Arnett's (2000) and Reifman and colleague's (2007) theory, suggests that those who score high on their perception of negativity/instability are likely to experience high levels of stress and subsequent negative physical health symptomatology. The mediating effect of perceived stress in the relation between experimentation/possibilities and somatic physical health

symptoms can also be explained using similar logic. Albeit less researched, those who score high on experimentation/possibilities are likely to be less stressed while navigating through their emerging adulthood developmental stage. Indeed, Negru (2012) showed that experimentation/possibilities positively correlated with life satisfaction in emerging adults, suggesting that those who score high on this construct are likely navigating through emerging adulthood well. However, we would be remiss if we did not address the low correlation between experimentation/possibilities and health ($r = -.05$) and stress ($r = -.06$). Although both statistically significant, the overall strength of these correlations is weak, and a certain degree of caution is warranted.

Our results also suggest that stress did *not* mediate the relationships between (a) feeling in-between and (b) identity possibilities and somatic physical health symptoms. Indeed, the results from the current study show nonsignificant correlations between these variables. One possible explanation for why perceived stress did not mediate the relationship between feeling in-between and stress is that perceived stress is not the causal variable linking feeling in-between with health outcomes, which precludes that other mediators could be better at explaining these relations. For instance, Barlett and Barlett (2015) showed that feeling in-between was negatively correlated with trait mindfulness, whereas others have shown positive correlations with narcissism (Barlett & Barlett, 2015). Regarding the lack of mediation between identity exploration and somatic physical health symptoms via stress, Marcia (1980) posited that those who are currently exploring possible selves and have committed to an identity report lower levels of stress than those not exploring possible selves. Indeed, examination of the mean scores for the perception of identity exploration (Table 1) showed high levels of this emerging adulthood variable. We did not measure commitment to an identity, and thus, this explanation is speculative; however, it is a possible explanation for the lack of significant relationship with perceived stress.

Finally, past research has shown that females are more likely to report higher levels of stress (Matud, 2004), physical health symptoms (Macintyre et al., 1996), and emerging adulthood dimensions (Barlett & Barlett, 2015) than males, and therefore, we predicted that participant sex would moderate the mediated relationships between emerging adulthood dimensions and somatic physical health symptoms. Our findings from the multigroup path model revealed that sex did not moderate the mediated relations. Indeed, the fully constrained model—where all estimated relationships were set to be equal for male and female participants—showed good model fit and when we freed the equality constraints for all relations in the model, the model fit did not improve. Overall, our findings revealed that even though females report more stress, more somatic physical health symptoms, and emerging adulthood transition perceptions than males, the mediating effect of stress between negativity/instability and experimentation/possibilities on somatic physical health symptoms does not differ between males and females.

Limitations and Future Directions

Akin to all psychological research, there are limitations that should be addressed in future research. First, the correlational nature of the data limits the causal claims that can be made about the relationships tested in our path models. Although we predicted that emerging adulthood dimensions would predict stress, which predicted subsequent somatic physical health symptoms, the temporal ordering we predicted cannot be substantiated with correlational data when the self-report measures are assessed at the same time. We ordered our variables in our path model based on theory (Arnett, 2004; Foster et al., 2008) and past work (Barlett & Barlett, 2015); however, future longitudinal research should attempt to replicate our path model.

Second, several of the emerging adulthood dimension variables had low reliability, and therefore, caution is warranted when interpreting our findings. Inspection of the internal consistency will show that negativity/instability was the only emerging adulthood dimension that had adequate reliability. Moreover, results from our CFA of the IDEA measure showed that the factor loadings for feeling in-between, identity exploration, and experimentation/possibilities were lower than optimal. We believe that there are two possible reasons for the lower than optimal reliability for some of our assessments. First, each emerging adulthood dimension was calculated based scores from only two items from the IDEA short form (Baggio et al., 2015). Research has shown that internal consistency statistics increase when more items are used in their mathematical computation (Streiner, 2003). Indeed, research using longer versions of the IDEA to estimate emerging adulthood dimensions shows higher internal consistency (e.g., Allern, Forster, Neiberger, & Unger, 2015; Barlett & Barlett, 2015). Second, research using various versions of the IDEA has also reported less than optimal internal consistency statistics (e.g., Negru, 2012; Smith, Bahar, Cleeland, & Davis, 2014), which either suggests that (a) the items designed to measure emerging adulthood transitioning may not be similar enough to reliably measure the construct of interest and/or (b) the participants may be in different phases of the emerging adulthood transition that may cause differential responding to the items lowering the overall reliability of the construct. Regardless of the causal reason why the reliabilities for emerging adulthood dimensions were lower than optimal, future research should attempt to utilize the best possible measures to assess these important transitional concepts.

Third, the population that these results generalize to is only U.S. college-aged students. Arnett (2004) posited that emerging adulthood is a developmental period in industrialized society for individuals between the ages of 18 and 29 and is highlighted by major life changes, such as going to college, becoming financially independent, getting married, having children, and so forth. It is likely that the results from our multi-group path modeling may differ if we had a less homogeneous sample of participants who had several of these emerging adulthood markers happen. Future research should sample both college and noncollege 18- to 29-year-old participants to

compare emerging adulthood dimensions and determine whether such a classification could moderate the mediated effect of perceived stress between emerging adulthood dimensions and somatic physical health symptoms.

Finally, we only examined perceived stress as the mediator between emerging adulthood dimensions and somatic physical health symptoms. Past research has shown that social support (Hale, Hannum, & Espelage, 2005), emotional intelligence (Extremera & Fernandez-Berocal, 2006), negative life events (Edwards, Hershberger, Russell, & Markert, 2001), and other variables predict our health-related outcome variable, which could also serve as plausible mediators. We chose perceived stress because of the strong relationship between stress and physical health (e.g., Toussaint et al., 2016) juxtaposed with Arnett's (2004) theory postulating individual differences in the successful transition through emerging adulthood. Future research should assess other plausible mediators to examine other possible causal psychological mechanisms that may explain the relationship between emerging adulthood dimensions and somatic physical health symptoms.

Final Remarks

Understanding the mediating mechanisms and personality moderators that influence why and for whom transitioning through emerging adulthood is successful is important to study. Indeed, our findings suggest that emerging adulthood dimensions are related to stress and somatic physical health symptoms. Hopefully if continued research shows similar effects, then clinicians, counselors, parents, and others can use this information to help emerging adult's transition to young adulthood successfully to reduce any stress and/or poor physical health symptoms.

Declaration of Conflicting Interests

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ORCID iD

Holly McCartney Chalk  <https://orcid.org/0000-0001-5653-4544>

Open Practices

Data and materials for this study have not been made publicly available. The design and analysis plans were not preregistered.

Note

1. We analyzed the data from participants who indicated that their age was between 18 and 29 years, which corresponds to the age range of emerging adults (Arnett et al., 2014). Due to a methodological error, age was not assessed for a nontrivial number of participants, and, for those who did indicate their age, some were older than 29 years. The 2016 participants reported here do not include those participants.

References

- Allern, J., Forster, M., Neiberger, A., & Unger, J. B. (2015). Characteristics of emerging adulthood and e-cigarette use: Findings from a pilot study. *Addictive Behaviors*, 50, 40–44. doi:10.1016/j.addbeh.2015.06.023
- Aneshensel, C. S., Freerichs, R. R., & Huba, G. J. (1984). Depression and physical illness: A multiwave, nonrecursive causal model. *Journal of Health and Social Behavior*, 25, 350–371.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55, 469–480.
- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York, NY: Oxford University Press.
- Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives*, 1, 68–73.
- Arnett, J. J., Žukauskienė, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: Implications for mental health. *The Lancet Psychiatry*, 1, 569–576.
- Baggio, S., Iglisias, K., Studer, J., & Gmel, G. (2015). An 8-item short form of the inventory of dimensions of emerging adults (IDEA) among young Swiss men. *Evaluation and the Health Professions*, 38, 246–254.
- Barlett, C. P. (2016). Exploring the correlations between emerging adulthood, dark triad traits, and aggressive behavior. *Personality and Individual Differences*, 101, 293–298.
- Barlett, C. P., & Barlett, N. D. (2015). The young and the restless: Examining the relationships between age, emerging adulthood variables, and the dark triad. *Personality and Individual Differences*, 96, 20–24.
- Barlett, C. P., & Barlett, N. D. (2016). Using the risk and resilience approach to predict psychopathy in an emerging adult sample. *Emerging Adulthood*, 4, 186–191.
- Cohen, P., Kasen, S., Chen, H., Hartmark, C., & Gordon, K. (2003). Variations in patterns of developmental transitions in the emerging adulthood period. *Developmental Psychology*, 39, 657–669. doi:10.1037/0012-1649.39.4.657
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385–396.
- Denton, M., Prus, S., & Walters, V. (2004). Gender differences in health: A Canadian study of the psychosocial, structural and behavioural determinants of health. *Social Science and Medicine*, 58, 2585–2600.
- Edwards, K. J., Hershberger, P. J., Russell, R. K., & Markert, R. J. (2001). Stress, negative social exchange, and health symptoms in university students. *Journal of American College Health*, 50, 75–79.
- Extremera, N., & Fernandez-Berrocal, P. (2006). Emotional intelligence as predictor of mental, social, and physical health in university students. *The Spanish Journal of Psychology*, 9, 45–51.
- Foster, H., Hagan, J., & Brooks-Gunn, J. (2008). Growing up fast: Stress exposure and subjective “weathering” in emerging adulthood. *Journal of Health and Social Behavior*, 49, 162–177.
- Galambos, N. L., Barker, E. T., & Krahn, H. J. (2006). Depression, self-esteem, and anger in emerging adulthood: Seven-year trajectories. *Developmental Psychology*, 42, 350–365. doi:10.1037/0012-1649.42.2.350
- Goodman, I., Henderson, J., Peterson-Badali, M., & Goldstein, A. L. (2015). The relationship between psychosocial features of emerging adulthood and substance use change motivation in youth. *Journal of Substance Abuse Treatment*, 52, 58–66.
- Hale, C. J., Hannum, J. W., & Espelage, D. L. (2005). Social support and physical health: The importance of belonging. *Journal of American College Health*, 53, 276–284.
- Halfon, N., & Hochstein, M. (2002). Life course health development: An integrated framework for developing health, policy, and research. *The Milbank Quarterly*, 80, 433–479.
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, 107, 128–140.
- Howard, A. L., Galambos, N. L., & Krahn, H. J. (2010). Paths to success in young adulthood from mental health and life transitions in emerging adulthood. *International Journal of Behavioral Development*, 34, 538–546. doi:10.1177/0165025410365803
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine*, 64, 258–266.
- Linn, M. W., Sandifer, R., & Stein, S. (1985). Effects of unemployment on mental and physical health. *American Journal of Public Health*, 75, 502–506.
- Lisha, N. E., Grana, R., Sun, P., Rohrbach, L., Spruijt-Metz, D., Reifman, A., & Sussman, S. (2014). Evaluation of the psychometric properties of the revised inventory of the dimensions of emerging adulthood (IDEA-R) in a sample of continuation high school students. *Evaluation and the Health Professions*, 37, 156–177. doi:10.1177/0163278712452664
- Macintyre, S., Hunt, K., & Sweeting, H. (1996). Gender differences in health: Are things really as simple as they seem? *Social Science and Medicine*, 42, 617–624.
- Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), *Handbook of adolescent psychology*. New York, NY: Wiley.
- Matud, M. P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, 37, 1401–1415. doi:10.1016/j.paid.2004.01.010
- Negru, O. (2012). The time of your life: Emerging adulthood characteristics in a sample of Romanian high-school and university students. *Cognition, Brain, and Behavior*, 16, 357–367.
- Nelson, L. J., & Barry, C. M. (2005). Distinguishing features of emerging adulthood: The role of self-classification as an adult. *Journal of Adolescent Research*, 20, 242–262. doi:10.1177/0743558404273074
- Reifman, A., Arnett, J. J., & Colwell, M. J. (2007). Emerging adulthood: Theory, assessment and application. *Journal of Youth Development*, 2, 37–48.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of

- offspring. *Psychological Bulletin*, 128, 330–366. doi:10.1037//0033-2909.128.2.330
- Schulenberg, J. E., & Zarrett, N. R. (2006). Mental health during emerging adulthood: Continuity and discontinuity in courses, causes, and functions. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 135–172). Washington, DC: American Psychological Association.
- Schwartz, S. J., Zamboanga, B. L., Luyckx, K., Meca, A., & Ritchie, R. A. (2013). Identity in emerging adulthood: Reviewing the field and looking forward. *Emerging Adulthood*, 1, 96–113. doi:10.1177/2167696813479781
- Smith, D. C., Bahar, O. S., Cleeland, L. R., & Davis, J. P. (2014). Self-perceived emerging adult status and substance use. *Psychology of Addictive Behaviors*, 28, 935–941. doi:10.1037/a0035900
- Streiner, D. L. (2003). Starting at the beginning: An introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, 80, 99–103. doi:10.1207/S15327752JPA800118
- Torsheim, T., Ravens-Sieberer, U., Hetland, J., Valimaa, R., Danielson, M., & Overpeck, M. (2006). Cross-national variation of gender differences in adolescent subjective health in Europe and North America. *Social Sciences and Medicine*, 62, 815–827. doi:10.1016/j.socscimed.2005.06.047
- Toussaint, L., Shields, G. S., Dorn, G., & Slavich, G. M. (2016). Effects of lifetime stress exposure on mental and physical health in young adulthood: How stress degrades and forgiveness protects health. *Journal of Health Psychology*, 21, 1004–1014. doi:10.1177/1359105314544132
- Verbrugge, L. M. (1983). Multiple roles and physical health of women and men. *Journal of Health and Social Behavior*, 24, 16–30.

Author Biographies

Christopher P. Barlett earned his PhD in experimental social psychology from Iowa State University. Currently, he is an associate professor in the psychology department at Gettysburg College. Trained as an aggression researcher, Dr. Barlett's research focuses on identifying the risk factors and psychological processes that change the likelihood of aggression.

Natalie D. Barlett is an adjunct assistant professor at Gettysburg College with a PhD from Kansas State University in experimental social psychology. Her current research interests include exploring the factors related to and the developmental process experienced with Emerging Adulthood particularly as they relate to health.

Holly McCartney Chalk earned her PhD in clinical psychology from the Ohio State University. She is currently an associate professor of psychology at McDaniel College and a clinical psychologist in private practice. Dr. Chalk's research focuses on psychological well-being in emerging adults, with a particular interest in young adults who experience disability.