2018

Peer Mentor Characteristics that Predict Supportive Relationships with First-Year Students: Implications for Peer Mentor Programming and First-Year Student Retention [post-print]

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Published online first: *Journal of College Student Retention: Research, Theory & Practice* on May 22, 2016 as doi:10.1177/1521025116650685

Author Note

The authors wish to thank David Reuman, Ross O'Hara, and Jonathan Mattanah for their assistance with this manuscript. We also wish to thank the peer mentors who participated.

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Abstract

Peer mentoring programs frequently are implemented on college campuses to enhance first-year college student retention; however, few studies have examined characteristics of peer mentors that are associated with more supportive mentor-mentee relationships, leaving college personnel with a limited understanding of how to improve these vital programs. Accordingly, in this prospective study, we examined whether mentors' attachment style and self-efficacy to mentor predicted peer mentors' (*n*=76) or mentees' (*n*=999) ratings of mentor-provided support. Results showed that mentor self-efficacy mediated the relation between an avoidant attachment style and mentor-reported support; that is, peer mentors with a more avoidant attachment style reported lower self-efficacy to mentor and, in turn, endorsed providing lower levels of support for mentees. Mentor-mentee contact, however, was the only predictor of *mentees'* ratings of mentor support. Future research should aim to extend these preliminary findings so as to inform the selection, training, and supervision of peer mentors in college settings, with the ultimate goal of enhancing first-year student retention.

Keywords: peer mentoring; mentor self-efficacy; mentor attachment; mediational analysis; hierarchical linear modeling

Peer Mentor Characteristics that Predict Supportive Relationships with First-Year Students: Implications for Peer Mentor Programming and First-Year Student Retention

Twenty-eight percent of full-time college students at four- or two-year institutions do not return the following year (Knapp, Kelly-Reid, & Ginder, 2012), suggesting that retention is a key concern at many institutions of higher education. In order to address retention concerns, one strategy frequently employed is the establishment of collegiate peer mentoring programs, whereby more experienced students assist incoming students (mentees) academically and/or socially one-on-one, or in groups, for the purpose of promoting a smoother transition to college (Heirdsfield, Walker, Walsh, & Wilss, 2008; Terrion & Leonard, 2007). Peer mentors may provide academic assistance by helping mentees review course material, improve their writing, prepare for exams, and connect with campus resources (e.g., library). Mentors also may facilitate social adjustment by familiarizing mentees with campus events and student life resources and planning social events that encourage the development of camaraderie among mentees (see Heirdsfield et al., 2008 for a review).

The specific activities undertaken and expected outcomes in a mentoring program largely depend on the theoretical or conceptual model on which it is based. As noted by Gershenfeld (2014), over the past five years, the literature has reflected a wide variety of theories and conceptual models underlying college mentoring, including social capital and social networks, feminist and network models, and student approaches to learning. One model in particular, Tinto's academic and social integration theory, continues to serve as a foundation for many collegiate mentoring programs (Gershenfeld, 2014). Specifically, Tinto's model suggests that students who are committed to their academic goals and to the institution and who feel integrated into the academic and social fabric of the institution are less likely to leave prematurely

(Gershenfeld, 2014; Jacobi, 1991; Tinto, 1975). Peer mentors may be especially good candidates for facilitating mentees' academic and social integration; as aforementioned, they can provide direct academic assistance, but also can help mentees develop a sense of belonging at the institution by connecting them with other students and campus-based resources and activities (Authors, 2012). Although peer mentors often do not supplant more formal student support mechanisms (Hill & Reddy, 2007), their high level of accessibility, approachability, and relatability make them an important complementary support system to new students (Alexitch, 2006; Kram & Isabella, 1985).

Surprisingly, in spite of the frequency with which peer mentor programs have been implemented, there has been limited systematic research investigating the characteristics of peer mentors that predict their ability to engage with, and effectively assist first-year students (Terrion & Leonard, 2007). Given the importance of improving retention on college campuses, a better understanding of how mentor characteristics influence their ability to support incoming students is crucial to inform mentor selection, training, and supervision and to further enhance the effectiveness of peer mentor programs. Accordingly, the current study sought to elucidate the extent to which more distal (i.e., attachment style) and proximal (i.e., self-efficacy) characteristics of peer mentors predicted the amount of contact and support they provided to first-year students during the transition to college. More specifically, we investigated whether mentor attachment style had an indirect effect on mentor-provided support through mentor self-efficacy. The program under study was a group mentoring program most closely aligned with Tinto's (1975) model of academic and social integration. As such, we focused on mentor characteristics (i.e., attachment style, self-efficacy) that we expected would affect a mentor's ability to cultivate relationships with a wide range of students and across multiple domains (i.e.,

academic, social, personal).

Literature Review

Mentor attachment style. Attachment theory purports that early child-caregiver relationships shape children's expectations regarding the extent to which others can be relied on in times of need (Bowlby, 1988; Hazan & Shaver, 2004). Children who are insecurely attached, or those who do not have a close and nurturing relationship with a caregiver, not only have difficulty trusting others, but also may be less compassionate and nurturing towards others who are experiencing distress (Bowlby, 1988). This theory is a useful framework for understanding the dynamics of mentoring relationships given that mentoring is characterized by a relationship in which one party relies on another (Wang, Noe, Wang, & Greenberger, 2009). Specifically, mentors who identify with an anxious-ambivalent attachment style (a form of insecure attachment), which is characterized by "an exaggerated desire for closeness" but also a "lack [of] confidence in others' availability and likely responsiveness to their needs" (Collins, Guichard, Ford, & Feeney, 2004, p. 199), may exhibit more invasive or controlling tendencies and thus, be perceived as overbearing or nagging by their mentees (Gormley, 2008). These mentors also might cultivate more dependence in their mentees and feel threatened if their mentees pursue tasks independently; as a result, these mentors might not be as effective at empowering their mentees. Mentors with an anxious-ambivalent style also may have difficulty comforting their mentees in stressful situations on account of their own emotional dysregulation (Gormley, 2008).

Mentors who espouse an avoidant attachment style, another form of insecure attachment characterized by a reluctance to engage in close relationships and lack of emotionality (Collins et al., 2004), may find it equally challenging to bond with mentees, but for different reasons. Specifically, these mentors may be less available and responsive to their mentees on account of

deficits in social competencies such as conflict resolution (Corcoran & Mallinckrodt, 2000). These mentors may be viewed as "detached", "rejecting", or "defensive" by their mentees, thereby making the mentor-mentee bonding process more challenging (Gormley, 2008, p. 54). Similar to mentors with anxious-ambivalent tendencies, those with avoidant tendencies may have difficulty promoting the development of autonomy in mentees because they do not provide mentees with the support and security needed for personal growth (Gormley, 2008).

Several empirical studies have demonstrated the importance of mentor attachment style in predicting mentoring outcomes in both academic and non-academic settings. For example, Wang et al. (2009) sampled mentors participating in a 2-year mentoring program in China and found that mentors with a more anxious or avoidant attachment style reported lower relationship satisfaction with their mentees. Further, when predicting willingness to mentor in the future, Wang et al. found evidence of an interaction, such that mentors lowest on anxiety *and* avoidance were most willing to mentor in the future compared to those reporting low avoidance and high anxiety, low anxiety and high avoidance, and high anxiety and high avoidance.

Other studies, however, suggest that the relation between mentor attachment style and mentoring outcomes may be more complex. Alfonso, Cavell, and Hughes (2001) examined the effects of mentor attachment style in the context of a mentoring program for aggressive school-age children. They found that college student mentors with a more avoidant or anxious-ambivalent attachment style reported lower relationship quality (i.e., amount of "satisfaction, intimacy… affection, admiration, and reliable alliance") with their mentees; however, these forms of insecure attachment only were predictive of lower relationship quality in the presence of high mentor-reported conflict in the relationship (p. 10). Interestingly, neither mentor attachment nor the interactions between mentor attachment and mentor-reported conflict

predicted *mentees'* ratings of relationship quality, suggesting that mentor attachment style may be more closely associated with *mentors*' perceptions of relationship conflict and quality. In a similar and more recent study using a similar measure of relationship quality, Faith, Fiala, Cavell, and Hughes (2011) did not find any bivariate associations between mentor attachment style at baseline and mentors' or mentees' ratings of relationship quality after a semester of mentoring, suggesting that it may be necessary to assess dynamics of the mentor-mentee relationship (e.g., conflict) alongside mentor attachment style in order to adequately capture the influence of mentor attachment style. Taken together, the above studies suggest that mentors with an insecure attachment style may experience lower relationship quality with their mentees. Less is known, however, about the mechanisms through which a mentor's attachment style influences relationship quality. Since research has shown that, barring significant negative life events, attachment style is relatively stable (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000), it would be beneficial to identify more proximal influences on mentor-mentee relationship quality, such as mentor self-efficacy, that are shaped by attachment tendencies.

Mentor self-efficacy. Self-efficacy is an individual's belief in his/her capability to be successful in certain circumstances (Bandura, 1997). It is shaped by four key influences, namely (a) performance accomplishments, or mastery experiences, (b) vicarious experience, or observing a model coping successfully with a challenging circumstance, (c) verbal persuasion, which involves instilling confidence that one can successfully surmount a challenge, and (d) equanimity, since emotional arousal may preclude one from coping effectively in a challenging situation (Bandura, 1977). Possessing a high level of self-efficacy for a particular task increases one's chances of being successful because it enhances the likelihood that one will set realistic and proximal goals and persevere in the face of challenge (Bandura, 1997). With respect to

mentoring specifically, mentors with high self-efficacy may be more likely to initiate regular contact with mentees, set specific goals with respect to activities and skills transmission, and persist in the face of relationship difficulties or conflict (Ferro, DeWit, Wells, Speechley, & Lipman, 2013; Parra, DuBois, Neville, Pugh-Lilly, & Povinelli, 2002).

Three separate studies on the Big Brothers Big Sisters (BBBS) program point to the critical role of mentor self-efficacy as a predictor of mentor-mentee relationship quality. Parra et al. (2002) found that higher mentor self-efficacy was associated with a greater number of perceived benefits of the mentoring relationship one year later, as reported by both mentors and mentees. In addition, structural models revealed that for mentors, higher mentor self-efficacy predicted greater mentor-mentee contact, engagement in more program-relevant activities, and fewer relationship obstacles. Interestingly, in the model focused on mentee-reported data, higher mentor self-efficacy only predicted greater relationship closeness, suggesting that mentor efficacy may be a greater predictor of the affective component of the mentoring relationship for mentees, at least in this study.

Two recent and larger BBBS studies built on Parra et al.'s work and highlighted additional correlates of mentor self-efficacy. Martin and Sifers (2012) found that, along with mentors' perceptions of the quality of training received, higher levels of mentor confidence predicted mentor satisfaction. However, because this study's measure of confidence was constrained to one item, it is unclear how well it represented the construct of self-efficacy. In response to the dearth of validated mentor self-efficacy scales, Ferro et al. (2013) developed and validated the *Mentor Self-Efficacy Scale* (MSES). Encouragingly, their measure demonstrated acceptable convergent and predictive validity and reliability, as evidenced by significant positive correlations between mentor self-efficacy and mentor reports of relationship quality (i.e., feelings

of closeness and engagement behaviors), respectively. However, mentor self-efficacy did not predict mentee or parent reports of relationship quality, nor did mentor self-efficacy predict follow-up mentor reports of relationship quality when control variables such as contact and baseline engagement were accounted for (Ferro et al., 2013). That mentor self-efficacy appears to have different predictive validity for mentees' and mentors' perceived relationship outcomes not only is consistent with Parra et al.'s (2002) findings, but also with Alfonso et al.'s (2001) findings, where attachment was a predictor of *mentor,* but not mentee-reported outcomes.

In another study of high school mentors paired with mentees in elementary school, Karcher, Nakkula and Harris (2005) not only demonstrated that mentor self-efficacy predicted mentors' perceptions of relationship quality (i.e., feelings of closeness and trust), but also showed that there was an indirect effect of mentees' risk status on mentors' perceptions of relationship quality via mentor self-efficacy. That is, self-efficacy appeared to be more proximally related to mentoring outcomes as compared to mentees' risk status. In a longer-term follow-up study, Karcher et al. (2005) found that mentor self-efficacy at baseline predicted mentee reports of close attention and mentor reports of relationship quality after two, but not six months of mentoring. These findings suggest that more longitudinal research on mentor self-efficacy is needed to ascertain the extent to which mentor self-efficacy is a unique and prospective predictor of relationship outcomes, as opposed to a factor biasing mentors' perceptions of relationship quality (Ferro et al., 2013)

Rationale for the Current Study

As we are only aware of only one study (Rice & Brown, 1990) that examined perceived self-efficacy to mentor in a college setting (and this study examined self-efficacy as a dependent variable, as opposed to independent variable) additional research is needed to determine whether

mentor self-efficacy has any predictive value for peer mentor-provided support in college settings. Further, given the lack of outcome research on peer mentor characteristics that predict close, supportive relationships with first-year student mentees, the current study sought to determine whether mentor attachment style had an *indirect* effect on mentors' perceptions of the mentoring relationship via mentor self-efficacy. We believe an investigation of individual-level mentor characteristics that predict perceived amount and quality of mentor support is of critical importance given that some collegiate mentors are inconsistent in their engagement with mentees (Lee, Germain, Lawrence, & Marshall, 2010) and, to our knowledge, few studies have explored factors that are associated with more inconsistent or ineffective *peer* mentoring. This research is an important contribution to the literature, as it may help to explain why some peer mentoring programs have been more/less effective at enhancing college student retention.

Although self-efficacy has not been examined as a mediator of mentor attachment, prior research has shown that among college students, anxious-ambivalent attachment was associated with lower social self-efficacy and avoidant attachment with less self-disclosure (Wei, Russell, & Zakalik, 2005). These outcomes are similar to those assessed in measures of mentor self-efficacy (e.g., communicating effectively, becoming a role model). Moreover, we would expect a relation between attachment and mentor self-efficacy on account of the fact that attachment security has been shown to predict greater confidence in one's coping skills and a greater willingness to seek social support when faced with challenges (Berant, Mikulincer, & Florian, 2001). Finally, since emotional arousal is one of the key factors influencing self-efficacy (Bandura, 1977) and people who are more securely attached evidence lower negative emotionality in the face of stress (see Diamond & Hicks, 2004 for a review), we would expect that more securely attached mentors would feel more confident addressing a wide-range of issues and potential challenges related to

mentoring on account of this lower reactivity.

Three specific hypotheses were advanced: First, we expected that mentors with a more anxious-ambivalent or avoidant attachment style would report a lower level of support for first-year students, and that this effect would be mediated by lower mentor self-efficacy. Second, it was expected that mentors who reported one or more of the following characteristics: a more anxious-ambivalent attachment style, a more avoidant attachment style, and/or lower self-efficacy, would be rated by their *mentees* as less supportive. Finally, given that greater mentor-mentee contact predicted better outcomes in a peer mentor intervention (Rodger & Tremblay, 2003) and mentees' perceived support from their mentor (Authors, 2012), we hypothesized that greater contact with a mentor would predict higher mentor support ratings from mentees.

Method

Program Description

Peer mentors were second (16%), third (20%), and fourth-year (64%) college students who worked collaboratively with faculty instructors to support first-year seminar courses at a small liberal arts college in the northeastern United States. For most seminars there was one peer mentor, but for curricular reasons, there were two peer mentors for 9 of the 67 seminars. All first-year students were required to enroll in a first-year seminar, which was a one-semester course with an average of 16 students focused on developing students' writing skills. Mentors applied and were chosen based on both academic qualifications (i.e., a strong academic record, excellent writing and communication skills, a high level of proficiency with research and problem-solving skills) and personal qualities (i.e., maturity, sensitivity, and leadership potential). Mentors earned course credit and a letter grade for serving in this role.

Mentors' responsibilities were consistent with three of the four functions of college

mentoring identified by Nora and Crisp (2007). Specifically, mentors provided *academic subject knowledge support*, which took various forms, including: reviewing students' writing; helping students to learn and review the seminar content; and/or helping students access support in other courses if they were experiencing difficulty. Mentors also provided *psychological/emotional support*, which typically involved listening to challenges students were facing in adjusting to college and helping them to problem-solve around personal or social problems. Because this was a group mentoring program, mentors also were responsible for planning social events to cultivate a sense of belonging and connectedness among seminar participants. Finally, mentors served in the *role model* function, in that they were expected to demonstrate a high level of academic engagement, curiosity, and conscientiousness, while also self-disclosing challenges they experienced in their own adjustment to college (Nora & Crisp, 2007). Although mentors did not explicitly serve in the fourth capacity identified by Nora and Crisp (2007), *goal setting and career paths*, their responsibilities included assisting students with their selection of classes for the spring semester and, in some cases, connecting the students with more advanced students in a particular major. Mentors developed and refined their skills in the above areas during three days of training before the semester. During the fall semester, mentors participated in a biweekly colloquium facilitated by first-year program administrators in which they (a) learned additional strategies for supporting students academically and socially, and (b) engaged in collaborative problem solving with other mentors.

Participants

Mentors. Two consecutive cohorts of peer mentors and first-year students were included to maximize the size of our sample. Mentors from Years 1 and 2 did not differ on any of the study variables except for avoidant attachment, in which Year 1 mentors had a higher mean score

(M = 3.17, SD = 1.14) than Year 2 mentors (M = 2.64, SD = 0.72) [$t(74) = 2.48$, $p<.05$]. Seventy-six of the 80 first-year mentors (95%) participated in the baseline survey portion of the study. One mentor from Year 1 was not present for data collection and three mentors from Year 2 elected not to participate, so these mentors (and their corresponding mentee ratings) were excluded. Seven mentors (1 from Year 1, 6 from Year 2) did not complete the end-of-semester survey, but since they provided attachment and self-efficacy data at baseline, they were retained in the hierarchical linear modeling analyses that predicted mentee support ratings from mentor characteristics. These non-completers did not differ from completers on any of the study variables. Because four mentors who served in Year 2 also served in Year 1, one record from each of these mentors (and the corresponding mentee ratings) was deleted randomly to ensure that no mentor was counted twice. The final sample of mentors (n=76) was 67% female, the mean age was 20.39 (SD = 0.89), and the race/ethnicity of the sample was: 79% Caucasian, 6% Asian American, 3% African American, 8% Latino/a, and 4% other.

Mentees. After accounting for the mentee records that had to be excluded for the reasons above, a total of 1070 corresponding first-year student ratings from Years 1 and 2 were eligible for inclusion; 999 students completed ratings (n=518 from Year 1; n=481 from Year 2) of their mentor, yielding an overall response rate of 93%. Since the first-year student ratings were collected anonymously, we could not compare the demographic characteristics of responders and non-responders. However, given that the majority of the first-year class evaluated their mentor, the sample's demographic characteristics likely were very similar to these two cohorts of first-year students at the College: 49% female; 66% Caucasian, 9% non-resident alien (i.e., students on a visa - excludes dual citizens and US citizens raised abroad), 6% African American, 6% Latino/a, 4% Asian American, 4% multiracial, and 5% unknown.

Attachment style. The 17-item Adult Attachment Questionnaire (AAQ; Simpson, Rholes, & Phillips, 1996) was used to assess mentors' relational style with friends and romantic partners. The first subscale of the AAQ consists of 8 items and assesses avoidance, or the extent to which an individual holds negative views of others and avoids intimacy (α=.82; "I'm not very comfortable having to depend on other people."). The second subscale, anxious-ambivalence, consists of 9 items and assesses the extent to which an individual is overly preoccupied with issues of abandonment and his/her partner's level of commitment (α=.78; "Others are often reluctant to get as close as I would like."). A 7-point Likert-type response scale was used (1=*strongly disagree;* 7=*strongly agree)*, with higher scores on the two subscales denoting greater avoidance and anxiety-ambivalence, respectively.

Self-efficacy. The 47-item Mentoring Confidence Inventory (Sanft, Jensen, & McMurray, 2008) assessed mentors' skills and cognitions across a wide range of areas, including confidence in their ability to (a) serve as a peer mentor ("I am prepared to balance peer mentoring responsibilities with my other life responsibilities"), (b) facilitate communication ("I have effective listening skills"), (c) become a role model ("I am comfortable being honest about my strengths and weaknesses"), (d) utilize campus resources ("I am familiar with academic resources available on campus, e.g., Writing/Math Centers") and (e) facilitate learning ("I know how to use different facilitation techniques for different types of learners"). A 6-point response scale was used 0 = *not at all confident* to 5 = *completely confident*, with higher mean scores denoting higher levels of self-efficacy (α=.97).

Mentor support - mentee ratings. We adapted the College Student Mentoring Scale (CSMS; Crisp, 2009) to assess first-year students' perceptions of how supported they felt by their mentor following the semester-long seminar. Specifically, we retained the items pertaining

to *psychological and emotional support*, *academic subject knowledge support*, and *existence of a role model* subscales, but modified three of the items so that they referred to the first-year or seminar course explicitly (e.g., "S/he provided support for the work I did *in my first-year seminar*"). We added nine items pertaining to advising (e.g., "She/he helped me to consider possible majors and/or career paths."), closeness (e.g., "S/he expressed concern about my well-being"), and approachability (e.g., "S/he was available and approachable outside of the seminar.") because of their relevance to our program. CSMS items pertaining to *degree and career support* were not included because they were not aligned with our mentors' duties. Mentees responded on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*). We created a total CSMS score [i.e., mean of the 27 scale items (α=.98)] given the substantial correlations observed among the CSMS subscales in Crisp's (2009) analysis (*r*s = .88 - .97) and because a second-order construct of "mentoring" emerged when Crisp (2009) loaded the subscales onto one factor in a higher-order factor analysis.[1]

Mentor support - mentor ratings. A parallel form of the CSMS for first-year mentors was created so that mentors' and mentees' reports would be comparable. Mentors were instructed to consider how they were perceived by their mentees *overall* (e.g., "My mentees looked up to me regarding college-related issues") for each of the 27 questions. The reliability of the overall scale (α=.91) was excellent.

Mentor-mentee contact. Mentees noted the frequency with which they had contact with their mentor outside the seminar using a 5-point scale: 1 = *Never*; 2 = *1-2 times*; 3 = *3-5 times*; 4 = *6-8 times*; 5 = *More than 8 times*. Examples of the type(s) of interactions mentors and mentees

[1]Because we added nine new items to the CSMS, we conducted a Principal Components Analysis to ensure that the new items fit appropriately with the existing items. An examination of the scree plot and the eigenvalues suggested that all of the items (new and existing) still loaded onto only one principal component. Moreover, the loadings of the existing items [*M*=0.82(*SD*=.04)] did not differ from those of the new items [*M*=0.80(*SD*=.04); *t*(25)=1.33, *ns*].

had outside of the seminar include: meeting before or after class, e-mail contact, texting, attending social events together, and/or attending study sessions.

Procedure

Mentors who consented to participate completed the baseline questionnaire (i.e., attachment, self-efficacy, demographic questions) during their first peer mentor colloquium and the CSMS during their last meeting at the end of the semester. As part of their first-year seminar evaluation, nearly all first-year students completed an online version of the CSMS anonymously at the end of their first semester; a small number of students (n=11) completed the CSMS on paper because their seminar instructor preferred an in-class evaluation.

Data Analysis Plan

Mentor-reported outcomes. In the first phase of the analysis, mentor-reported data served as the outcome. Specifically, we employed correlational and mediational analyses to examine relations among mentor characteristics (i.e., attachment, self-efficacy) and mentors' perceptions of how well they supported students (i.e., mentor support - mentor ratings). In order to test whether self-efficacy functioned as a mediator of attachment, we examined two regression models: First, mentor self-efficacy was regressed onto the independent variables (i.e., ambivalent and avoidant attachment). Second, the mentor support - mentor ratings variable was regressed onto the independent variables and the proposed mediator (mentor self-efficacy). In order to determine whether self-efficacy served as a mediator, we employed bootstrap resampling procedures. As described by Hayes (2009), bootstrap resampling is the preferred method for testing for mediation because, unlike other frequently used methods (e.g., Baron and Kenny's causal steps approach, Sobel test), this method quantifies the intervening variable effect and does not assume normality in the indirect effect's sampling distribution. We created 10,000 bootstrap

samples (each sample with n=76) from our data through random sampling with replacement using the MEDIATE macro for SPSS (http://www.afhayes.com/public/mediate.sps). Self-efficacy was deemed to mediate the relation between the independent and dependent variables if the 95% confidence interval for the indirect effect excluded zero (Hayes, 2009; Shrout & Bolger, 2002). Indirect effects were calculated by multiplying the two unstandardized path coefficients from each path of the mediational model (e.g., avoidant attachment → self-efficacy and self-efficacy → mentor support) (Hayes, 2013). To assess for outliers, we applied the outlier labeling rule (Hoaglin & Iglewicz, 1987). No outliers were detected.

Mentee-reported outcomes. In the second phase of the analysis, mentor characteristics were examined as possible predictors of mentor support – mentee ratings. Given that mentees were nested in 67 seminars (with an average of 16 students per seminar), hierarchical linear modeling (HLM), a technique that can accommodate non-independent observations, was used (Raudenbush & Bryk 2002). We examined the following variables as possible predictors of mentee ratings of mentor support: mentor avoidant attachment, mentor anxious-ambivalent attachment, and mentor self-efficacy (all Level 2 predictors, grand mean centered), and mentor-mentee contact, a Level 1 predictor (group mean centered). We also included the mean score of mentor-mentee contact for each seminar as a Level 2 predictor in order to parse between- from within-group variance in mentee reports of mentor support explained by mentor-mentee contact. This technique allowed us to determine the degree to which mentee ratings were influenced by the amount of contact they perceived relative to *all first-year students* (between-group variance) versus the amount of contact they perceived relative to *other mentees in their seminar* (within-group variance). HLM 7 (Raudenbush, Bryk, & Congdon, 2010) was used for all of the analyses. Mentees' ratings for one seminar were slightly biased because they referred to

two mentors and only one mentor's data was included (the excluded mentor had served for two consecutive years and thus, had to be excluded for one of the years). Eleven of the 999 mentees did not report on amount of contact with their mentor, so the mean contact score for their seminar was imputed in the analysis examining mentor-mentee contact.

Results

An examination of the means and standard deviations of the study measures suggested that peer mentors not only felt quite competent in their role at the beginning and end of the program, but also evidenced limited variability in their self-assessments (Table 1). Specifically, the mentors' mean self-efficacy rating at the beginning of the program was slightly over 4 (i.e., *quite confident*) on a 0-5 scale, with only a half-point standard deviation. Similarly, mentors' mean rating of support for mentees at the end of the program was over a 4 on a 1-5 scale, with a standard deviation of less than one half a point, suggesting that most mentors agreed, to some extent, that they were enacting supportive behaviors with their mentees.

In order to determine the extent to which mentors' scores on the attachment measure differed from similarly aged individuals, we compared mentors with participants in the Simpson et al. (1996) study. Mentors' avoidant attachment scores (M=23.55; SD=8.06) were lower than those of participants in the Simpson et al. (1996) study (M=26.59), but mentors' ambivalent attachment scores were not significantly different (M=28.56, SD=8.88 vs. M=30.09)[2].

Correlations

As predicted, mentors who reported higher levels of avoidant and/or anxious-ambivalent attachment reported lower mentor self-efficacy. Also as predicted, mentors who reported higher

[2]Summed attachment subscale scores are presented here to permit comparisons with Simpson et al.'s sample, but mean scores are reported in Table 1 to facilitate interpretation based on the response scale. Simpson et al. did not report standard deviations; however, we calculated 95% confidence intervals around mentors' mean scores to see if the means from Simpson et al. were in the range of our mentors' scores. CIs for avoidant attachment (21.74, 25.36) did not include Simpson et al.'s mean, but the CIs for anxious-ambivalent attachment did (26.56, 30.56).

levels of self-efficacy at the beginning of the semester reported providing more support for their mentees. There was no significant direct relation between either type of attachment and mentor support for mentees (Table 1).

Table 1

Descriptive Statistics and Intercorrelations among the Study Variables for Mentors

	Variable	*M* (*SD*)	1	2	3
1	Mentor avoidant attachment	2.94 (1.01)	---		
2	Mentor anxious-ambivalent attachment	3.17 (0.99)	.35*	---	
3	Mentor self-efficacy	4.10 (0.50)	-.41*	-.36*	---
4	Mentor support for mentees	4.26 (0.40)	-.20†	-.16	.43*

Note. N=76. †p =.10, *p < .01

Mediational Analyses

Attachment, self-efficacy, and mentor support. Although there was no direct association between avoidant or anxious-ambivalent attachment and mentor support, respectively, self-efficacy was evaluated as a potential mediator given that one can still test for an indirect effect in the absence of a direct effect between the independent and dependent variables (Hayes, 2009). As displayed in Table 2, avoidant attachment emerged as significant and inverse predictor of self-efficacy when anxious-ambivalent attachment was being held constant. Bootstrapping analyses suggested a significant indirect effect of avoidant attachment on mentor support via mentor self-efficacy [Indirect effect = -.065, *SE* = .029; 95% CI = -.130,-.017]. Anxious-ambivalent attachment was associated with self-efficacy at the trend level (p=.07) when avoidant attachment was being held constant, but since the confidence interval (-.091, .003) included 0, there was no significant indirect effect of anxious-ambivalent attachment on mentor support via self-efficacy.

Table 2

Coefficients for Mediational Model Predicting Mentor Support – Mentor Ratings from Attachment and Self-Efficacy

	Outcomes					
	M (Self-Efficacy)			*Y* (Mentor Support)		
Predictors	Coeff.	*SE*	*p*	Coeff.	*SE*	*p*
X_1 (Avoidant attachment)	-.19	.06	.003	.00	.05	.997
X_2 (Anxious-ambivalent attachment)	-.11	.06	.073	-.00	.05	.991
M (Self-efficacy)	---	---	---	.34	.10	.001
	R^2=.245 $F(2,67)=10.86^{**}$			R^2=.185 $F(3,66)=4.98^{*}$		

Note. Coefficients are unstandardized. *X*=independent variable, *M*=mediator, *Y*=dependent variable. $^{*}p<.01$, $^{**}p<.001$.

Hierarchical Linear Models

We calculated an intraclass correlation coefficient (ICC) from intercept-only models for both mentor support – mentee ratings and mentor-mentee contact. The ICC measures the "proportion of variance in the outcome that is between groups" (Raudenbush & Bryk, 2002, p. 36); in other words, how much variation in mentor support and mentor-mentee contact is attributable to differences *between* mentors. The ICCs were .13 for mentor support and .14 for mentor-mentee contact, indicating that most of the variation was attributable to *within* (as opposed to between) mentor differences for both variables.

Table 3 displays the model predicting mentor support – mentee ratings. With respect to mentor attachment, neither avoidant nor anxious-ambivalent attachment predicted lower support ratings, contrary to the study hypothesis. Also contrary to our hypothesis, mentor self-efficacy did not predict mentor support – mentee ratings. Finally, consistent with our hypothesis, we

found that mentor-mentee contact was a significant and positive predictor of mentor support – mentee ratings. This effect was evident at both the within- and between-person levels (*p*s < .001). Specifically, for each one unit increase in contact above the mean contact score *for the seminar*, there was a .306 unit increase in mentor support, as reported by mentees. Additionally, for each one unit increase in contact above the mean contact score *for all seminars*, there was a .458 unit increase in mentor support – mentee ratings.

Table 3

Hierarchical Linear Model Predicting Mentor Support – Mentee Ratings

	Coefficient	*SE*	*p*
Predictor			
Intercept	3.948	0.032	<.001
Mentor avoidant attachment	0.024	0.037	0.523
Mentor anxious-ambivalent attachment	0.040	0.036	0.277
Mentor self-efficacy	0.053	0.081	0.519
Mentor-mentee contact	0.306	0.020	<.001
Mean mentor-mentee contact	0.458	0.061	<.001

Note. All predictors were grand-mean centered, with the exception of mentor-mentee contact, which was group-mean centered (i.e., centered based on the seminar mean for reported contact). Mentor-mentee contact was a Level 1 variable; mentor avoidant attachment, mentor anxious-ambivalent attachment, mentor self-efficacy, and mean mentor-mentee contact were Level 2 variables. Values are unstandardized coefficients.

Discussion

Given the dearth of research on characteristics of peer mentors in collegiate settings that predict good mentoring outcomes, we sought to determine whether mentors with a more adaptive attachment style provided more support to their mentees and whether mentor self-efficacy mediated this effect. We also examined whether the amount of contact mentors had with their mentees predicted mentees' ratings of mentor support. Our results showed that, indeed, mentor

self-efficacy mediated the effect of an avoidant attachment style on mentor-provided support; however, this relation only was apparent when *mentors*', not mentees ratings of mentor support were being predicted. With respect to mentor support – mentee ratings, mentor-mentee contact was the only significant predictor of this outcome.

Our findings regarding the associations between mentor attachment style and mentoring outcomes were complex. We did not find a direct relation between avoidant and anxious-ambivalent attachment and mentor support – mentor ratings, which was consistent with Faith et al. (2011), but inconsistent with Wang et al. (2009), who found that both types of attachment were associated directly with mentor relationship satisfaction. However, Wang et al. focused on a brief, affective measure of mentoring outcomes, as opposed to the more comprehensive behavioral measure employed in our study. Thus, it is possible that in both studies, more securely attached mentors felt closer to their mentees but did not necessarily enact more supportive behaviors. Results of our mediational analysis suggest that avoidant attachment did have an indirect effect on mentor-provided support via mentor self-efficacy. That is, mentors who reported a lack of desire for closeness with others and a reticence to depend on others were less confident in enacting behaviors such as establishing and maintaining a mentoring relationship, communicating effectively, facilitating learning in their mentees, and connecting their mentees with campus resources. With respect to campus resources, it is not surprising that mentors who prefer not to depend on others (i.e., avoidant mentors) would be less familiar with institutional supports and have a less extensive network to which they could refer mentees.

Although anxious-ambivalent attachment did not have an indirect effect on mentor support via self-efficacy as hypothesized, there was a significant and inverse correlation between anxious-ambivalent attachment and mentor self-efficacy. Perhaps mentors who reported a greater

desire for closeness, but also a fear of abandonment, experienced lower self-efficacy on account of a strong desire to be accepted by mentees, a proneness to emotional dysregulation, and discomfort with mentee autonomy (Gormley, 2008). In turn, these cognitions and emotions might have led these mentors to be less confident with skills assessed on the Mentoring Confidence Inventory such as recognizing the boundaries of their mentoring role(s), facilitating problem-solving in challenging situations, and cultivating the necessary self-awareness needed to serve as a role model.

It is unclear why anxious-ambivalent attachment ultimately did not have an indirect effect on mentor support. Because both forms of insecure attachment were moderately correlated with one another, they likely were competing to account for the same variance in mentor self-efficacy (Hayes, 2013). This explanation is supported by the fact that anxious-ambivalent attachment emerged as a significant predictor of mentor self-efficacy in the bivariate correlational analysis, but not in the regression model, where both attachment variables were entered simultaneously. Given the significant inverse correlation between anxious-ambivalent attachment and mentor self-efficacy, however, lower mentor self-efficacy still should be considered as a potentially important correlate of anxious-ambivalent attachment in mentors.

With respect to self-efficacy, our finding that mentors with higher self-efficacy at the start of the program reported providing more support over the semester was similar to the findings of Parra et al. (2002), who reported that mentors higher in self-efficacy reported greater benefits for mentees, more mentee-mentor contact, and more program relevant behaviors, and Martin and Sifers (2012), who showed that higher self-efficacy predicted greater mentor satisfaction. Similar to Karcher et al. (2005), our results indicated that self-efficacy had a more direct influence on mentoring outcomes compared to more distal mentor characteristics (i.e.,

attachment style). This direct influence likely stems from the fact that self-efficacy about mentoring reflects specific beliefs about mentoring capabilities, compared to attachment, which influences self-efficacy, but operates across a broader range of situations and relationships. High self-efficacy has been linked to more strategic thinking, effective problem-solving (Bandura, 1997), and persistence in the face of challenging situations (Bandura, 1977) , so it also may be the case that mentors who felt more efficacious at the outset dealt with mentee-related challenges in ways that strengthened, as opposed to compromised, their ability to support mentees.

In line with Alfonso et al. (2001), Faith et al. (2011), and Ferro et al.'s (2013) findings, we found that mentor characteristics only demonstrated an association with mentor, not mentee ratings of support. In fact, the only significant predictor of mentee ratings of mentor support was mentee-mentor contact, which might reflect the fact that mentor-mentee contact was measured concurrently with mentee perceptions of support and was completed by the same rater (i.e., mentee). It may be the case that prospective measures of mentor characteristics are too distal from mentoring outcomes to have significant value in predicting mentees' perceptions of support. A more likely explanation, however, is that mentor characteristics interact with a host of mentee characteristics [e.g., attachment, personality, achievement motivation, interdependent vs. independent orientation (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012)] and other influences (e.g., seminar instructor's approach) to influence mentees' individual perceptions of support. This explanation is corroborated by our analyses showing a high degree of variability *within* seminars for mentee ratings of mentor support and mentor-mentee contact, suggesting that mentees in the same seminar were obtaining and perceiving differing amounts of mentor support. The different pattern of findings for mentee and mentor ratings of support also may reflect the fact that mentors and mentees likely had different expectations of the relationship and different

references for evaluating mentor support. That is, when rating themselves, mentors likely recalled their cumulative effort cultivating relationships and supporting *numerous* students simultaneously, whereas mentees reported on their felt support within the context of a *single* relationship (Authors, 2012). Mentees who desired a close relationship in this group mentoring program might have rated their mentor as less supportive if they did not perceive adequate individual-level attention, which speaks to the larger issue of how different expectations for the mentoring relationship at the outset could influence perceived support (Authors, 2012; Larose, Chaloux, Monaghan, & Tarabulsy, 2010).

Nonetheless, that avoidant attachment in mentors showed an indirect relation with mentor support – mentor ratings suggests that this variable may be important in shaping mentors' sense of efficacy and, ultimately, their perceptions of how much support they provided to mentees. Presumably, mentors' impressions of their experiences may affect their subsequent decisions to mentor in the future, as suggested by Wang et al. (2009), or to occupy a teaching role. Enhancing mentors' self-awareness of their relational style at the outset of the mentoring relationship may help to elucidate why they feel more confident in enacting some behaviors more than others (Bernier, Larose, & Soucy, 2005). This awareness also might aid mentors in understanding why they have particular reactions to, or interactions with mentees. For example, mentors who are more insecurely attached may feel less efficacious in helping students who are experiencing difficulties or a crisis on account of greater physiological reactivity (Diamond & Hicks, 2004; Koole et al., 2011).

Limitations & Future Directions

Several limitations of our study should be acknowledged. First, since we focused on mentor characteristics, it was not possible to examine associations between mentee

characteristics and mentoring outcomes. In contrast to one-to-one mentoring programs, identifying reliable predictors of mentee perceptions of support in group mentoring programs may prove difficult given the heterogeneity of mentees working with any one mentor. Nonetheless, in the context of a group mentoring program for first-year students, it may be fruitful to assess mentees' receptivity to mentoring and, shortly after the program begins, areas (e.g., academic, social) in which they desire support from their mentor. Additionally, given that mentor-mentee contact was the only predictor of mentor support – mentee ratings, it would be useful to employ a more detailed measure of contact, which would make it possible to determine if some types of mentor-mentee contact (e.g., psychological/emotional support) are deemed by mentees to be more beneficial than others (e.g., academic, social). Relatedly, in future research, it might be beneficial to differentiate between mentor-initiated and mentee-initiated contacts, since one type may be more predictive of mentee ratings of mentor support than the other. Since the outcomes in the current study were limited to mentors' and mentees' ratings of mentor support, future investigations should include other, more objective mentee outcomes, such as mentees' course grades and mentee retention in the first year. Finally, future research should examine conceptual models of peer mentor support that include more varied mentor characteristics [e.g., empathy, ability to commit time, willingness provide feedback (Terrion & Leonard, 2007)]. These characteristics might evidence more variation across mentors than the variables included in the current study, allowing us to better explain the variability in mentors' and mentees' ratings of mentor support.

Other limitations in the study include the fact that self-efficacy was assessed only at the beginning of the program. Bandura (1977) noted that measuring self-efficacy and performance intermittently can help to elucidate the extent to which one factor is affecting the other, and vice

versa. In addition, more frequent assessments of mentors' efficacy may aid program administrators in providing targeted support and training to mentors in need Ferro et al. (2013). Relatedly, it would be interesting to investigate whether mentors with certain attachment styles have a greater or lesser propensity for change in self-efficacy when exposed to ongoing training and supervision. Or, does the enhancement of self-efficacy lead mentors to initiate more contact with their mentees? With respect to the measurement of self-efficacy, it would be beneficial to subject the Mentoring Confidence Inventory to a more in-depth psychometric analysis, given that, to our knowledge, it is the only published measure of self-efficacy for *peer* mentors.

Finally, Bartholomew and Thompson (1995) have questioned the appropriateness of applying attachment theory to the analysis of mentoring relationships, noting that the application of attachment theory likely should be limited to understanding behavior in parent-child or long-term sexual relationships. However, these researchers also noted that it may be appropriate to apply the theory more broadly when attachment style is thought to have implications for "social competencies, working alliance, and relationship satisfaction" (Bartholomew & Thompson, 1995, p. 485). Indeed, these skills and outcomes are integral to a positive peer mentoring experience, both for the mentor and mentee, which is why we believe there is utility to examining attachment in the context of a peer mentor program. Further, recent qualitative findings from our research group suggest that even in a peer mentoring program with an academic focus, 56% of mentors reported serving as a "trusted friend" or confidante to their mentees (Authors, 2014), which is consonant with Gershenfeld's (2014) finding that 55% of the collegiate mentoring programs reported that their mentors provided psychosocial or emotional support. Without question, more research on peer mentor attachment style and its associated outcomes is needed to establish whether our findings are generalizable to peer mentors at other

institutions of higher education, particularly mentors in dissimilar environments, such as public institutions or community colleges.

Implications

Our findings have numerous implications for the selection, training, and supervision of peer mentors who are assisting first-year students with the college transition. With respect to the selection of mentors, although we would not advocate the use of attachment measures to screen peer mentor candidates, it may be advisable to articulate the importance of several attributes consistent with a more secure attachment style when peer mentor positions are publicized. Potential peer mentors should feel comfortable a) assisting students with academic, social, and personal challenges, b) serving as a role model, c) discussing their own academic and social experiences and challenges, d) connecting students to campus resources, and e) helping mentees to develop academic skills that allow them to function more autonomously in college.

With respect to training and supervision, enhancing mentor self-efficacy might help to mitigate the effects of an insecure attachment on a mentor's ability to support his or her mentees. As previously noted, self-efficacy is shaped by four factors: performance accomplishments, vicarious experiences, persuasion, and physiological states (Bandura, 1977); the first three factors could be valuable targets for intervention in mentor training or supervision. For example, in order to cultivate performance accomplishments, mentors could be encouraged to schedule social events and/or individuals meetings with mentees early in the semester, when mentees might be more responsive to their outreach efforts. These early contacts might provide mentors with early mastery experiences, which could enhance self-efficacy and also diminish the negative effects of challenging experiences they might face later in the semester (e.g., unresponsiveness or lack of motivation among mentees) (Bandura, 1977). Participant modeling

also might help to facilitate performance accomplishments (Bandura, 1977). For example, mentors could role play challenging situations they are likely to face with mentees (e.g., mentees missing a meeting; mentees disclosing a challenging personal problem; mentees disclosing a desire to transfer) with fellow mentors. Utilizing peer mentors with prior experience in these role plays could be especially beneficial, in that more experienced mentors can model effective responses, thereby providing a rich vicarious learning opportunity. Finally, program coordinators or administrators might capitalize on verbal persuasion as a means of enhancing self-efficacy. That is, mentors could be regularly reminded that they are capable of dealing with the challenging situations they encounter with mentees. As noted by Bandura (1977), this persuasion is likely to be effective only when it occurs in the context of genuine opportunities for practice and mastery. Activities such as the role plays described earlier are one example of how mentors might obtain this practice.

As aforementioned, periodic monitoring of mentor self-efficacy also may be critical in the eventual enhancement of self-efficacy. These assessments could help mentors to independently and inconspicuously identify where they fall relative to other mentors in regards to their self-efficacy. This type of assessment also communicates to mentors that self-efficacy is a dynamic construct with the potential for enhancement (which is consistent with the verbal persuasion strategy), but only if one is cognizant of the specific area(s) in which s/he needs support or assistance. Mentor self-efficacy data in the aggregate could be used by program supervisors to determine which behaviors mentors are feeling least confident about (e.g., establishing and maintaining relationships, becoming a role model, etc.), which, in turn, could become the foci of mentor supervision sessions. As suggested by Parra et al., (2002), ongoing support from program supervisors may be critical to promoting and sustaining mentor self-

efficacy; using feedback from self-efficacy assessments to inform this ongoing support would demonstrate responsiveness to mentors' specific needs and optimize the use of supervision time.

Gormley (2008) suggested educating mentors about how mentees with insecure attachment styles might act within the mentoring relationship as a means of better preparing mentors for these circumstances. A similar approach could be taken with mentors to demonstrate how their attachment style could influence their confidence in, and ability to implement certain mentoring behaviors. For example, one dilemma that peer mentors often face is how to assist mentees who disclose that they are considering transferring to another institution. Program staff might initiate a discussion with mentors about how to be most responsive and empathic to mentees in this circumstance, particularly if a mentor has a tendency to avoid conflict. Given that mentors with an anxious-ambivalent style may be prone to emotional dysregulation and negative affect, program staff also might emphasize the importance of mentors obtaining support from fellow mentors or supervisors when challenges arise in their relationships with mentees (e.g., mentees disclose desires to transfer). Importantly, mentors do not need to be outwardly identified as "securely attached" or "insecurely attached"; rather, program staff can simply prepare *all* mentors for potential challenges they might face, underscoring that some situations may be more difficult to navigate for some mentors on account of their relationship history, comfort with self-disclosure, and confidence in addressing conflict.

Finally, given the positive relation between contact and perceived mentor support that has emerged from multiple studies, mentors could be informed during training and supervision that mentees who have more contact with their mentors often report feeling more supported. Mentors also may be given specific guidelines around the number (and possibly the type) of contacts they should have with their mentees (Authors, 2012). Mentors might not perceive engaging in a

limited exchange before class or sending a text message as genuine "support"; however, those examples of contact, however brief, might help to cultivate feelings of social integration among mentees and set the stage for more time-intensive or personal interactions in the future. In addition, establishing clear expectations for the number of contacts mentors should have with their mentees would create a mechanism for greater accountability among mentors, as suggested by Lee et al. (2010).

In conclusion, this is one of the first large-scale investigations that empirically evaluated a new model of peer mentor support and utilized multilevel modeling to examine mentees' experiences with their peer mentors. If replicated, our findings suggest that it would be beneficial to enhance peer mentors' awareness about their attachment style and self-efficacy at the outset of mentoring. Mentors also should be informed about the importance of regular contact with their mentees. Additional research on the malleability of peer mentor self-efficacy and its propensity for enhancement through mentor training and supervision is needed to determine peer mentors' potential for growth. While it is impractical to attend to all of the influences on the mentor-mentee relationship, our findings suggest that attracting mentors with a more secure attachment style may yield mentors who are more confident about their ability to enact a range of mentoring behaviors. An explicit focus on mentor self-efficacy also may be a fruitful, given the direct relation between self-efficacy and mentoring outcomes and because self-efficacy can be quantified and assessed over time. Presumably, by enhancing peer mentors' ability to facilitate the academic and social integration of their mentees, peer mentor support will have a more pronounced and positive effect on first-year college student retention. Testing this hypothesis is an important next step in the research on peer mentoring and first-year college student retention.

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