

The Role of Social Support in Predicting Depression and Task Overload Among College Students

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Guided by the Relationships Motivation Theory, this short-term longitudinal study examined associations between social support (i.e., relatedness), depression, and stress in the form of task overload among emerging adult, university students (N = 184 at time one; N = 105 at time two; 69.2% female). Results from a series of path models indicated a significant relationship between decreased perceptions of social support over time and an increase in perceived task overload with significant mediating effects through depressive symptomology. Implications for counseling services as well as intervention and awareness points for university professionals are discussed.

Keywords: depression, stress, social support, emerging adult

Introduction

Transitioning to college presents anticipated and unforeseen challenges for individuals as this decision to pursue higher education results in substantial changes to ascribed responsibilities, personal interactions, and social environments, as many relocate to attend school (Hicks & Heastie, 2008). Thriving in college requires that students manage academic course loads, social expectations, and, in some cases, financial responsibilities, typically independent of one's family of origin (Geisner, Mallett, & Kilmer, 2012). Effectively balancing these expectations can serve as a salient stressor for both new and established students both within and outside the college environment (e.g., dealing with household chores, learning to balance responsibilities revolving around paid work, having to take extra remedial classes due to being less prepared for degree course requirements; Astin, 2005). College students who struggle to effectively handle stress face increased symptomology, such as depression and poor academic performance (Jackson & Finney, 2002). In fact, students today are at a higher risk of psychopathology than previous

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generations (Twenge et al., 2010), and mental health challenges enhance the risk of not completing college. Given that about half of college students drop out before degree completion, identifying factors that promote student well-being and their potential to be successful in college is essential (National Student Clearinghouse Research Center, 2014; Wolf, Perkins, Butler-Barnes, & Walker, 2017).

One factor that has the potential to influence how stress is managed, particularly in the context of transitions, is one's *social relationships*, as individuals live their lives interdependently throughout the life-course (e.g., making friends, getting married; Elder, Johnson, & Crosnoe, 2003). Research has indicated that individuals transitioning into different development stages had more challenges when social support networks were perceived as weak (e.g., McKee, Stapleton, & Pidgeon, 2017). Conversely, research consistently demonstrates that healthy relationships are a salient predictor of positive mental health among emerging adult college students (e.g., Li, Albert, & Dwelle, 2014; Reed, Ferraro, Lucier-Greer, & Barber, 2015). Feeling connected to others and receiving support from a high-quality peer network, a concept known as *relatedness*, can buffer the effects of life stressors, such as pursuing higher education (Chao, 2012).

There is a need to understand and promote social well-being and individual functioning among emerging adults in collegiate settings. The number of individuals seeking higher education continues to increase; as many as 21 million emerging adults choose to attend college, and estimates suggest that number is rising (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2015). Additionally, emerging adulthood is a developmental period characterized by autonomy-seeking, differentiation, and increased personal responsibilities (Arnett, 2015). Enhanced autonomy and differentiating from one's family of origin does not infer that emerging adults are required to manage life stressors alone (Deci & Ryan, 2014). Rather suppositions are that autonomy and healthy development are facilitated by supportive relationships.

Relationships Motivation Theory (RMT; Deci & Ryan, 2014) posits that individuals with high-quality social support (i.e., healthy relationships that consist of reliable friendships, showing affection, and giving and receiving tangible and emotional support; Barnett, Scaramella, Neppl, Ontai, & Conger, 2010) experience better mental health and individual functioning, particularly in the context of turbulence and transitions (Deci & Ryan, 2014). For college students, an inability to maintain secure attachments in close relationships is related to an increased risk for psychological distress, including depression and anxiety (Lopez, Mitchell, & Gormley, 2002). Poor social support is also predictive of higher rates of academic stress (Rayle & Chung, 2007). It is not uncommon for students to feel overtasked with responsibilities required of them, and this stress is inversely related to school performance and academic success (Shankar & Park, 2016).

This study extends our understanding of how peer relationships in emerging adulthood are associated with college student well-being. Specifically, we examine how *changes in social support* (i.e., decreases in relatedness) are associated directly and indirectly with perceptions of well-being (i.e., perceptions of task overload). Using a short-term longitudinal design, we posited that experiencing a significant decline in social support over a short period of time would be associated with increased depressive symptomology and heightened perceptions of task overload, conceptualized as feeling overwhelmed by daily activities and as though there is not have enough time to complete projects. Guided by RMT (which postulates that quality relationships within one's current environment are expected to promote optimal human functioning; see Deci & Ryan, 2000; 2014; Ryan & Deci, 2002) and extant literature, we hypothesized that *decreased perceptions of social support would be associated with increased perceptions of task overload* (H1) and that *this relationship would be mediated by depressive symptoms* (H2).

Method

Participants were undergraduate students from a large university in the southeastern United States who were surveyed at two time points over the course of a 16-week semester. The first wave of data collection occurred within the first two weeks of the semester and the second wave of data collection occurred approximately 10-12 weeks later ($N = 184$ at Time 1; $N = 105$ at Time 2). Participants were recruited from an introductory course that serves as a university-wide requirement. Accordingly, students from diverse majors completed this course as part of their degree requirements. Specifically, 21.8% of students were age 18 at the time of the study, 35.2% were age 19, 19.7% were age 20, 10.6% were age 21, and the remaining individuals were between the ages 22 through 25 (approximately 12% of the sample). Most participants were full-time students (95.8%). The majority of participants identified as female (69.2%) and as Caucasian/White (76.9%); fewer reported their race/ethnicity as Hispanic/Latino (9.8%), African-American/Black (7.7%), Asian-American (2.8%), or bi-racial (2.1%). Most participants reported not working for pay (61.5%) or working part-time (35.7%); few reported being employed full-time (2.8%). Additionally, a majority of participants reported that they lived with nonfamilial roommates (62%). Approval for the study was granted by the University's Institutional Review Board. Informed consent was provided to participants online before the survey. After completing the second survey, students in eligible classes were provided minimal extra credit (< 1% of final grade).

Measures

Study measures are described below and descriptive statistics of each measure at Time 1 and Time 2 are provided in Table 1.

Decreased perceptions of social support. Perceived social support was examined via three subscales (Reliable Alliance, Attachment, and Social Integration) from the *Social Provisions*

Scale (SPS) which together comprise the construct of Affectional Ties (Cutrona & Russell 1987). The SPS has demonstrated internal reliability, construct validity, and factorial validity in multiple populations ranging from adolescents to the elderly (Cutrona & Russell, 1987; Motl, Dishman, Saunders, Dowda, & Pate, 2004). These subscales consist of 12 items that were used to assess multiple aspects of an individual's social support networks. Sample items included: "There are people I can count on in an emergency" (Reliable Alliance), "I have close relationships that provide me with a sense of emotional security and well-being" (Attachment), and "There are people who enjoy the same social activities I do" (Social Integration). Responses were 1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*; participants were asked to respond to these items at both waves of data collection. Responses were averaged, with higher scores indicating higher levels of perceived social provisions (Time 1: $M = 3.39$, $SD = .53$, $\alpha = .76$; Time 2: $M = 3.28$, $SD = .62$, $\alpha = .73$). Participants responses were combined and dichotomized to represent those who: (1) had lower scores on the SPS at Time 2 indicating decreased perceptions of social provisions ($n = 41$; 42.3%); or (0) experienced no change or had higher levels of social provisions at Time 2 ($n = 56$; 57.7%). This allowed for evaluation of a general sense of change as opposed to a rate of change across time. Subsequently, by evaluating a general sense of change, this assessment strategy allows for the assessment of a specific aspect of the independent variable of interest (in this case decreased perceptions of social support) and its association with the mediating and dependent variables of the model.

Depressive symptoms. Depressive symptoms were examined with a ten-item abbreviated version of the Center for Epidemiologic Studies Depression Scale (CES-D; Irwin Haydari, & Oxman, 1999; Radloff 1977). The CES-D has demonstrated good internal reliability, criterion validity, and convergent validity among various populations (Björngvinsson, Kertz, Bigda-Peyton, McCoy, & Aderka, 2013; Irwin et al. 1999; Cheung, Liu, & Yip, 2007). These ten items were used to assess how participants felt or behaved throughout the prior week. Sample items included: "I felt lonely" and "I had trouble keeping my mind on what I was doing." Responses were 0 = *rarely or none of the time*, 1 = *some or a little of the time*, 2 = *occasionally or a moderate amount of time*, and 3 = *most or all of the time*; participants were asked to respond to these items at both waves of data collection. Higher scores indicate higher levels of depressive symptomology (Time 1: $M = 1.76$, $SD = .51$, $\alpha = .80$; Time 2: $M = 1.84$, $SD = .59$, $\alpha = .83$). Change in depressive symptomology was measured by examining Time 2 symptomology while controlling for Time 1 symptomology. This assessment strategy allows for the assessment of effects that occur independently of variation explained by prior levels of depressive symptomology.

Task overload. Task overload was examined with the 7-item Stress subscale from the Rhode Island Stress and Coping Inventory (RISCI; Fava, Ruggiero, & Grimley, 1998). The RICS I has demonstrated factorial validity as well as internal reliability among individuals from early and older adulthood (Evers et al., 2006; Fava et al., 1998). This subscale assessed participants' feelings of being overwhelmed and/or pressured throughout the last month and served as the

study outcome variable. Sample items included: “I felt there was not enough time to complete my daily tasks” and “I felt overwhelmed.” Responses were 1 = *never*, 2 = *seldom*, 3 = *occasionally*, 4 = *often*, and 5 = *frequently*; participants were asked to respond to these items at both waves of data collection. Higher scores indicate higher levels of perceived task overload (Time 1: $M = 2.91$, $SD = .74$, $\alpha = .83$; Time 2: $M = 2.99$, $SD = .84$, $\alpha = .86$). Change in task overload was measured by examining Time 2 reports, controlling for Time 1 reports, allowing for the assessment of effects that occur independently of variation explained by prior levels of task overload.

Table 1. Descriptive Statistics for Observed Variables

	Range	α	Mean	SD	Skew	Kurtosis
Social Support (Time 1)	1-4	.76	3.39	.53	.527	.494
Social Support (Time 2)	1-4	.73	3.28	.62	.626	-.545
Depressive Symptoms (Time 1)	0-3	.80	1.76	.51	.528	.141
Depressive Symptoms (Time 2)	0-3	.83	1.84	.59	.592	.729
Task Overload (Time 1)	1-5	.83	2.91	.74	.748	-.587
Task Overload (Time 2)	1-5	.86	2.99	.84	.842	.041

Note: Range = scale Likert response, α = Cronbach's Alpha Coefficient, *SD* = standard deviation

Data Analyses

To test the study hypotheses a series of structural equation models (SEM) were conducted using AMOS 23, which is an extension program of SPSS (Arbuckle, 2014). SEM allows for all observable variables to be modeled simultaneously, including both direct and indirect pathways of variables (i.e., SEM allows researchers to test for mediation), and provides indices to determine if the variables fit the data in the hypothesized manner (Lei & Wu, 2007). Following suggestions from the extant literature, Full Information Maximum Likelihood estimation was used to account for missing data (Enders & Bandalos, 2001). Little's (1988) Missing Completely at Random test was nonsignificant ($\chi^2 = 31.08$, $df = 32$, $p = .51$), indicating data were missing completely at random. Additionally, extant literature has suggested certain demographic variables have the potential to uniquely influence well-being outcomes, particularly, *gender* and *student status* (i.e., *amount of course load*). Specifically, females have been shown to report higher levels of depression symptoms than males (Patton et al., 2008) and students whose course load is classified as part-time tend to report higher levels of stress (e.g., time management strains when trying to manage work and studying) than full-time students (MacCann, Fogarty, & Roberts, 2012). Subsequently, during preliminary analysis, gender and student status were examined by use of bivariate correlations to identify if these variables should be included as control variables within the subsequent SEM. For gender, a single dichotomized variable was coded to reflect those that identified as male (0) and those that identified as female (1). For student status, a single dichotomized variable was coded as 0 to reflect those who identified as part-time students (less than 12 semester hours of course load) and 1 to reflect those that identified as full-time students (between 12 and 18 semester hours of course load).

Standardized beta coefficients (β) and accompanying p -values were examined within the SEM as β and p -values reflect the magnitude, direction of effect (positive or negative), and significance of the relationships between variables within the model (Yuan & Bentler, 2006). By analyzing these pathways with standardized estimates, researchers can compare unit changes across multiple variables that originally had different units of measurement (Yuan & Bentler, 2006). Specifically, for this study, the significance level of the β pathways were examined between the predictor variable (decreased perceptions of social support), the mediating variable (depressive symptoms), and the outcome variable (perceptions of task overload), with $p < .05$ indicating a unit change in one variable was significantly associated with a unit change in another variable. The comparative fit index (CFI) and root mean square error approximation (RMSEA) were used to assess model goodness-of-fit; these indices reflect the examination of the model the researchers specified, and whether or not the “specified model” fits the nature of the data (Lei & Wu, 2007). CFI values at .95 or above suggest good fit (Hu & Bentler, 1999) indicating the hypothesized model outperformed the baseline model, which assumes there is no connection between the observed variables (Hooper, Coughlan, & Mullen, 2008). CFI values between .90 and .95 suggest adequate fit, and values lower than .90 suggest poor fit (Hooper et al., 2008; Hu & Bentler, 1999). RMSEA values at or below .08 suggest adequate fit and values at or below .06 suggest good fit (Hu & Bentler, 1999), indicating parameter estimates for the hypothesized model are a good match to the population covariance matrix (Hooper et al., 2008). Additionally, RMSEA values above .08 suggest poor fit (Hooper et al., 2008; Hu & Bentler, 1999).

Finally, the Sobel test was used to examine indirect effects, a widely used method for examining the significance of the indirect effect among normally distributed samples (Sobel, 1982). Samples can be examined for normality by evaluating skewness and kurtosis values, with kurtosis values below 7 and skewness values below 2 suggesting normal distribution (Curran, West, & Finch, 1996). In this study, kurtosis values (ranging from $-.587$ to $.729$) and skewness values (ranging from $.527$ to $.842$) fell within acceptable ranges, indicating that the variables were normally distributed (see Table 1), and thus, the Sobel test was deemed appropriate. The Sobel test determines how many standard deviations the mediating variable of interest is from a mean value baseline score of zero, known as a Z-score (z) and if z has a p -value below .05, which would indicate that the indirect effect has a value that is significantly different from zero (Preacher & Leonardelli, 2001; Sobel, 1982). In other words, a significant indirect effect (z) would suggest that depressive symptomology was a salient mechanism through which lower levels of social support were associated with higher levels of task overload.

Results

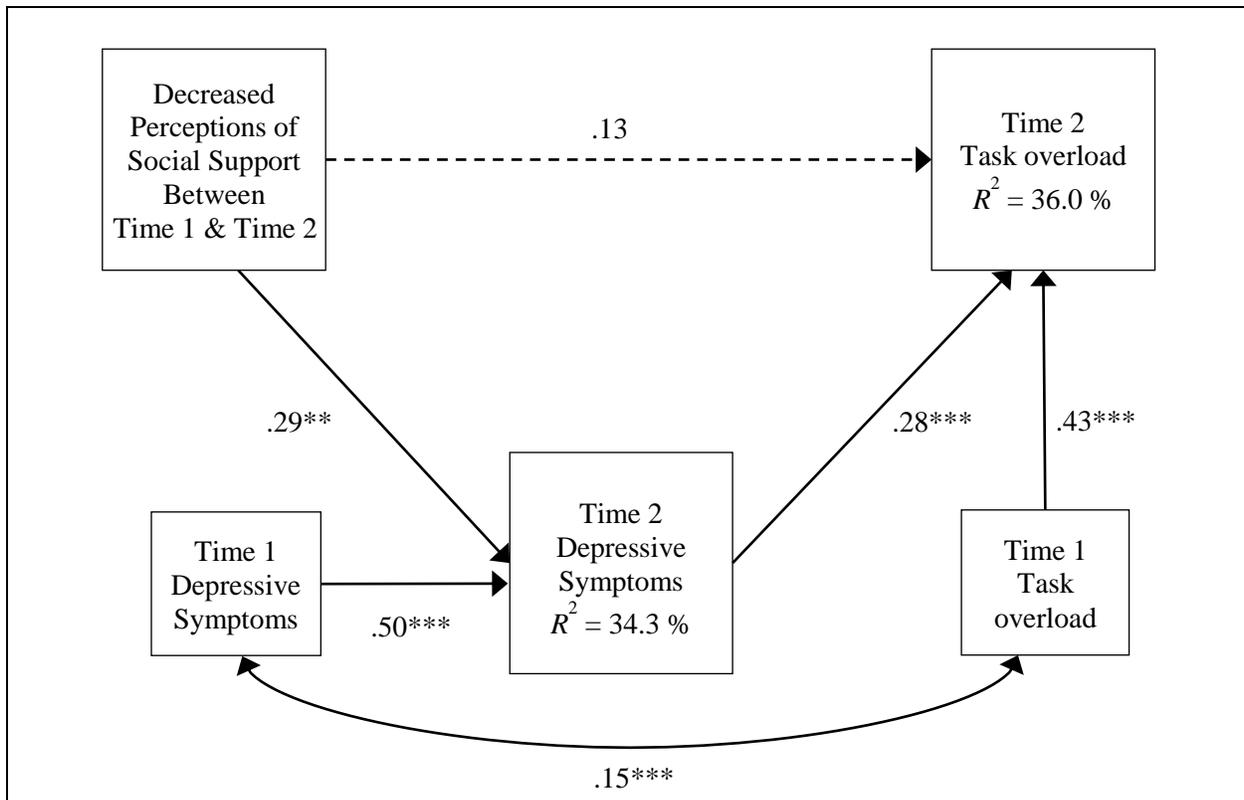
Correlations are provided in Table 2. Generally, a majority of the variables used for SEM were moderately and significantly correlated (ranging from $-.01$ to $.55$; Moore, 2010) indicating related but distinct constructs with some variation over time. Additionally, two demographic variables (gender and student status) were assessed as potential covariates. Neither gender nor

student status was found to be significantly correlated with Time 1 or Time 2 social support, depressive symptoms, or task overload (see Table 2), and thus, neither demographic variable was included in the subsequent SEM.

A direct path model was fit to examine H1. As hypothesized, those who experienced decreased perceptions of social support also reported increased perceptions of task overload ($\beta = .25, p < .01$). Next, a mediated path model was fitted to examine H2 (see Figure 1). Model fit was CFI = .95 and RMSEA = .08. As hypothesized, decreased perceptions of social support were significantly related to increased depressive symptoms ($\beta = .29, p < .001$), and increased depressive symptoms were significantly related to increased task overload ($\beta = .28, p < .001$). Additionally, the link between decreased perceptions of social support and changes in task overload became nonsignificant ($\beta = .13, p = ns$) when the mediator (depressive symptoms) was included in the model.

The Sobel test was used to examine the statistical significance of the indirect effect (depressive symptoms). The post hoc analysis revealed that depressive symptoms significantly mediated the path between decreased social support and increased task overload ($z = 2.39, p = .01$).

Figure 1. Mediation Model Illustrating the Relationship between Social Support and Changes in Task Overload as Mediated by Changes in Depressive Symptomology among College Students



Note: Standardized path coefficients presented; $***p < .001$; Model fit: (CFI = .95; RMSEA = .08).

Table 2. Correlation Matrix for All Study Variables (Time 1 N = 184; Time 2 N = 105)

	1	2	3	4	5	6	7	8
1. Social Support (T1)	-							
2. Social Support (T2)	.450*	-						
3. Depressive Symptoms (T1)	-.324**	-.275**	-					
4. Depressive Symptoms (T2)	-.314**	-.520**	.543**	-				
5. Task Overload (T1)	-.106	-.006	.398**	.231*	-			
6. Task Overload (T2)	-.220*	-.153	.248*	-.548*	.510**	-		
7. Gender	.041	.033	.095	.100	.089	.154	-	
8. Student Status	-.143	-.054	-.028	-.021	-.165	-.126	.064	-

Note: * $p < .05$; ** $p < .01$. T1 = Time 1, T2 = Time 2

Discussion

This short-term longitudinal study builds on prior research and evaluates indicators of well-being in the context of the Relationships Motivation Theory (RMT; Deci & Ryan, 2014) to determine whether and how meaningful relationships were associated with outcomes among collegiate emerging adults (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). The results demonstrated that decreased perceptions of social support were associated with poorer well-being among emerging adults within this sample, specifically higher perceptions of task overload, providing support for the first hypothesis.

Previous research suggests that stress is negatively associated with emerging adults functioning (Rayle & Chung, 2007). The current findings advance this understanding, suggesting that social support plays a role in perceived task overload during college.

The relationship between social support and task overload was fully mediated by depressive symptoms, providing support for the second hypothesis. Previous research has explored the adverse effects that depression has on emerging adults' well-being (Geisner et al., 2012), with the current findings suggesting this relationship is particularly salient during college where resources and social support are frequently changing (Small, Pamphile, & McMahan, 2015). Declines in meaningful social relationships appear to manifest internally as individuals report declines in mental health. Consequently, the depletion of psychological resources manifests externally as emerging adults struggle to complete nondiscretionary daily tasks.

Implications

Counseling services can serve as a beneficial avenue for students to discretely share strains generally related to the college experience as well as specific stressors that emerge during the academic year. University counseling and support services provide a host of benefits related to increased retention rates in students and improvements in emerging adult mental health outcomes (Draper, Jennings, Baron, Erdur, & Shankar, 2002; Lee, Olson, Locke, Michelson, & Odes, 2009).

This study suggests that it may benefit student well-being to encourage them to maintain healthy connections with others and letting them know that becoming autonomous and independent adults does not mean operating in isolation. When considering the importance of meaningful relationships on functioning, college faculty, staff, and support services might encourage students to seek out supportive social environments that provide meaningful connections (e.g., student organizations; Holzweiss, Rahn, & Wickline, 2007). By encouraging students to engage in environments that promote the formation of new relationships, well-being may be enhanced as students perceive their need for relatedness as being met through peer support.

Isolation and changes in peer groups may also serve as a warning signal for professionals. Emerging adults may perceive isolation to be a coping mechanism when faced with stressors (e.g., Reed, Lucier-Greer, & Parker, 2016). College counselors might assess for changes in social networks as well as mental health when creating treatment plans for students who present with stress related to task overload. Additionally, to address relationship maintenance and social integration, professionals will benefit from having a working knowledge of student clubs, associations, and organizations available throughout campus. These student groups are accessible social environments within higher education that promote meaningful connections for emerging adults who share similar interests.

Theoretically, socially supportive environments are positioned to promote the basic psychological need of relatedness (Deci & Ryan, 2014), and this has been empirically supported. For example, emerging adults report fewer adverse psychological symptoms as a result of their involvement in student organizations (Mahmoud, Staten, Hall, & Lennie, 2012). Engagement in activities provides an environment to foster meaningful relationships.

Limitations and Future Directions

There are several factors to note in the interpretation of these findings. First, generalizability is limited due to the use of a single university convenience sample. The sample reflects students from diverse majors and multiple class levels, but it was predominantly comprised of white, female students. This may inflate findings as some prior research has indicated that associations between social support and risks for psychological adversity are higher for females as compared to males (Kendler, Myers, & Prescott, 2005). Although in the present study, gender was not significantly correlated with any variables, future studies might consider recruiting a more diverse sample to examine group differences between individuals that are underrepresented in this study (e.g., males) to confirm these findings. By recruiting a more diverse sample, researchers can assess if the present findings are congruent with recent research that suggests gender gaps in psychological factors may narrow throughout the transition to adulthood (Thompson & Bland, 2018; Vuong, Brown-Welty, & Tracz, 2010) as opposed to earlier research that suggests otherwise (Kendler et al., 2005; Patton et al., 2008).

Prior research has indicated that student course load (e.g., full-time vs. part-time status) is associated with salient factors for emerging adult college students, including time management and grade point average (MacCann et al., 2012). Subsequently, we examined correlations between student course load and the study variables to determine if it should be accounted for in the SEM. Student status was not significantly correlated with any study variables and thus was not included in the primary analysis. However, we acknowledge that student course load status is one of several demographic variables that may be associated with emerging adult outcomes. For example, participants in this study were not asked to explicitly identify their area of degree study or their specific student classification (e.g., freshman versus senior). Future research could assess college demographics such as *area of study* and *student classification*, since some research has demonstrated these factors are associated with well-being outcomes in emerging adults (Ajinkya, Schaus, & Deichen, 2016; Cox, Ross-Stewart, & Foltz, 2017; Halter, 2004).

Furthermore, as with any longitudinal study, there was attrition from Time 1 to Time 2. Best practices in missing data were applied, such that Full Information Maximum Likelihood estimates were used allowing us to use all available information to estimate the model, but response rates on the Time 2 data collection were modest. Future studies might consider techniques to enhance response rates and minimize attrition, including incentivized participation and more comprehensive follow-up communications.

Next, this study examined social support based on interactions between others within multiples types of social networks. Specifically, the Social Provisions Scale prompt states, “I want you to think about your current relationship with friends, family members, coworkers, community members, and so on. Please indicate to what extent you agree that each statement describes your current relationships with other people.” Subsequently, this assessment of social support taps into a global framework of relatedness. Future studies may consider specific types of social support networks (e.g., church friends, dorm-mates, college club sports teammates, etc.) in addition to a global sense of support. By investigating specific types of social networks, researchers may be able to better understand which “important others” are more salient in promoting positive outcomes for emerging adults within college settings and provide targeted interventions to those specific environments.

Finally, Time 2 data collection occurred approximately 10-12 weeks after the start of an academic semester. This is important to note, as responses may have been influenced by the timing of the semester (e.g., final projects; exams). Future studies could consider collecting data at varying time points throughout the semester to examine if similar results occur.

Ultimately, this study advances understanding of how specific well-being factors (social support and depression) have important implications for task overload among collegiate emerging adults. Meaningful relationships play a significant role in mental health trajectories and the ability to complete the necessary tasks associated with being a student and an autonomous individual.

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