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A CLOSER LOOK AT SELF-ESTEEM, PERCEIVED SOCIAL SUPPORT, AND COPING STRATEGY: A PROSPECTIVE STUDY OF DEPRESSIVE SYMPTOMATOLOGY ACROSS THE TRANSITION TO COLLEGE

CATHERINE LEE, DANIEL A. DICKSON, COLLEEN S. CONLEY, AND GRAYSON N. HOLMBECK

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The first year of college is a significant life transition, which is often characterized by stress and may contribute to the development or exacerbation of depressive symptoms. Due to the considerable negative outcomes that are associated with depressive symptoms across the lifespan, it is important to understand the mechanisms and pathways through which depressive symptoms arise. This prospective study examines the mediating and moderating roles of perceived social support and disengagement coping on the association between self-esteem and depressive symptomatology in a sample of 1,118 first-year college students. Results of longitudinal cross-lagged path analyses indicate that self-esteem predicts depressive symptomatology via perceived social support and disengagement coping. The association between self-esteem and perceived social support appear to be bidirectional, in that level of self-esteem predicts perceived social support, and vice versa. Furthermore, disengagement coping was found to moderate the effect of self-esteem on depressive symptomatology, in that increased levels of disengagement coping led to greater depressive symptoms within the context of both high and low self-esteem. However, this pattern was not observed at lower levels of disengagement coping, which indicates high levels of disengagement coping as a particular risk factor for depressive symptomatology, diminishing the advantage of high self-esteem.

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The transition to college can be a stressful experience, and may initiate or exacerbate depressive symptoms in emerging adults (Rutter & Sroufe, 2000). Students typically face a host of new challenges, as the transition requires adapting to new environments, balancing increased academic loads, and managing social demands (Brougham, Zail, Mendoza, & Miller, 2009; Dyson & Renk, 2006). As a result, this population is particularly vulnerable to developing depressive symptoms, which is a growing problem across college campuses in the United States (Dixon & Kurpius, 2008; Dyson & Renk, 2006; Gallagher, 2011). For example, the American College Health Association (2012) reported that 31.6% of college students were so depressed that it was difficult to function, making depressive symptoms some of the most common Axis I symptoms on campuses (also see Furr, Westefeld, McConnell, & Jenkins, 2001).

Depressive symptoms have been found to not only impact students during college, as observed in academics, interpersonal relationships, and overall quality of life (Rapaport, Clary, Fayyad, & Endicott, 2005), but also persist into adulthood (Kessler et al., 2006; Salmela-Aro, Aunola, & Nurmi, 2008). Given the detrimental short- and long-term effects of depressive symptoms and its increasing prominence in college students, it is important to consider the interaction of risk and protective factors that lead some, but not others, down a path to depression.

Within the context of the transition to college, low self-esteem has consistently been indicated to be a contributing factor in depressive symptomatology (Dixon & Kurpius, 2008; Orth, Robins, & Roberts, 2008). However, there are gaps in the literature regarding pathways through which self-esteem affects depression, and what mechanisms might account for their association (Orth et al., 2008). Due to the loss of familiar and secure structuring contexts (e.g., family, existing social networks, and the home environment for those who live at school) during the transition to college and the increase in responsibility for life competence during emerging adulthood, perceived social support and adaptive coping strategies are two particularly critical variables to consider in this process.

Previous research consists primarily of cross-sectional studies that focus on single pathways, thus limiting the capacity to compare the psychosocial mechanisms that are potentially associated with increased depressive symptoms. The current study aims to address gaps in the existing literature by testing competing moderation and

meditation models in the association between self-esteem and depressive symptoms over the course of the first year of college.

SELF-ESTEEM AND DEPRESSION

Previous literature has demonstrated a strong and consistent association between low self-esteem and depression (Sowislo & Orth, 2013). As originally postulated by Rosenberg (1965), individuals with high self-esteem believe that they are people of worth, and thus have a sense of respect for themselves. Conversely, the traditional description of low self-esteem involves a low overall evaluation of the self, persistent feelings of inferiority, a sense of worthlessness, and often, feelings of loneliness and insecurity (Mruk, 1999). It is proposed that individuals with higher self-esteem are better able to adapt to challenges and demands, resulting in better adjustment to college life when compared to those with lower self-esteem (Bettencourt, Charlton, Eubanks, Kernahan, & Fuller, 1999; Kernis, 2003).

There is considerable evidence for the *vulnerability model* of self-esteem and depression, which hypothesizes that low self-esteem serves as a risk factor for depression, especially in the face of major life stressors (Sowislo & Orth, 2013). However, as with many construct associations, the effects of self-esteem on depression may be mediated or moderated by other intervening variables, such as perceived social support and the ability to effectively cope with stress. The present study explores the mechanisms involved in the association between self-esteem and depression, and the roles of these two critical components of mental health outcomes in the first-year college experience.

THE ROLE OF PERCEIVED SOCIAL SUPPORT IN THE ASSOCIATION BETWEEN SELF-ESTEEM AND DEPRESSION

Social support has been frequently cited as a protective factor against depressive symptoms, particularly during the transition to college (Cohen & Hoberman 1983; Friedlander, Reid, Shupak, & Cribbie, 2007; Zimet, Dahlem, Zimet, & Farley, 1988). A vast body of research has demonstrated that the adequacy of social support is directly re-

lated to severity of psychological symptoms (Andrews, Tennant, Hewson, & Vaillant, 1978; Procidano & Heller, 1983). Furthermore, self-esteem has been found to play a role in predicting perceived social support during the transition to college (Brissette, Scheier, & Carver, 2002; Friedlander et al., 2007). While individuals with high self-esteem expect others to like them (Walster, 1965), individuals with low self-esteem often have distorted, negative perceptions of themselves, others, and their relationships (Baumeister, 1993). In addition, individuals with low self-esteem have also been shown to be more sensitive to rejection (Li et al., 2012), and may perceive others' behaviors more negatively (Swann, Rentfrow, & Guinn, 2003). Therefore, low self-esteem may motivate social avoidance, thus impeding actual and perceived social support (Ottenbreit & Dobson, 2004). In sum, first-year college students with low self-esteem may employ maladaptive cognitive and behavioral strategies that affect their subsequent perceived social support, thereby increasing depressive symptomatology.

THE ROLE OF SELF-ESTEEM IN THE ASSOCIATION BETWEEN PERCEIVED SOCIAL SUPPORT AND DEPRESSION

Alternatively, it is possible that self-esteem mediates the association between perceived social support and depression. Previous work suggests that perceived social support fosters feelings of belonging, security, and a sense of control over the environment, which may enhance self-esteem, thus reducing the negative effects of stress and serving to protect against negative psychological outcomes (Cohen & Hoberman, 1983; Kawachi & Berkman, 2001). During a significant life transition, such as the adaptation to college, there are fluctuating levels and types of social support, involving separation from family and high school friends, and the pressure to develop new friendship networks (Compas, Wagner, Slavin, & Vannatta, 1986). Thus, for students transitioning through their first year of college, perceived social support may affect self-esteem, which, as noted previously, may then influence depressive symptomatology. Given that the direction of interaction between these two key psychological factors is yet unclear in this population, it is important to explore the influence of perceived social support on self-esteem during this transition, and vice versa.

THE ROLE OF DISENGAGEMENT COPING IN THE ASSOCIATION BETWEEN SELF-ESTEEM AND DEPRESSION

Given the loss of familiar and secure structuring contexts, in addition to other stressors inherent to the transition to college, greater demands are placed on the individual's capacity to cope with stress (Henton, Lamke, Murphy, & Haynes, 1980). Several conceptualizations of coping have been proposed in the literature; a particularly important and widely-supported model is that of engagement and disengagement coping. Engagement coping includes strategies directly addressing the stressor or the related distress, while disengagement coping is aimed at escaping the stressor(s) or related emotions, and includes strategies such as denial, avoidance, and fantasy. This latter strategy is generally ineffective in reducing stress over time, as it ignores the stressor's existence and its eventual consequences, leading to increased stress (acute and chronic) and subsequent increases in depressive symptoms (Holahan et al., 2005; Najmi & Wegner, 2008). Thus, it is not surprising that maladaptive efforts to cope with stress during the college transition frequently lead to depressive symptoms (Seiffge-Krenke & Klessinger, 2000), potentially moderating the association between self-esteem and depression. More specifically, higher levels of disengagement coping may strengthen the association between low self-esteem and depressive symptomatology, while lower levels of disengagement coping may buffer against the negative effects of low self-esteem.

Previous research indicates a link between self-esteem and coping strategy, in that individuals with more confidence and higher self-esteem believe that they have the ability to manage a stressor, and use more problem-focused coping strategies than those with less confidence and lower self-esteem, who see the situation as beyond their control (Chapman & Mullis, 1999; DeLongis, Folkman, & Lazarus, 1988; Kammeyer-Mueller, Judge, & Scott, 2009). In this way, individuals with low self-esteem, with their perceived inability to adapt to life stress, may resort to increased disengagement coping strategies, increasing the risk for negative psychological outcomes such as depressive symptomatology. That is, disengagement coping may mediate the association between self-esteem and depressive symptoms.

CURRENT STUDY

The present study examines how self-esteem, perceived social support, and disengagement coping—three critical components of mental health outcomes in emerging adulthood and particularly in the first-year college experience—affect the development or exacerbation of depressive symptoms over the first semester of college. This research tests five potential models of the associations among these psychosocial constructs. The first model hypothesizes higher levels of perceived social support to buffer the deleterious effect of low self-esteem on depressive symptoms. A second model, using cross-lagged panel modeling, proposes that low self-esteem may predict future depressive symptoms through decreased perceived social support. An alternative path model examines whether low self-esteem mediates the association between low levels of perceived social support and high levels of depressive symptomatology. The fourth model evaluates the moderating influence of high levels of disengagement coping on the relationship between low self-esteem and subsequent increased depressive symptoms. Finally, a fifth model examines the potential mediation pathway of low self-esteem to increased depressive symptomatology through high levels of disengagement coping.

The study attempts to clarify whether self-esteem is associated with depressive symptoms via perceived social support and coping strategies as mediators, and also whether these two variables moderate (buffer or exacerbate) the effect of low self-esteem on depressive symptoms. This study also tests another mediation model to elucidate the effects of self-esteem and perceived social support in the development of depressive symptoms in first-year college students. The longitudinal design makes it possible to prospectively investigate mechanisms that underlie links between levels of self-esteem and depressive symptoms.

METHOD

Participants and Procedure

The current research project was part of a multi-cohort, multi-wave longitudinal investigation of adjustment to college at a large Midwestern university. Students from two consecutive cohorts were in-

vited by email to participate in an online survey, for prize drawings and course credit. At Time 1, one week before the start of the fall semester, all incoming first-year students ($n = 3,960$) were invited to complete the survey, and 2,974 (75.10%) participated. At Time 2, during the final two weeks of the fall semester (approximately 15 weeks after Time 1), participants who completed Time 1 and were still enrolled at the university ($n = 2,820$) were invited to participate, and 2,012 (71.35%) participated. At Time 3, during the final two weeks of the spring semester (approximately 35 weeks after Time 1), students who completed Time 1 and were still enrolled in the university ($n = 2,689$) were invited to complete the final round of the survey, and 1,706 (63.40%) participated.

The final sample included 1,126 participants (M age = 18.49, SD = 0.48; 71.8% female; 72.7% White; 11.6% Asian-American; 7.4% Latino; 2.0% African American, 6.3% other), who completed all 3 waves, including all relevant measures at each timepoint. Survey completers and non-completers did not differ on the assessed psychosocial variables ($ps = 0.061$ – 0.490). Study participants did not differ from nonparticipants in estimate of family income, $t(2877) = 0.13$, $p = .90$, mother's education, $t(3092) = 1.84$, $p = .06$. However, study participants were more likely to be younger, $t(4095) = -2.01$, $p = 0.04$, female, $\chi^2(1) = 35.89$, $p < 0.001$, White, $\chi^2(1) = 19.52$, $p < 0.001$, and report higher high school GPA, $t(4138) = 8.09$, $p < 0.001$.

Measures

Depressive Symptoms. Participants rated their experience of depressive symptoms on the 7-item depression subscale from the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995; e.g., I felt down-hearted and blue). Response options ranged from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time); higher scores reflect higher levels of depressive symptoms. There was strong internal consistency at all three timepoints ($\alpha = 0.86$ – 0.90). One item was thought to overlap with an item on the self-esteem scale (i.e., I felt I wasn't worth much as a person), and was excluded.

Self-Esteem. The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is a 10-item, self-report measure of self-esteem. Participants indicated the extent to which they endorsed statements of self-worth (e.g., "On the whole, I am satisfied with myself" and "All in all, I am inclined to feel that I am a failure") on a 4-point Likert scale

from 0 (strongly disagree) to 3 (strongly agree). The internal consistency for the Rosenberg Self-Esteem Scale in the current sample ranged from 0.80–0.90 across timepoints.

Perceived Social Support. The Social Support Appraisals Scale (SSA; Vaux et al., 1986) is a 23-item, self-report measure of the extent to which participants believe that they are valued by, and involved with, family members, friends, and others. Participants indicated the extent to which they endorsed statements about their social support (e.g., “I am loved dearly by my family” and “My friends don’t care about my welfare”) on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). The current study used the composite score, comprised of a family score, a friend score, and a general others score (O’Reilly, 1995). The internal consistency for the Social Support Appraisals Scale in the current sample ranged from 0.92–0.94.

Disengagement Coping. The Brief COPE (Carver, 1997) is a 28-item scale, with fourteen 2-item subscales assessing various coping strategies. Participants indicated the extent to which they utilized each coping strategy on a 4-point Likert scale from 1 (I usually don’t do this at all) to 4 (I usually do this a lot). The current study focused on both cognitive and behavioral avoidance (Gutierrez, Peri, Torres, Caseras, & Valdes, 2007; Moos & Schaefer, 1993), assessed by combining the following four subscales: denial (e.g., I refuse to believe that it has happened), behavioral disengagement (e.g., I give up the attempt to cope), self-distraction (e.g., I do something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping), and substance use (e.g., I use alcohol or other drugs to make myself feel better). The resulting disengagement coping index (Steinhardt & Dolbier, 2008) demonstrates adequate internal consistency for the current sample ($\alpha = 0.73\text{--}0.78$).

Demographics. At Time 1, participants provided information regarding their gender, parental education, and estimated family income, and gave permission to release other demographic information from the university, including age, ethnicity, and high school GPA.

Data Analysis Plan

Moderation Analyses. The purpose of the study was to determine the effects of self-esteem, perceived social support, and disengage-

ment coping on levels of depressive symptoms at the end of the first year of college. In each model, the dependent variable was depressive symptomatology at the third timepoint (T3), controlling for previous levels of depressive symptomatology (i.e., at the second timepoint; T2). The predictor was self-esteem at the first timepoint (T1), and the moderators, in separate analyses, were: (1) perceived social support at T2, and (2) disengagement coping at T2. Following Baron and Kenney (1986), depressive symptoms at T2 were entered in the first step of the model, followed by the independent variable and the moderator in the second step, and the interaction term in the third step. If the interaction term accounts for significant unique variance, a moderation hypothesis is supported. In the case of significant interactions, simple slopes analyses were conducted to determine the nature of the interactions, following the guidelines of Aiken and West (1991).

Mediation Analyses. Using structural equation modeling (SEM), a cross-lagged panel model (CLPM) was used to test the proposed longitudinal mediation pathways among self-esteem, perceived social support, and disengagement coping on subsequent depression. Following recent recommendations (Cole & Maxwell, 2003; Selig & Preacher, 2009), each variable was allowed to predict its own subsequent occurrence at each later time point (e.g., T1 self-esteem predicts T2 self-esteem, which predicts T3 self-esteem). Therefore, the effect of each predictor was examined while controlling for the effect of the previous time points, allowing for an observation of change in the variables. Notably, this method helps to establish causal pathways among variables. Additionally, based on the suggestions of Preacher and Hayes (2008), the indirect effect for each model was estimated using a bias-corrected bootstrap with 5,000 replications to calculate a 95% confidence interval (CI) for each indirect effect. Per the recommendations of MacKinnon (2008), the disturbance terms on each of the variables were allowed to covary. Each model was tested using MPlus (version 6.12; Muthén & Muthén, 1998–2011).

To evaluate the fit of each model, the chi-square, comparative fit index (CFI), Tucker-Lewis index (TLI), standardized root mean square residual (SRMR), and root mean square error of approximation (RMSEA) were used. The CFI and TLI are incremental fit indices that measure the improvement of model fit in comparison to a baseline model with values greater than .95, indicating acceptable fitting models. Absolute fit indices, SRMR and RMSEA, are mea-

asures to assess how far the model is from perfect fit, with observed values closer to zero indicating improved fit to the data.

RESULTS

Descriptive statistics and correlations among all study variables are presented in Table 1. All study variables correlated with one another.

SELF-ESTEEM TO DEPRESSION: THE MODERATING EFFECT OF PERCEIVED SOCIAL SUPPORT

The analyses conducted to test the moderation model involving self-esteem, perceived social support, and depressive symptomatology were structured to be consistent with the theoretical model. That is, this model used self-esteem and perceived social support from the same timepoint (at T2), to predict depressive symptomatology at T3, controlling for depressive symptomatology from T2. The analyses revealed a significant main effect of T2 self-esteem on later T3 depressive symptoms, as well as a significant main effect of T2 perceived social support on T3 depressive symptoms. However, there was no significant T2 self-esteem \times T2 perceived social support interaction (see Table 2).

SELF-ESTEEM TO DEPRESSION: THE MODERATING EFFECT OF DISENGAGEMENT COPING

This model again assessed the independent variable and moderator at the same timepoint (T2). Analyses used self-esteem and disengagement coping from T2, and depressive symptomatology at T3, controlling for depressive symptomatology at T2. Results revealed a significant main effect of T2 self-esteem on later T3 depressive symptoms. There was also a significant main effect of T2 disengagement coping on T3 depressive symptoms, as well as a significant T2 Self-Esteem \times T2 Disengagement Coping interaction (see Table 3). That is, the relationship between self-esteem and depressive symptomatology is affected by whether people have high versus low disengagement coping.

TABLE 2. Predicting Depressive Symptoms at Time 3 from Self-Esteem at Time 2 and Perceived Social Support at Time 2

	Time 2 Self-Esteem				
	<i>b</i>	β	<i>R</i> ² change	<i>t</i>	<i>p</i>
T2 Depressive Symptoms	0.34	0.35	0.26	10.85	<0.001
T2 Self-Esteem	-0.20	-0.19	0.04	-4.99	<0.001
T2 Perceived Social Support	-0.12	-0.09		-2.73	<0.01
Self-Esteem \times Perceived Social Support	0.08	0.04	0.00	1.41	0.16

As suggested by the regression lines appearing in Figure 1, simple slopes tests revealed that self-esteem at time 1 was significantly associated with depressive symptomatology at time 3 (controlling for depressive symptomatology at time 2) in individuals who reported high levels of disengagement coping, $b = -0.123$, $SE = 0.043$, $p = 0.004$. As can be seen in the figure, individuals who report high in disengagement coping with low self-esteem reported more depressive symptoms. This association was even stronger for those with low levels of disengagement coping, $b = -0.270$, $SE = 0.039$, $p < 0.001$. The resulting main and interaction effects reveal that among those who endorsed low levels of disengagement coping, the link between low self-esteem and depression was strengthened. In other words, the benefits of high self-esteem were less pronounced in the context of high disengagement coping, as depressive symptomatology was increased overall.

SELF-ESTEEM TO DEPRESSION: THE MEDIATING EFFECT OF PERCEIVED SOCIAL SUPPORT

A CLPM including self-esteem, perceived social support, and depression (at all three timepoints) tested the hypothesis that perceived social support mediates the path from self-esteem to depression. The model depicted in Figure 2 indicated good fit to the data, $\chi^2(7 = 18.544; p = 0.010)$, CFI = 0.998, TLI = 0.991, RMSEA = 0.029, and SRMR = 0.012. The direct effect of self-esteem at T1 to depressive symptoms at T3, controlling for depressive symptoms at T1 and T2, was not significant, $b = -0.046$, $SE = 0.030$, $p = 0.130$. The direct effect of self-esteem at T1 to perceived social support at T2, controlling for perceived social support at T1, was significant, $b = 0.535$, $SE = 0.055$, $p < 0.001$. The effect of perceived social support at

TABLE 3. Predicting Depressive Symptoms at Time 3 from Self-Esteem at Time 2 and Disengagement Coping at Time 2

	Time 2 Self-Esteem				
	<i>b</i>	β	<i>R</i> ² change	<i>t</i>	<i>p</i>
T2 Depressive Symptoms	0.33	0.34	0.26	10.09	<0.001
T2 Self-Esteem	-0.20	-0.18	0.05	-5.83	<0.001
T2 Disengagement Coping	0.18	0.14		4.56	<0.001
Self-Esteem \times Disengagement Coping	0.18	0.08	0.01	3.08	0.002

T2 to depression at T3 controlling for depression at both T1 and T2, also was significant, $b = -0.031$, $SE = 0.015$, $p = 0.037$. In this model, the indirect effect of self-esteem on depressive symptoms through perceived social support was significant ($b = -0.017$; $p = 0.045$; 95% CI = -0.039 to -0.001), suggesting the effect of self-esteem at T1 on depression at T3 is partially accounted for by the indirect effect of decreased self-esteem contributing to increases in perceived social support, which in turn contributes to increases in depressive symptoms.

PERCEIVED SOCIAL SUPPORT TO DEPRESSION: THE MEDIATING EFFECT OF SELF-ESTEEM

The above CLPM with self-esteem, perceived social support, and depression (Figure 2) simultaneously tested the indirect path between perceived social support at T1 and depressive symptoms at T3 through changes in self-esteem at T2. The final cross-lagged panel model suggested good fit to the data (see previous section). The direct effect of perceived social support at T1 predicting self-esteem at T2, controlling for self-esteem at T1, was significant, $b = 0.043$, $p = 0.001$. In addition, self-esteem at T2 predicting depression at T3 controlling for depression at T1 and T2 was also significant, $b = -0.101$, $p = 0.002$. In this model, the indirect effect of perceived social support on depressive symptoms through self-esteem was significant ($b = -0.004$; $p = 0.028$; 95% CI = -0.012 to -0.001), thereby suggesting that the effect of perceived social support to depressive symptoms is partially mediated by self-esteem.

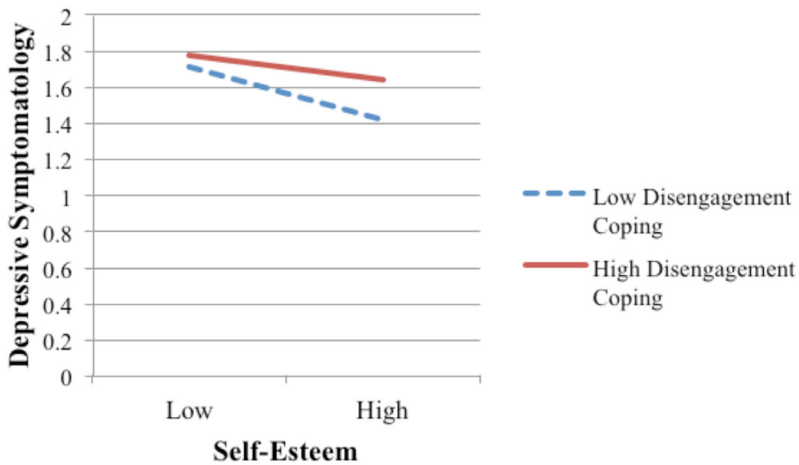


FIGURE 1. Interaction between T2 Self-Esteem and T2 Disengagement Coping on T3 Depressive Symptomatology.

SELF-ESTEEM TO DEPRESSION: THE MEDIATING EFFECT OF DISENGAGEMENT COPING

A CLPM including self-esteem, disengagement coping, and depression (at all three timepoints) tested the hypothesis that disengagement coping mediates the path from self-esteem to depression (see Figure 3). The model indicated good fit to the data, $\chi^2(7 = 12.126; p = 0.097)$, CFI = 0.999, TLI = 0.996, RMSEA = 0.019, and SRMR = 0.010. In this model, the effect of self-esteem at T1 predicting disengagement coping at T2, controlling for disengagement coping at T1, was significant, $b = -0.112$, $SE = 0.028$, $p < 0.001$. In addition, disengagement coping at T2 significantly predicted depression at T3, controlling for depression at T1 and T2, $b = 0.119$, $SE = 0.033$, $p < 0.001$. In this model, the indirect effect of self-esteem on depressive symptoms through disengagement coping was significant ($b = -0.013$; $p = 0.007$; 95% CI = -0.025 to -0.006). These findings suggest the effect of self-esteem at T1 on depression at T3 is partially accounted for by the indirect effect of decreased self-esteem leading to increases in disengagement coping, in turn leading to increases in depressive symptoms.

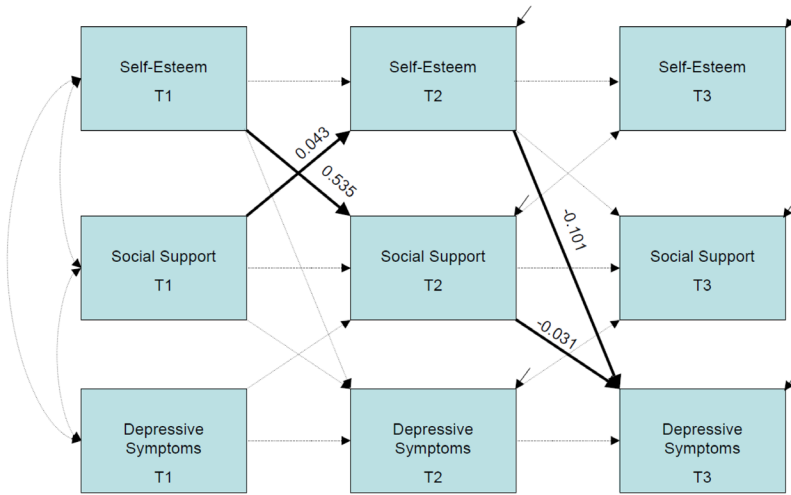


FIGURE 2. Cross-lagged panel model depicting the influence of social support and self-esteem on depressive symptoms.

DISCUSSION

Overall, findings from the present study suggest that self-esteem may work through both perceived social support and disengagement coping to affect depressive symptomatology during the first year of college. There appears to be a bidirectional association between self-esteem and perceived social support, in that level of self-esteem may positively predict perceived social support, and vice versa. Results also showed a strong main effect of disengagement coping on depressive symptoms, with high disengagement coping predicting increased depressive symptoms. Moderation analyses found that the association between self-esteem and depressive symptomatology was stronger in the context of low disengagement coping. High levels of disengagement coping appeared to temper the advantages of high self-esteem, and levels of depressive symptomatology were higher overall.

Contrary to hypotheses, perceived social support did not moderate the association between self-esteem and depressive symptoms. However, perceived social support was found to mediate the association between self-esteem and depressive symptoms. Disengagement coping was found to moderate the relationship between

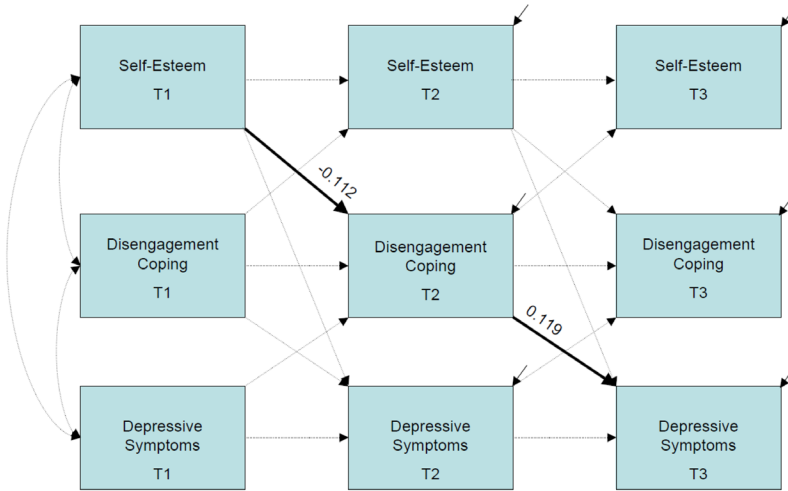


FIGURE 3. Cross-lagged panel model depicting the influence of self-esteem on depressive symptoms through the indirect effect of disengagement coping.

self-esteem and depressive symptomatology. Specifically, the negative association between self-esteem and depressive symptoms was stronger at lower levels of disengagement coping, where self-esteem accounts for more of the variability in depressive symptoms. In the context of high disengagement coping, depressive symptoms are increased in both low and high self-esteem groups, and the benefits of high self-esteem appear to be mitigated. Disengagement coping was also found to mediate the relation between self-esteem and depressive symptomatology. Lastly, consistent with the hypotheses of the alternative model, self-esteem was found to mediate the association between perceived social support and depressive symptoms. These findings suggest that perceived social support and disengagement coping play significant and transactional roles, interacting with self-esteem in various ways to predict depressive symptoms.

THE ROLE OF SELF-ESTEEM AND PERCEIVED SOCIAL SUPPORT IN PREDICTING DEPRESSIVE SYMPTOMS

Although the current study did not find perceived social support to moderate the relation between self-esteem and perceived social support, the main effect of perceived social support on future de-

pressive symptomatology suggests that perceived social support is protective against the exacerbation of depressive symptoms. This indicates that while perceived social support may have a direct effect on adjustment to the first year of college by buffering against the stress of the college transition, it may not protect against the effects of low self-esteem. The main effect is consistent with the literature, which has demonstrated that perceived adequacy of social support is directly related to reported severity of psychological symptoms (Andrews et al., 1978; Procidano & Heller, 1983).

As predicted, perceived social support was found to mediate the association between self-esteem and depressive symptoms. This suggests that self-esteem may exert an impact through perceived social support to affect later levels of depressive symptomatology. This is logical, given the various ways in which self-esteem may affect an individual's perception of social support. Individuals with high self-esteem consider themselves likeable and successful in many domains, including interpersonal relationships (Riggio, Throckmorton, & DePaola, 1990; Walster, 1965). They are thus more likely to report positive social interactions and adequate social support. On the other end of the spectrum, individuals with low self-esteem often have distorted, negative perceptions of themselves, others, and relationships. Individuals with low self-esteem may seek to confirm their negative self-views, focusing their attention on others' negative comments, retaining more detailed memories about negative interpersonal events, or even eliciting negative reactions from others (Swann & Read, 1981; Swann et al., 2003). These actions may have a deleterious effect on relationship quality and negatively impact both perceived and actual social support.

Relatedly, individuals with low self-esteem also may be more sensitive to rejection (Li et al., 2012), and have an overly negative view of themselves and others (Baumeister, 1993). They may excessively seek reassurance about their personal worth from others, which would eventually become exasperating for peers, increasing the risk of being rejected by their social support network (Joiner, Katz, & Lew, 1999). These examples illustrate ways in which individuals with low self-esteem may utilize maladaptive cognitive and behavioral strategies, which may affect their subsequent perceived social support, thereby increasing depressive symptomatology. Together, these findings indicate that during the first year of college, self-esteem is a particularly important factor in the exacerbation of

depressive symptoms, and may work through the adequacy of and satisfaction with social support networks.

ALTERNATIVE MODEL: THE PATHWAY FROM PERCEIVED SOCIAL SUPPORT TO DEPRESSIVE SYMPTOMATOLOGY THROUGH SELF-ESTEEM

This study also analyzed an alternative model, to determine the direction of association between self-esteem and perceived social support. Consistent with hypotheses, self-esteem was found to mediate the association between perceived social support and depressive symptomatology. Increased perceived social support was associated with higher subsequent levels of self-esteem, which predicted decreased levels of depressive symptoms. These findings may be explained by the fact that the transition to college is imbued with considerable social stress. Students must adapt to being more independent from parents and family, adjust to being away from the comfort of high school friends, and make new friends (Dyson & Renk, 2006). With new and dynamic social groups, there is increased pressure to find similar groups of peers, and increased risk of interpersonal conflict. Furthermore, research has shown emerging adulthood to be a critical stage for identity development, wherein one's self-esteem is only just beginning to show continuity over time (Arnett, 2000).

In conjunction with the increased social stress and society's emphasis on the importance of social connections during this time period, it is logical that self-esteem might fluctuate in response to changes in perceived social support. Perceived social support also may produce positive psychological states, including confirmation of self-worth, increased feelings of belonging and security, and increased self-esteem (Cohen & Hoberman, 1983; Kawachi & Berkman, 2001).

THE ROLES OF SELF-ESTEEM AND DISENGAGEMENT COPING IN PREDICTING DEPRESSIVE SYMPTOMS

The present study found that both self-esteem and disengagement coping affected future levels of depressive symptomatology. Results

suggest that the negative relation between self-esteem and depressive symptomatology is stronger for individuals who endorse low levels of disengagement coping. Within the context of high disengagement coping, depressive symptomatology is increased overall, and the association between self-esteem and depressive symptoms is attenuated. Furthermore, the main effects of disengagement coping and self-esteem on future depressive symptomatology appear additive. Both low self-esteem and high disengagement coping individually predict an increase in depressive symptoms, and together, they have a stronger association with depressive symptomatology. It appears that disengagement coping is a strong risk factor for depressive symptomatology for all individuals, leaving those with low self-esteem particularly vulnerable.

Overall, these findings support previous research indicating that disengagement coping is a maladaptive strategy when faced with stress. This is likely due to the fact that it does not address the stressor, but rather allows the problem to build and become more intimidating with time. The development of this maladaptive coping strategy may be due to the initial relief of negative emotions as the individual avoids the stressor. The avoidance is thus reinforced through the initial alleviation of negative affect (Kim, Shimojo, & Doherty, 2006). However, without action, these stressors are likely to persist, and the chronic strain can lead to increased negative affect. Additionally, to successfully avoid a stressor, one must try not to think about it. However, research suggests that suppressing stressful thoughts paradoxically leads to rumination, which predicts increases in depressive symptoms (Lucian, 2009; Watkins & Moulds, 2009). Moderation analyses indicate that disengagement coping may weaken the negative association between self-esteem and depressive symptoms (Figure 1). That is, in the context of low disengagement coping, individuals with high self-esteem are considerably less likely to report depressive symptoms than those with low self-esteem; however, in the context of high disengagement coping, the association between self-esteem and depressive symptomatology is mitigated, as the level of depressive symptomatology is increased overall, regardless of self-esteem.

As predicted, disengagement coping mediated the relation between self-esteem and depressive symptoms. It appears that individuals with low self-esteem are more likely to endorse higher levels of disengagement coping, subsequently predicting increased depressive symptoms. This is consistent with past research, which

has found individuals with low self-esteem endorse disengagement coping strategies more often than those with high self-esteem (Chapman & Mullis, 1999; Holahan & Moos, 1987; Kammeyer-Mueller et al., 2009). Inherent in low self-esteem is a feeling of incompetence or inefficiency. Those with low self-esteem often view themselves as inferior to others in exacting change, and consequently, they view stressors to be beyond their control. As a result, these individuals may choose to avoid the situation, in order to mitigate the stress (in the short-term), while those who believe they can manage the stressor and change the situation may choose to tackle the problem directly (DeLongis et al., 1988).

Together, these findings indicate that during the first year of college, low self-esteem predicts higher levels of disengagement coping, resulting in increased depressive symptomatology. Results also suggest that the association between low self-esteem and increased depressive symptomatology is stronger in the context of low disengagement coping. This may seem counterintuitive initially, but given the strong negative effect of disengagement coping, this finding is not surprising. High disengagement coping might predominate the advantages of high self-esteem, rendering emerging adults more vulnerable to developing depressive symptoms. High disengagement coping and low self-esteem appear to have an additive effect, in that these two characteristics together most strongly predict depressive symptoms.

CONTRIBUTIONS AND LIMITATIONS

This study examined the effects of self-esteem on depression longitudinally, following a sample of students through their first year of college, and compared the roles of two critical variables during this transition. The longitudinal nature of the study allowed for more comprehensive and accurate analyses of associations between variables. It should also be noted that the current study had a large sample size, which has the power to detect very small effects. Several limitations of the study also should be considered. First, this study was based solely upon self-report measures; future studies would benefit from the inclusion of multiple informants (e.g., friends, parents) and multiple measurement modalities (e.g., self-report, interview, behavioral) to assess the various constructs. Additionally, coping was considered to be a dispositional trait variable, while

more recent literature has shown that coping is a more complex and dynamic construct, likely also having more flexible, situational state components (Schwarzer & Schwarzer, 1996).

The present study's use of CLPM modeling allows for stronger inference regarding the direction of causation (Selig & Preacher, 2009). However, this type of model does not address intraindividual change or individual differences within this change. Finally, the overall sample of first-year college students reported relatively low levels of depression. This was illustrated by the relatively small range of depressive symptoms toward the low end of the spectrum in the current sample (Range from 1–4; $M = 1.57$; $SD = 0.59$). Moving forward, studies would benefit from samples with a more normally-distributed range of depressive symptoms.

IMPLICATIONS AND APPLICATIONS

The findings from this prospective study have important implications within clinical psychology research, as well as practical applications in college environments. In order to establish efficacious prevention and intervention programs targeting the pathways between self-esteem and depressive symptomatology, it is important to better understand theoretically-relevant factors that may mediate and/or moderate this link. This study provides additional empirical support for the positive association between disengagement coping and depressive symptomatology. While still in the early stages of understanding this association, these findings suggest that disengagement coping may predict higher levels of depressive symptoms in individuals with high or low self-esteem. This can inform therapeutic strategies employed by campus wellness centers when treating students with depressive symptoms. It may be valuable to integrate techniques into therapy that address the avoidance of stressors. For example, Behavioral Activation, an empirically-supported treatment for depression, aims to work against passivity and the urge to disengage, and explores the individual's environment to find positive reinforcement (American Psychiatric Association, 2010; Kanter, Callaghan, Landes, Busch, & Brown, 2004). Even more simply, it may be beneficial to incorporate a psychoeducational piece into therapy with students, instructing them of important differences among coping styles and their associated outcomes.

The findings of this study suggest that self-esteem and perceived social support are associated in a bidirectional manner. That is, the support of friends and peers is one possible pathway through which self-esteem contributes to depression in students transitioning into college, and a mechanism through which prevention and intervention programs might promote positive mental health for these youth. For example, it may benefit institutions to address social issues in new student orientations and promote a variety of easily-accessible extracurricular activities and student organizations, in order to promote a feeling of community and encourage stable and meaningful interpersonal relationships. Additionally, understanding the vital roles of perceived social support and self-esteem in predicting depressive symptoms may be relevant to therapy practices. Techniques from Interpersonal Psychotherapy, another empirically-supported treatment, may be effective to help students to adjust to role transitions and manage social and interpersonal stressors (American Psychiatric Association, 2010; Klerman, Weissman, Rounsaville, & Chevron, 1984). More generally, and extending existing models of self-esteem and depression, the findings of this prospective study emphasize the importance of perceived social support as a mechanism through which self-esteem affects depressive symptoms, as well as the notable harm of disengagement coping strategies. These findings have important implications for understanding—and promoting—lifelong adjustment.

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