

Relationship Satisfaction and Depressive Symptoms in Emerging Adults: Cross-sectional
Associations and Moderating Effects of Relationship Characteristics

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Abstract

Extending research based on married adults, we explored associations between romantic relationship satisfaction and depressive symptoms in a sample of 484 emerging adults (ages 18-25) in non-marital dating relationships. In addition, we investigated whether the relationship characteristics of relationship length, interdependence (i.e., investment size and quality of alternatives), and commitment moderated these associations. Overall, there was a negative association between relationship quality and depressive symptoms that was stronger for emerging adult women than men, echoing findings from married adults. The extent to which relationship characteristics moderated this association generally differed by gender. For men, the negative association between satisfaction and depressive symptoms was moderate to strong in relationships of above average interdependence, commitment, and length, but weak in shorter and less interdependent relationships and non-existent in relatively uncommitted relationships. In contrast, for women, the association between relationship satisfaction and symptoms was moderate to strong at all levels of interdependence and commitment, though amplified at higher commitment levels. Interestingly, shorter relationship length was associated with a stronger association between satisfaction and depressive symptoms for women. In general, findings suggest the importance of romantic relationship quality to the emotional well-being of emerging adults, particularly young women, and highlight gender differences in relationship processes during this life period.

Keywords: Relationship satisfaction, depressive symptoms, emerging adults, commitment

Relationship Satisfaction and Depressive Symptoms in Emerging Adults: Cross-sectional Associations and Moderating Effects of Relationship Characteristics

A robust association between marital distress and depressive symptoms has been well-documented (see review by Whisman & Kaiser, 2008). Lower relationship satisfaction has been associated with higher concurrent depressive symptoms (Whisman, 2001) and a heightened risk of future symptoms and diagnoses of depression (e.g., Beach, Katz, Kim, & Brody, 2003; Whisman & Bruce, 1999; Whisman & Uebelacker, 2009). However, because studies investigating this association have almost exclusively used samples of married adults, it remains unclear whether couple distress within other types of romantic relationships at other ages is similarly associated with elevated symptoms of depression. In the current study, we evaluated whether the negative association between relationship satisfaction and depressive symptoms is present among emerging adults (ages 18-25) in dating relationships. Further, we sought to determine whether the length, interdependence level, and commitment level of these relationships are important factors to consider in identifying which relationships are associated with the emotional well-being of partners and which are not. That is, we explored whether these factors moderate the associations between relationship satisfaction and depressive symptoms among emerging adults.

Are Models of the Association between Marital Distress and Depression Applicable to Emerging Adult Dating Relationships?

Emerging adulthood has become a distinct developmental period in the life course of many individuals living in industrialized societies (Arnett, 2000). Roughly corresponding to the ages of 18 to 25 years, it is characterized by more independence than adolescence but fewer responsibilities and commitments than adulthood. Emerging adults tend to

spend these years exploring and evaluating different possibilities for intimate relationships, occupations, and world views, prior to settling down into long-term adult roles (e.g., Arnett, 1998). As they explore their options in love and seek to discover the kind of romantic partner they would eventually like to have, most emerging adults obtain a range of experiences in different relationships with different partners (Arnett, 2000). Consequently, romantic unions during this period tend to differ from those of full-fledged adulthood, in that they are more self-focused, less committed, and less stable (e.g., Sprecher, 1988).

Given these differences, it is possible that the romantic relationships of emerging adults do not relate to individual partners' depression in the same way or as strongly as do the marriages of adults. Theoretically, the threat of relationship dissolution will generally not raise concerns about the loss of economic, social, and familial resources in the way that it does for married adults because dating partners are less likely to have combined finances, shared living arrangements, and children or other relatives in common (Coyne, 1994). Also, according to the marital discord model of depression (Beach, Sandeen, & O'Leary, 1990), relationship distress increases the risk for depression largely by reducing social support and coping assistance available to the individual. Married adults, for whom the spouse often represents the primary source of support, may therefore be affected more strongly by relationship problems than are emerging adults who tend to have many additional social contacts beyond their dating partners (Arnett, 1998). Consistent with this speculation, Uebelacker and Whisman (2006) found that relationship discord was associated with current major depression among married adults but not among adults in unmarried cohabiting relationships. In addition, the association between marital satisfaction and depressive symptoms appears to be smaller at younger ages (Bookwala & Jacobs, 2004;

Whisman, 2007). This has been attributed to the greater number of interaction partners that individuals have when younger; older married adults with fewer social partners appear to be more emotionally dependent on their spouse (Cartensen, 1992).

Together, these theories and findings suggest that associations between relationship quality and depression may be small or even absent for emerging adults who are not married to their romantic partners and who are, by definition, young. Whether this is empirically the case is unclear, given the limited amount of research to date on links between emerging adult relationships and mental health. One study found that simply being in a romantic relationship predicted increases in depressive symptoms among first-year college students (Davila, Steinberg, Kachadourian, Cobb, & Fincham; 2004), but did not examine whether the quality of those relationships predicted symptoms. Gallaty and Zimmer-Gembeck (2008) found that daily romantic hassles and positive relationship events were each associated with same-day ratings of mood among 17-22 year olds, suggesting that relationship functioning may be linked with emerging adult emotional well-being. However, average weekly levels of positive and negative relationship events were not associated with depressive symptom levels in that sample. Only one study of which we are aware has examined the association between depression and global romantic relationship quality or satisfaction in emerging adults. Remen and Chambless (2001), using a sample of 145 college students, reported a negative correlation between self-reported relationship satisfaction and depressive symptoms ($r = -.20$ at Time 1; $r = -.42$ at Time 2). However, because their study required that participants be in the same relationship for two assessments conducted 4.5 months apart, it selected for emerging adults in relatively stable relationships (only 60% of the 241 participants who completed the first assessment).

Therefore, it remains unknown whether the correlation between relationship satisfaction and depressive symptoms would have been present if the sizeable number of young adults in less stable relationships had been included.

In summary, there is theoretical and empirical evidence to suggest that the negative association between couple satisfaction and depressive symptoms, reliably observed in adult marriages, may not generalize to emerging adult dating relationships. However, very little existing research speaks to this question; the one study that directly tested this association in emerging adults did so in a sample of relatively stable dating relationships. The first aim of the current study, therefore, was to assess for associations between relationship satisfaction and depressive symptoms in a large sample of emerging adults involved in dating relationships, including relationships of short duration.

Relationship Characteristics as Moderators of the Association between Relationship Satisfaction and Depressive Symptoms

Despite the robust associations between couple distress and depression, not all individuals who are currently dissatisfied with their romantic relationships are depressed, and not all adults with elevated depressive symptoms have a dissatisfying relationship. An important next step for research in this area is to explore factors that may amplify or diminish (i.e., moderate) the strength of the association between relationship quality and depression (e.g., Whisman, 2001). Identification of such moderators would help determine which individuals may be most at risk for depressive symptoms in the face of relationship distress (or most at risk for couple distress when dysphoric). Several studies have explored individual personality characteristics that are linked with stronger associations between couple distress and depression (e.g., Davila, Karney, Hall, & Bradbury, 2003; Uebelacker &

Whisman, 2006). In contrast, in this project, we were specifically interested in identifying relationship characteristics that moderate the association. In other words, we sought answers to the question, *in which types of romantic relationships is lower relationship satisfaction (most strongly) associated with higher depressive symptoms?*

Only a few studies to date have assessed how characteristics of the relationship may influence links between relationship satisfaction and depression; all have focused on marital status and relationship length. As noted above, Uebelacker and Whisman (2006) found that marital status moderated the association between relationship discord and current major depression, such that the association was present for married but not cohabiting adults. Looking at relationship length as a moderator, Proulx, Helms, and Buehler (2007) found the cross-sectional association between marital quality and personal well-being was stronger in shorter marriages (≤ 8 years) than in longer marriages. Similarly, in a sample of cohabiting and married women, Whitton, Stanley, Markman, and Baucom (2008) found that the within-person association between relationship functioning and depressive symptoms was stronger in newer versus more long-term relationships. However, Kouros and colleagues (2008) found no moderating effect of relationship length for women and the opposite effect in men; within-person associations between marital problems and depression were stronger for men in longer- than shorter-term marriages. The inconsistency in these findings suggests that further study is needed to understand how relationship length may moderate the links between couple satisfaction and depressive symptoms. Therefore, we examined potential moderating effects of relationship length in the current study, but did not make a directional hypothesis.

It seems likely that characteristics of relationships beyond marital status and length may moderate the links between couple satisfaction and depressive symptoms. According to Interdependence Theory (Kelley, 1979), any given relationship can be characterized by the level of interdependence between partners, that is, the extent to which each partner depends upon or “needs” the relationship. *Interdependence level* is theoretically determined (and measured) by three factors: relationship satisfaction, the size of investments in the relationship, and the quality of available alternatives to the relationship (Rusbult, 1980; Rusbult, Martz, & Agnew, 1998). *Investment size* refers to the amount of resources put into a relationship that would be lost if it ended; investments include time and effort spent building a relationship, as well as mutual friends, family, and possessions (e.g., pets, cars, living spaces) that become attached to the relationship (see also Stanley & Markman, 1992). The perceived *quality of alternatives* to the relationship refers to the extent to which an individual’s needs (e.g., for companionship and intimacy) could be met outside the relationship, through relations with other partners, friends, or family members. Larger investments and poorer perceived quality of alternatives raise the costs of ending a relationship, thereby building interdependence (Rusbult, 1980).

It is probable that the level of interdependence in a given relationship will influence the extent to which dissatisfaction in that relationship is associated with partners’ depressive symptoms. First, the threat of relationship dissolution that frequently accompanies couple distress may be more upsetting for individuals who have invested many resources in the relationship and have few alternatives because the perceived costs of relationship termination will be high (Rusbult, 1980, 1983). Second, applied to the marital discord model of depression, individuals who are more dependent upon their

relationships to fulfill needs for support may be more vulnerable to depression when relationship quality deteriorates and support from the partner decreases (Beach et al., 1990). Therefore, we hypothesized that the negative association between relationship satisfaction and depressive symptoms would be stronger in dating relationships characterized by higher investment levels and lower perceived quality of alternatives.

Relationships are also characterized by level of *commitment*, defined as an individual's intention and desire to maintain the relationship long-term (Rusbult, 1980, 1983; Stanley & Markman, 1992). Whereas interdependence level describes the structural quality of a relationship, commitment refers to feelings of emotional attachment to the partner and allegiance to the relationship, which emerge as a consequence of growing interdependence (Rusbult, Bissonnette, Arriaga, & Cox, 1998). Commitment level is the strongest and most proximal predictor of whether relationships persist or break-up (Le, Dove, Agnew, Korn, & Mutso, 2010). In addition, commitment promotes behaviors that strengthen and maintain relationship quality, including healthy sacrifice (e.g., Van Lange et al., 1997; Whitton, Stanley, & Markman, 2007) and constructive responses to negative partner behavior (e.g., Rusbult et al., 1998). It is plausible that commitment may also influence the extent to which relationship satisfaction is associated with emotional well-being. Individuals strongly committed to their relationships, for example, may experience more severe loss in terms of both emotional attachment and disruption of future plans when faced with a potential break-up. Further, partners in highly committed relationships may be particularly vulnerable to dysphoria if the relationship is not satisfying because the dissatisfaction signals that one's desire to create and maintain a quality relationship has not been fulfilled. Therefore, we hypothesized that commitment would moderate the

negative association between relationship satisfaction and depressive symptoms, such that this association would be stronger in relationships with higher levels of commitment.

Gender Differences

Perhaps because relationship success is more central to women's than men's self-concepts (e.g., Cross & Madson, 1997; Jack, 1991), women appear to be at greater risk for depressive reactions to interpersonal difficulties (Kendler, Thornton, & Prescott, 2001; Proulx et al., 2007). Although gender differences have typically not been found in longitudinal associations between marital quality and symptoms of depression (e.g., Davila et al., 2003; Whisman & Uebelacker, 2009), a meta-analysis revealed that the cross-sectional correlation is significantly, albeit slightly, stronger for women ($r = -.42$) than for men ($r = -.37$; Whisman, 2001). Interestingly, Remen & Chambless (2001) observed the opposite pattern among college students in relatively stable relationships: Although there was no gender difference in the cross-sectional associations, relationship satisfaction predicted change in depressive symptoms over 4.5 months for women but not for men. Based on the consistent findings from adult married samples, along with evidence that undergraduate women are more likely than their male counterparts to attribute their depressive symptoms to problematic interpersonal relationships (Robbins & Tanck, 1991), we hypothesized that the correlation between relationship satisfaction and depressive symptoms would be stronger for emerging adult women than men.

We also explored whether the extent to which relationship characteristics moderate the association between satisfaction and depressive symptoms might differ by gender. There is building evidence that commitment may be more important in determining men's than women's relationship behaviors and outcomes (e.g., Stanley, Whitton, Sadberry,

Clements, & Markman, 2006). For example, men appear to forego immediate self-interest for the good of the relationship (i.e., sacrifice) without resentment only if it is clear that the relationship will last long term; in contrast, women may do so regardless of commitment level (Whitton et al., 2007). Based in part on these findings, Stanley (2010) theorized that women's behavior in relationships is largely driven by feelings of love and attachment whereas men's is largely driven by the presence of commitment, which is built upon interdependence that develops over time. It is plausible that there are similar gender differences in the extent to which commitment, as well as interdependence and relationship length, moderate the association between relationship quality and depressive symptoms. That is, women's emotional state may be intertwined with the perceived quality of romantic unions regardless of these relationship characteristics; for men, however, this may be true only once the relationship has progressed, interdependence has grown, and commitment has been established. We therefore hypothesized that the moderating effects of relationship length, interdependence level (i.e., investment size and quality of alternatives) and relationship commitment would be stronger for men than for women.

The Present Study

In the current study we explored the cross-sectional association between relationship satisfaction and depressive symptoms among emerging adults (ages 18-25). First, we sought to determine whether the negative correlation between these two variables, well-documented in adult marriages, is also present in dating relationships during emerging adulthood. In addition, we tested the hypotheses that the relationship characteristics of length, interdependence level (investment size and quality of alternatives), and commitment level would moderate the association between relationship

satisfaction and depressive symptoms, and that moderation by these relationship characteristics would be stronger for men than for women. By using a sample of emerging adults, we capitalized on the greater variability in interdependence and commitment levels seen among early adult romantic unions compared to adult marriages (e.g., Sprecher, 1988), which often show ceiling effects for these constructs (Impett, Beals, & Peplau, 2001; Tran & Simpson, 2009). We recruited a relatively large sample to power tests of moderation.

Method

Participants and Procedure

Participants were 484 undergraduate students (126 men, 358 women) currently involved in a dating relationship who volunteered to take part in a larger, IRB approved study of dating activities to fulfill course requirements at a large Midwestern university. The only inclusion criterion for the larger study was being between 18-25 years of age. Of the original 1,013 participants in the larger study, we selected the 518 (51%) who responded “yes” to the question, “*Are you currently in a romantic relationship?*” Because of our explicit interest in non-marital dating relationships, we excluded 34 participants who were married or engaged to their partners, yielding the final sample of 484. Participants completed a password-protected online survey that contained an informed consent form as well as self-report measures of a variety of personal and relationship characteristics. Only measures relevant to the present hypotheses are described in this paper.

In the present sample, participants were primarily White (86% White, 7.9% Black or African American, 2.1% Asian, 2.7% multiracial, and 2.5% Hispanic) and an average of 19.13 years old ($SD = 1.47$). Most participants (79.5%) described their relationship with their romantic partner as an exclusive dating relationship; 8.7% were casually dating the

partner, and 11.8% were regularly dating the partner. Mean relationship length was 17.86 months ($SD = 15.98$). Thirty-seven participants (7.6%) were cohabiting with their partners. Twelve participants (2.5%; 6 men and 6 women) were in same-sex relationships; the remainder were dating a partner of the opposite sex.

Measures

All participants completed the following measures in the order presented below.

Relationship status and length. Participants completed a personal information form that included items to assess relationship status and relationship length in months.

Relationship Satisfaction. Using the 16-item Couples Satisfaction Index (CSI-16; Funk & Rogge, 2007), participants provided ten global evaluations of their romantic relationship on 6- and 7- point Likert-type scales and described their relationship on a bipolar adjective scale for each of six characteristics (e.g., 0 = *Miserable*, 5 = *Enjoyable*). All ratings were then summed; higher scores indicate greater satisfaction. The CSI-16, which has demonstrated good reliability and validity with college age dating relationships, provides more precision and power than traditional measures of relationship satisfaction (Funk & Rogge, 2007). In this sample, internal consistency was excellent ($\alpha = .95$).

Commitment and Interdependence Constructs. Participants completed the Investment Model Scale (IMS; Rusbult et al., 1998), a questionnaire assessing three constructs that form the basis of relationship interdependence (investment, satisfaction, and quality of alternatives), and relationship commitment. The IMS has shown good internal consistency and validity (Rusbult et al., 1998). Each item is rated on a 9-point Likert scale (0 = *Do not agree at all*; 8 = *Agree completely*). The 5-item *Investment Size* subscale measures the magnitude and importance of irretrievable resources an individual

has put into a relationship (e.g., *I have put a great deal into our relationship that I would lose if the relationship were to end*). The 5-item *Quality of Alternatives* subscale measures the degree to which the participant's needs could be fulfilled in relationships other than with that the current partner (e.g., *If I weren't dating my partner, I would do fine- I would find another appealing person to date*). The 7-item *Relationship Commitment* subscale captures psychological attachment, long term orientation, and intention to persist in the relationship. The 5-item *Satisfaction* subscale was not used in this study. Scores on each subscale represent the mean rating across items. In this sample, internal consistency was high (Investment $\alpha = .90$; Quality of Alternatives $\alpha = .86$; Commitment $\alpha = .86$). As expected in this dating sample, scores ranged widely (from 0-8) on each subscale.

Depressive Symptoms. Depressive symptoms were assessed with the Center for Epidemiological Studies-Depression Scale (CESD; Radloff, 1977), which sums participants' ratings of how often they experienced a variety of symptoms in the past week (e.g., "I felt sad," "I had crying spells") on a 4-point scale (0 = *rarely or none of the time*; 3 = *most or all of the time*). The CESD has shown evidence of reliability and validity (e.g., Eaton & Kessler, 1981). In this sample, internal consistency was excellent ($\alpha = .90$), and scores were normally distributed. Using 16 as a cutoff score (e.g., Derogatis, Lynn, & Maruish, 1999), 188 participants (36.3%) reported clinically significant symptom levels.

Results

Means, standard deviations, and zero-order correlations among all variables are presented in Table 1. As expected, scores on the investment, alternatives, and commitment measures had means similar to those observed in other dating samples (e.g., corresponding means of 6.18, 3.46, and 6.25, respectively; Sprecher, 1988) and captured the full range of

potential scores (0-8), reflecting the wide variation in the relationships of these emerging adults. This contrasts with the uniformly high interdependence and commitment scores observed in marital samples (i.e., mean scores > 8 on a 1-9 scale; Impett et al., 2001; Tran & Simpson, 2009). Similarly, there was a wide range of relationship lengths, from less than 1 month to over 8 years. Preliminary analyses indicated some associations between demographic variables and the variables of interest: White participants reported more relationship satisfaction and commitment and less depression than those of other races ($p < .01$); men reported higher investments than women ($p < .01$); older (vs. younger) participants reported longer relationships and less satisfaction ($p < .05$); and cohabiting participants were in longer relationships than non-cohabitators. Also, as should be expected, those who were dating exclusively reported longer, more committed, more interdependent, and more satisfying relationships than those who were dating casually or regularly ($p < .001$). Based on these findings, all regression analyses were re-analyzed controlling for each demographic variable, cohabitation, and relationship status. Because the inclusion of these control variables did not alter the results conceptually or statistically, for simplicity, we present results from analyses that do not include them. Intercorrelations between the proposed moderators were low to moderate (excepting that between investments and commitment for men), which supports the decision to examine them separately.

Consistent with findings from married adults, there was a negative correlation between relationship satisfaction and depressive symptoms for both men, $r = -.19$, $p < .05$ (small effect), and women, $r = -.38$, $p < .001$ (medium to large effect), in this emerging adult sample. A Fisher r -to- z transformation revealed that, as hypothesized, this correlation was significantly stronger for women than for men ($z = 1.99$, $p < .05$).

Next, we assessed whether the relationship characteristics moderated the association between relationship satisfaction and depressive symptoms and examined whether any such moderation differed by gender. To do so, hierarchical regression analyses were performed to test for interactions among relationship satisfaction, gender, and each relationship characteristic (relationship length, investments, quality of alternatives, and relationship commitment) in the prediction of depressive symptoms. Although either satisfaction or symptoms could have been used as the outcome variable, we selected depressive symptoms based on the marital discord model of depression (Beach et al., 1990), which highlights the influence of couple functioning on depression. Following procedures outlined by Aiken and West (1991), we computed multiplicative interaction terms after centering each of the variables to avoid issues of multicollinearity. Relationship satisfaction, gender, and a relationship characteristic were entered at Step 1; the three two-way interactions were entered at Step 2; and the three-way interaction was entered at Step 3. Results of the regression analyses are summarized in Table 2. Three of four three-way interactions were present, indicating that the moderating effects of the relationship characteristics generally differed by gender. Therefore, to facilitate interpretation of findings, we calculated and plotted the two-way interactions between relationship satisfaction and each relationship characteristic separately for men and women.

Relationship length was explored first. A three-way interaction among relationship length, satisfaction, and gender was found. For men, relationship length moderated the association between relationship satisfaction and depressive symptoms, $\beta = -.20$, $\Delta F(1, 121) = 5.28$, $p = .02$ (see Figure 1a). Simple slopes analysis revealed a negative association between relationship satisfaction and depressive symptoms for all men; however, the

association was stronger for men in longer relationships, $\beta = -.40, p < .001$, than for men in shorter relationships, $\beta = -.17, p = .03$. Relationship length also had a moderating effect for women, $\beta = .09, \Delta F(1, 354) = 3.73, p = .05$. In contrast to the finding for men, the negative association between relationship satisfaction and depressive symptoms was *weaker* for women in longer relationships, $\beta = -.26, p < .01$ than for women in shorter relationships, $\beta = -.57, p < .001$ (see Figure 1b).

Investments were examined next. There was no three-way interaction among investments, relationship satisfaction, and gender. There was, however, a two-way interaction between investments and relationship satisfaction, $\beta = -.14, p < .01$, in this analysis (which included both men and women). Simple slope analysis indicated that, although a negative association between satisfaction and depressive symptoms was present at all level of investments, it was stronger for those with more investments, $\beta = -.52, p < .001$, than for those with fewer investments, $\beta = -.29, p < .001$. Because unequal sample sizes of men and women may have limited power to detect the three-way interaction (especially because the two-way interaction was weaker in the larger group; Aguinis, Petersen, & Pierce, 1999), and to facilitate comparisons with the other moderators, we estimated and plotted the two-way interaction between relationship satisfaction and investments separately for men and women. Investments moderated the association between relationship satisfaction and depression for men, $\beta = -.27, \Delta F(1, 121) = 7.27, p < .01$. Simple slopes analysis revealed a stronger negative association between satisfaction and depressive symptoms for men with more investments, $\beta = -.50, p < .001$ than for men with fewer investments, $\beta = -.20, p = .02$ (see Figure 1c). In contrast, investments did not moderate the association for women, $\beta = -.10, \Delta F(1, 353) = 3.40, p = .07$. There was a

moderate negative association between relationship satisfaction and symptoms for women regardless of level of investments, $\beta = -.51, p < .001$ and $\beta = -.39, p < .001$ for high and low investment levels, respectively (see Figure 1d). However, note that the moderating effect of investments did not significantly differ between men and women.

A three-way interaction among quality of alternatives, relationship satisfaction, and gender was found. As displayed in Figure 2a, quality of alternatives moderated the association between relationship satisfaction and depressive symptoms for men, $\beta = .31, \Delta F(1, 119) = 9.89, p < .01$. Simple slopes analysis indicated that there was a negative association between relationship satisfaction and depressive symptoms for all men, but it was much stronger for men with low quality of alternatives, $\beta = -.59, p < .001$, than for men with high quality of alternatives, $\beta = -.19, p = .01$. In contrast, quality of alternatives did not demonstrate a moderating effect among women, $\beta = .05, \Delta F(1, 352) = 1.02, p = .31$. There was a moderate negative association between relationship satisfaction and depressive symptoms for women regardless of quality of alternatives, $\beta = -.40, p < .001$ and $\beta = -.43, p < .001$ for high and low quality of alternatives, respectively (see Figure 2b).

Finally, there was a three-way interaction among relationship commitment, relationship satisfaction, and gender, indicating that the moderating effect of commitment differed by gender. As displayed in Figure 2c, relationship commitment moderated the association between relationship satisfaction and depressive symptoms for men, $\beta = -.41, \Delta F(1, 121) = 13.32, p < .001$. Simple slopes analysis indicated that there was a negative association between relationship satisfaction and depressive symptoms for men with high commitment, $\beta = -.49, p < .001$, but not for men with low commitment, $\beta = -.13, p = .15$. Relationship commitment also moderated the association between relationship satisfaction

and depressive symptoms for women, $\beta = -.14$, $\Delta F(1, 353) = 5.10$, $p = .03$. In contrast to the men, there was a negative association between relationship satisfaction and depressive symptoms for women regardless of commitment level. The association was stronger, however, for women with high relationship commitment, $\beta = -.66$, $p < .001$, than for women with low relationship commitment, $\beta = -.55$, $p < .001$ (see Figure 2d).

Discussion

In this study, we explored the cross-sectional association between relationship satisfaction and depressive symptoms in emerging adult romantic relationships. The first key finding was that the negative correlation between couple satisfaction and depressive symptoms, well-documented among married adults, was also present in the dating relationships of these 18-25 year olds. Together with the similar correlation observed in longer-term college relationships by Remen and Chambless (2001), these results suggest that young adults' emotional well-being is associated with the quality of their romantic relationships, despite how their relationships are generally less stable and committed than adult marriages (Arnett, 2000). This was particularly true for the emerging adult women. Relationship satisfaction accounted for around 14% of the variance in the women's depressive symptoms, representing a medium-sized effect quite similar to the 18% observed for married women in a meta-analysis (Whisman, 2001). Thus, the symptoms of women appear to be similarly associated with the quality of their romantic unions across stages of adulthood and across varying relationship types (i.e., dating vs. marriage). In contrast, for the emerging adult men, relationship satisfaction accounted for only 3% of the variance in depression, which was significantly smaller than for the female participants and notably less than the 14% observed across studies for married men (Whisman, 2001).

To understand the relatively weak negative association observed for men in our sample, it is helpful to consider the results pertaining to the second aim of our study, which was to explore whether the association between relationship satisfaction and depressive symptoms differs across types of dating relationships (i.e., relationships characterized by different lengths, size of investments, quality of alternatives, and commitment levels). Results revealed a consistent pattern of gender differences, in which the moderating effects of these four relationship characteristics were stronger for the male than for the female participants (although not significantly so for investment size). For men, the strength of the association between couple satisfaction and depression was highly contingent upon the nature of their relationships. Specifically, for men in relationships of above average length, interdependence (i.e., high investments and low alternatives quality), and commitment, the negative association between satisfaction and symptoms was fairly strong (simple slopes = $-.40$ to $-.59$) and similar to that of the women. In contrast, for men with below average levels of commitment there was no association between satisfaction and depressive symptoms. Further, for men in relatively newer relationships and those characterized by low interdependence levels (i.e., low investments or high quality of alternatives), the association was quite small (simple slopes = $-.17$ to $-.20$). These findings suggest that emerging adult men whose relationships have persisted longer than average and who perceive themselves as dependent upon and committed to their partners exhibit associations between relationship quality and depressive symptom levels; however, in the absence of these relationship characteristics, any such association is weak or nonexistent.

In contrast, relationship characteristics do not appear to moderate the strength of the association between relationship quality and depression as strongly for emerging adult

women. For the female participants, the negative association between relationship satisfaction and depressive symptoms was consistently strong (simple slopes = $-.39$ to $-.66$), regardless of interdependence and commitment levels. Neither indicator of interdependence - investments or quality of alternatives - moderated the association among women. Undergraduate women, once in a romantic relationship, show connections between their emotional well-being and their satisfaction with that relationship, even if they have invested few resources and have readily accessible high quality alternatives. Similarly, although commitment did moderate the association between relationship satisfaction and symptoms for women, that association was strong across commitment levels ($-.55$ for low, $-.66$ for high). As women become more emotionally attached to their partner and intent on maintaining the relationship long-term (i.e., committed), the association between depressive symptoms and relationship satisfaction may grow; nevertheless, it is present even for women in relatively uncommitted dating relationships.

This pattern of findings may explain why satisfaction appears to account for less variance in depressive symptoms among emerging adult men in dating relationships than among either their female counterparts or married men. Because men whose relationships were low in interdependence and commitment showed little to no association between relationship quality and symptom levels, the correlation between satisfaction and depression for the young men as a whole was likely weakened by their inclusion. In contrast, because emerging adult women's depressive symptoms were intertwined with their global relationship evaluations across all levels of the relationship characteristics, the overall association was not weakened by the relatively uncommitted and non-interdependent relationships of some of these women. Further, because marriages tend to

be uniformly high in commitment and dependence between partners (e.g., Impett et al., 2001), the present findings would lead one to expect a moderate to strong correlation between satisfaction and depression across all married men.

These observed gender differences are consistent with the theory that commitment may be a particularly important factor in determining how men experience and behave in romantic relationships (Stanley, 2010; Stanley, Rhoades, & Whitton, 2010). Within relatively unstable and uncommitted dating relationships, men may be less likely than women to behave in ways that benefit the relationship (Whitton et al., 2007) and, based on the present results, also less likely to show associations between depressive symptoms and relationship satisfaction. Given that in current Western cultures romantic unions prior to marriage are generally characterized by ambiguity about the future rather than clear commitment (e.g., Stanley et al., 2010), these results suggest that young heterosexual women may be at a disadvantage. When dating men, women may act in the interest of the relationship and be dependent upon it for their emotional well-being in ways that their male partners are not.

This type of gender asymmetry may be particularly pronounced in the very early stages of heterosexual college relationships. We found that in relatively new relationships, the association between relationship satisfaction and depressive symptoms was *stronger* for women - but *weaker* for men - than in relationships of longer duration. Possibly, young women become emotionally invested in their romantic relationships more quickly than do their male partners, leaving them more vulnerable to emotional distress in recently formed heterosexual unions. Although it is possible that the present results occurred by chance, confidence in them is strengthened by their consistency with previous findings from

longitudinal studies. Specifically, the within-person association between relationship quality and depressive symptoms was stronger in lengthier relationships for men but not women in one study (Kouros et al., 2008) and stronger in shorter-length relationships for women in another (Whitton et al., 2008). Together, these studies suggest the presence of intriguing gender differences in how relationship length may factor into associations between couple well-being and depression.

For men, it is possible that the association between couple dissatisfaction and depressive symptoms strengthens as relationships persist over time as a consequence of growing dependence and commitment. However, it is not clear why this would not also hold true for women. Further, in our sample, relationship length was only weakly correlated with commitment and investments and was not correlated with alternatives quality. This suggests that longer dating relationships are not reliably characterized by more interdependence or commitment than are shorter relationships. Therefore, future research should explore alternate mechanisms through which increased relationship length may amplify the connections between couple satisfaction and depressive symptoms for men. Similarly, further study is needed to explain how relationship length may *weaken* associations between couple satisfaction and depression for women. Previous researchers (Proulx et al., 2007; Whitton et al., 2008) have suggested that this may be explained by a self-selection bias, in which women in marriages of longer duration are a select group of less emotionally reactive women who have made it past the periods of highest risk for divorce. It is interesting, then, that we observed a similar moderating effect of relationship length among young women in dating relationships. In that light, our findings lend greater credibility to the interpretation that women in relatively new relationships are particularly

attentive to any problems in their relationship. As relationships are maintained over longer time periods, women's emotional reactivity to negative relationship events may become more limited (Whitton et al., 2008), despite how growing commitment may increase these associations. More research is clearly needed to test this and other potential explanations.

Several study limitations should be noted. First, the cross-sectional data prohibit any conclusions regarding the direction of effects. Although our discussion, based in theory (e.g., Beach et al., 1990), emphasized the influence of relationships on depressive symptoms, it is equally likely that emerging adults' symptoms influence their relationship evaluations or that the effects are bidirectional. Second, participants were all university students, which may limit generalizability of findings. Emerging adults without the financial or other resources to attend college may not engage in similarly prolonged exploration of relationship options. Consequently, the small to non-present associations between relationship satisfaction and depressive symptoms observed among the college men who were in relatively short, non-dependent, uncommitted relationships may not generalize to young men not in college. Third, only 13-15% of the variance in depressive symptoms was accounted for by the models, suggesting that other unmeasured factors are related to emerging adults' symptoms. Fourth, because we used self-report measures to assess all study constructs, shared method variance may account for some portion of the observed associations. Fifth, data were collected from individuals rather than from both members of a couple. As a result, findings do not take into account partner relationship satisfaction or depression, which may influence the associations (Whisman, Uebelacker, & Weinstock, 2004). In addition, the observed gender differences may have been overstated; studies using couple-level data tend to yield smaller differences between men and women

than do studies using individual level data (e.g., Kurdek, 2005). Sixth, the number of analyses may have inflated Type 1 error, and the unequal numbers of men and women may have limited power to detect a three-way interaction between gender, satisfaction, and investments (Aguinis et al., 1999). Finally, very few participants were in same-sex relationships; future research should evaluate whether current findings, particularly the gender differences, generalize to couples in which the partners are of the same sex.

The study findings have several clinical implications. The presence of an association between relationship satisfaction and depressive symptoms in this sample of dating college students supports recent efforts to provide relationship education to not just married or cohabiting adults, but also to single emerging adults (e.g., Fincham, Stanley, & Rhoades, 2011). Such programs, which help young people develop and maintain healthy romantic partnerships, may indirectly promote mental health. Similarly, our findings raise the possibility that couple therapies effective in treating comorbid depression and marital distress in adults may also be appropriate for young adults in unhappy dating relationships. It may therefore be important to assess relationship quality among college students seeking treatment for emotional distress; for women, this may be the case even if the dating relationship is casual. Finally, results suggest that young women may be more emotionally invested in new and relatively uncommitted relationships than are their male dating partners, consistent with past findings that women may engage in pro-relationship behaviors prior to the clear establishment of commitment, but men may not (e.g., Whitton et al., 2007). Together, these findings underscore the importance of advising young women, through such forums as relationship education and university counseling centers, to pay close attention to the commitment levels of their male partners.

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Table 1

Correlations, Means, and Standard Deviations Among Variables

Variables							Men (<i>n</i> = 126)			Women (<i>n</i> = 358)		
	1	2	3	4	5	6	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
1. Depressive Symptoms	--	-.19*	.08	-.03	.09	-.17	15.04	10.28	0-44	15.89	10.23	0-55
2. Relationship Satisfaction	-.38**	--	.04	.61**	-.52**	.74**	67.07	12.57	16-81	65.62	12.87	5-81
3. Relationship Length (months)	-.04	-.06	--	.25**	.02	.17	19.26	17.07	1-78	17.37	15.58	0-98
4. Investments	-.03	.30**	.27**	--	-.37**	.71**	5.99	1.81	0-8	5.48	1.89	0-8
5. Quality of Alternatives	.12*	-.35**	-.02	-.32**	--	-.52**	3.39	2.24	0-8	3.16	2.14	0-8
6. Relationship Commitment	-.13*	.65**	.18**	.51**	-.45**	--	6.57	1.68	0-8	6.72	1.52	0-8

Note. Correlations for men are reported above the diagonal; women are below the diagonal.

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

Table 2

Results of Hierarchical Regression Analysis

	Relationship Characteristic Moderator							
	Relationship Length		Investments		Quality of Alternatives		Relationship Commitment	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
<i>Step 1</i>		.11***		.12***		.11***		.12***
Relationship Satisfaction	-.34***		-.40***		-.40***		-.46***	
Gender	.02		-.02		-.05		-.03	
Relationship Moderator	-.02		.06		-.04		.03	
<i>Step 2</i>		.01		.02**		.02*		.04***
Satisfaction x Gender	-.07		-.05		-.01		-.14*	
Gender x Moderator	-.06		.02		.02		.19**	
Satisfaction x Moderator	.02		-.14**		.12*		-.21***	
<i>Step 3</i>		.02**		.00		.01*		.01*
Satisfaction x Gender x Moderator	.13**		.07		-.11*		.12*	
<i>Total R²</i>		.14***		.14***		.14***		.17***

Note. Betas presented for each predictor are from the final models. For Step 3, $\Delta F(1, 475) = 9.27, p < .01$ for relationship length, $\Delta F(1, 474) = 1.65, p = .20$ for investments, $\Delta F(1, 471) = 4.69, p = .03$ for quality of alternatives, and $\Delta F(1, 474) = 4.20, p = .04$ for relationship commitment.

* $p < .05$, ** $p < .01$, *** $p < .001$.

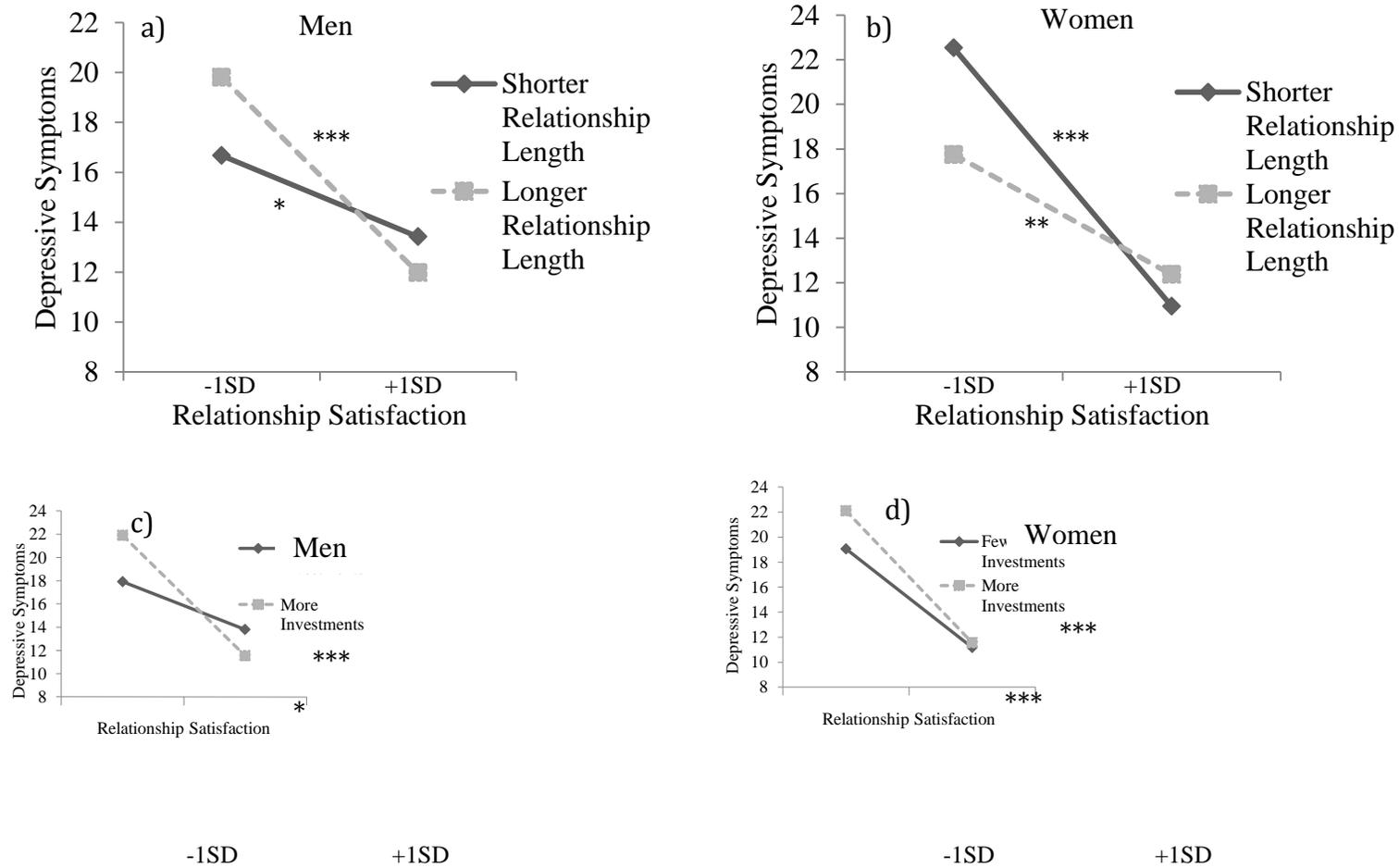


Figure 1. Interaction effects of relationship satisfaction and relationship length for a) men and b) women and of relationship satisfaction and investments on depressive symptoms for c) men and d) women. Note: The three-way interaction among relationship satisfaction, investments, and gender was not significant. * $p < .05$, ** $p < .01$, *** $p < .001$.

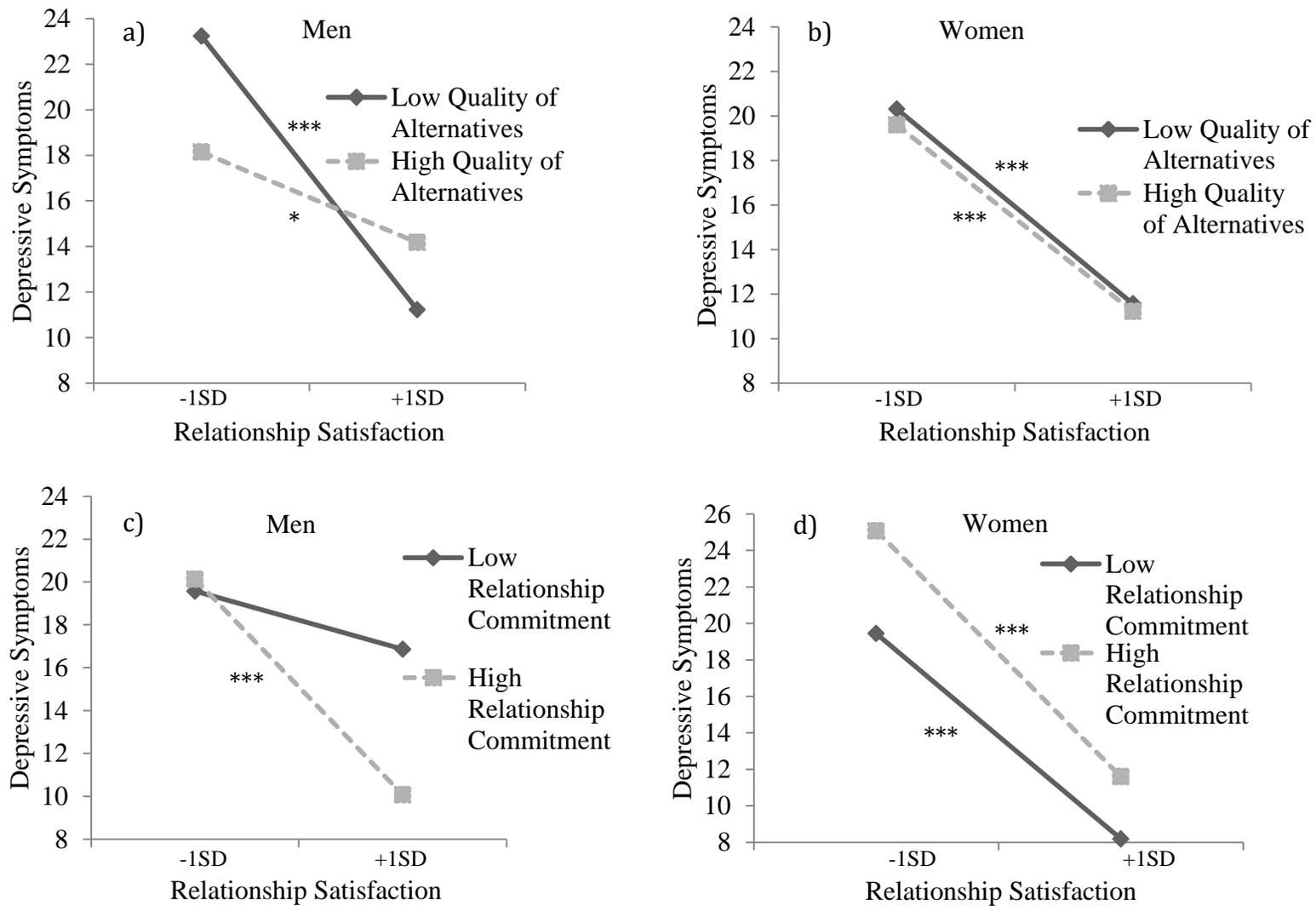


Figure 2. Interaction effects of relationship satisfaction and quality of alternatives on depressive symptoms for a) men and b) women and the interaction effects of relationship satisfaction and relationship commitment for c) men and d) women. Note: * $p < .05$, ** $p < .01$, *** $p < .001$.