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Depressive Symptoms in Early Marriage: Predictions From Relationship Confidence and Negative Marital Interaction

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The authors proposed a model of depressive symptoms in early marriage in which relationship confidence, defined as perceived couple-level efficacy to manage conflicts and maintain a healthy relationship, mediates the effect of negative marital interactions on depressive symptoms. The model was tested in a sample of 139 couples assessed prior to marriage and 1 year later. As predicted, relationship confidence demonstrated simple negative associations with negative marital interaction and depressive symptoms for all participants. Longitudinal path analyses supported the mediational model for women only. In women but not men, negative marital interaction indirectly had an impact on depressive symptoms through the mediator of relationship confidence. Findings suggest that relationship confidence may be important to understanding links between marital distress and depressive symptoms, especially in women.

Keywords: marriage, depression, negative interaction, gender differences

Depression is a major public health problem, affecting 15%–20% of people at some point in their lifetime (e.g., Kessler, Berglund, Demler, Jin, & Walters, 2005). Given that depression, and even subclinical levels of depressive symptoms, are linked with poor psychosocial functioning and later psychopathology (e.g., Lewinsohn, Solomon, Seeley, & Zeiss, 2000), it is important to gain a greater understanding of its risk factors. Although risk for depression is multidetermined, there is solid evidence that marital distress is one significant risk factor. Numerous studies have documented a robust association between marital distress and depression, both at diagnostic and subclinical levels of depressive symptoms (reviewed by Whisman, 2001). Furthermore, marital distress prospectively predicts depression onset, tripling the probability of a major depressive episode in the coming year (Whisman & Bruce, 1999). However, it is not clear which aspects of distressed marriages place spouses at greatest increased risk for depression. More research is needed to elucidate the specific mechanisms through which marital discord influences depression to better inform intervention efforts (e.g., Halford, Markman, Kline, & Stanley, 2003). Toward this aim, using longitudinal data from just prior to marriage to 1 year later, we examined *relationship confidence*, which we propose is directly linked to changes in depressive symptoms and a mediator of the effect of negative marital interaction on such symptoms.

Negative Marital Interaction and Depressive Symptoms

Patterns of negative interaction between spouses are a well-documented characteristic of marital distress (e.g., Clements, Stanley, & Markman, 2004; Karney & Bradbury, 1995) and increased risk for depression. Interactions characterized by hostility, poor problem solving, and destructive demand–withdraw patterns have been associated with depression and depressive symptoms in one or both spouses (e.g., Johnson & Jacob, 1997; Uebelacker, Courtnage, & Whisman, 2003). Although the effects between depression and marital interactions are likely bidirectional, we focused on the role of destructive marital communication in the development of depressive symptoms. This is consistent with the marital discord model of depression, which posits that destructive marital interactions are key factors leading to depression (Beach, Sandeen, & O'Leary, 1990), and

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findings that an extended increase in marital conflict is the most frequent life event reported as preceding depression onset in married women (Paykel et al., 1969). We hypothesized that negative marital interaction would be associated cross-sectionally and prospectively with depressive symptoms during the 1st year of marriage.

Relationship Confidence and Depression

A major focus of this research was on the construct of relationship confidence as a predictor of depressive symptoms. Relationship confidence was defined as the belief that one's relationship will be successful into the future. Broadly, relationship confidence represents the overall perception that a relationship has the aspects of safety essential for marital success: day-to-day interaction free of emotional threat and a secure sense of a future together (Stanley, Markman, & Whitton, 2002). As such, relationship confidence involves a sense of efficacy to successfully manage couple conflicts and a generalized positive expectancy for the relationship.

Efficacy Theory

Self-efficacy, defined as belief in one's capability to produce desired effects through one's actions (Bandura, 1997), is clearly a protective factor against depression. Behavioral, cognitive, and social–cognitive theories of depression all suggest that a sense of efficacy (vs. helplessness) in the face of stress or frustration decreases risk for depression (Abramson, Seligman, & Teasdale, 1978; Bandura, 1997; Beck, Rush, Shaw, & Emery, 1979). Consistent with these theories, research has demonstrated a negative association between self-efficacy and depression (e.g., Schafer, Wickrama, & Keith, 1998; Saltzman & Holahan, 2002). Self-efficacy in the domain of interpersonal relationships may be a particularly important determinant of depression; low interpersonal efficacy has been linked with depressive symptoms (Smith & Betz, 2002) and has predicted increases in depressive symptoms over time (Holahan & Holahan, 1987). Furthermore, perceived competence or efficacy specific to managing relationship conflict has been negatively associated with depressive symptoms (S. R. Jenkins, Goodness, & Buhrmester, 2002).

To resolve marital conflicts, individuals must collaborate with their spouses. In such instances, individuals experience the mode of agency called collective efficacy, or a shared belief in their collective ability to produce desired results (Bandura, 1997). Kaplan and Maddux (2002) found that *collective efficacy in marital relationships*, defined as level of a spouse's belief that the couple is capable of accomplishing its shared goals, was positively associated with marital satisfaction. Similarly, *relational efficacy*, defined as the couple's expectancy about their ability to successfully resolve issues, has been negatively associated with distress-maintaining cognitions such as perceived helplessness (Fincham & Bradbury, 1987b) and the attribution of negative partner behavior to stable, dispositional causes (Vanzetti, Notarius, & NeeSmith, 1992). Such cognitions have shown a robust association with depression (Sweeney, Anderson, & Bailey, 1986).

Expectancy for a Positive Future

The other major aspect of relationship confidence is the expectancy for a future as an intact, happy, and healthily functioning couple. As such, the construct of relationship confidence encompasses more than either the mere probability of relationship persistence (which could simply represent constraint commitment; Stanley & Markman, 1992) or the efficacy to solve particular relationship issues (Vanzetti et al., 1992). Positive expectancy for the relationship's future makes working to keep the relationship healthy worthwhile, whereas the lack of such confidence is consistent with demoralization and hopelessness—key features in certain types of depression.

In summary, a strong sense of relationship confidence is hypothesized to be in direct opposition to the depressogenic dynamics of helplessness and hopelessness. We hypothesized that the more confident that individuals feel in their ability as a couple to maintain a healthy relationship, the less likely they would be to experience high or increasing levels of depressive symptoms. That is, we predicted relationship confidence would be negatively associated with depressive symptoms, both concurrently and prospectively.

Relationship Confidence: Mediator of the Effect of Negative Marital Interaction on Depression?

We have thus far hypothesized that both negative spousal interaction and low relationship confidence contribute to elevated depressive symptoms in early marriage. We also expected that repeated, unsuccessful attempts to resolve marital conflicts, as indicated by the presence of negative interaction patterns, would likely contribute to low relationship confidence. Given that low relationship confidence has been predicted to, in turn, contribute to increased depressive symptoms over time, we also predicted that relationship confidence would mediate the effect of negative marital interaction on depressive symptoms. Consistent with this hypothesis, in a sample of married couples, general self-efficacy (not specific to the relationship) mediated the effect of stress in marital interactions on changes in depression over time (Schafer et al., 1998).

Gender Differences

Women are around twice as likely as men to have experienced depression, in the form of either major depressive disorder or subdiagnostic symptoms (e.g., Kessler, 2003; Kessler et al., 1997). Moreover, although marital distress is associated with depression in men and women, it tends to account for significantly more variance in wives' depression levels than husbands' (Whisman, 2001), and there is some longitudinal evidence that it exerts a greater prospective effect on depression for women than for men (Dehle & Weiss, 1998; Fincham, Beach, Harold, & Osborne, 1997).

Therefore, we tested all hypotheses separately for men and women.

The Current Study

We investigated the effects of negative interaction and relationship confidence on the course of depressive symptoms during the transition to marriage. First, we explored the cross-sectional relationships between variables, testing the hypotheses that both negative interaction and confidence would be associated with concurrent depressive symptoms and that confidence would mediate the effect of negative interaction on depressive symptoms. Then, to address potential causal relations, we examined the associations longitudinally with a path model. We hypothesized that negative interaction would be indirectly related to changes in depressive symptoms over time through the mediator of relationship confidence.

Finally, we tested alternate models to explain the associations between these variables. First, we tested whether confidence might moderate, rather than mediate, the effect of negative interactions on depressive symptoms (i.e., whether the effect of negative interaction on depressive symptom levels is buffered by relationship confidence). Second, because global marital adjustment has tended to be associated with most relationship-related constructs, including marital interaction and relationship efficacy (Vanzetti et al., 1992) and depressive symptoms (Whisman, 2001), it is plausible that any effects observed between confidence and other variables could be explained by overall relationship adjustment. To address this possibility, we explored the specificity of relationship confidence as a predictor by testing whether it was a more powerful predictor of depressive symptoms in early marriage than was relationship adjustment.

Method

Participants and Procedure

Participants were 139 couples participating in a larger project studying the effects of premarital intervention. Recruitment for the larger study was designed to identify a nonconvenience community sample representative of the couples marrying in religious organizations (ROs) in the city. We recruited a sample of 105 large ROs, who then invited couples seeking marriage at their organization to participate in the study (for details, see Stanley et al., 2001). A total of 306 couples from recruited ROs participated in premarital training (either the Prevention and Relationship Enhancement Program [e.g., Stanley, Blumberg, & Markman, 1999] or naturally occurring interventions at their RO). This report is based on data from 139 couples who completed preintervention, postintervention, and 1-year follow-up assessments. Although some couples were lost to breakup or death (5 and 2 that we know of, respectively, but likely more who gave no reason), the reduced sample size was primarily due to low participation at 1-year follow-up, which we believe was related to the project's recruitment method. In contrast to most studies, couples did not seek participation in either the study or the intervention but sought marriage from a participating RO, who encouraged study participation. Therefore, the sample was not defined by an initial desire to participate in a longitudinal research project, which may have increased the participants' likelihood of not participating in this follow-up. (Improved direct contact with couples increased participation rates at later follow-ups.) To assess whether participation was related to any key variables, we conducted a multivariate analysis of variance comparing the 139 couples in the current sample to all other couples on preintervention levels of all variables used in the current analyses. Although the overall test was significant $F(5, 269) = 3.24$, $p < .01$, the groups differed only on self-reported negative interaction; couples included in the current study had significantly lower scores ($M = 2.09$, $SD = 0.78$) than the others ($M = 2.32$, $SD = 0.96$).

Because the present focus was not on intervention outcomes but on predictors of depressive symptoms during the transition to marriage, we confined our analyses to time points that did not include intervening intervention efforts. Data were drawn from the postintervention assessment, referred to in this article as Time 1, and the 1-year follow up, referred to as Time 2.

Of the participants, 83.1% were White; 10.1% were Hispanic, 4.7% were African American, and 2.1% indicated "other." The average age was 28.69 years ($SD = 5.84$; range = 19–56), and median personal annual income was $20,000–$29,000. The average education level was 15.52 years ($SD = 2.13$). At Time 2, couples had been married an average of 12.48 months (range = 1.00–84.97 months). Twenty-seven couples (19.4%) were married before Time 1, 107 (77.0%) were married between Time 1 and Time 2, and 5 (3.6%) were married after Time 2.

At each assessment, partners completed self-report measures and a videotaped problem solving discussion, in which couples were asked to discuss their top problem area, identified earlier on a questionnaire. Informed consent was obtained, and couples were paid $40–$100 at each assessment. The study was approved and monitored by a university institutional review board.

Measures

Relationship confidence. We assessed relationship confidence using the Confidence Scale (CS), developed by Stanley, Hoyer, and Trathen (1994) to measure individuals' confidence in the future of their relationship (included as the Appendix). Participants rated their level of agreement with 10 items (e.g., "I believe we can handle whatever conflicts will arise in the future") on a 7-point scale. CS scores reflected participants' mean response (1–7) across items. The CS has demonstrated internal consistency and evidence of construct validity (e.g., Kline, Stanley, et al., 2004; Stanley et al., 2001). In this sample, the CS demonstrated good internal consistency ($\alpha = .83$) and unidimensionality; all items loaded highly (>.50) on one factor. As might be expected in an engaged sample, most participants reported high relationship confidence. For men, scores ranged from 5.0 to 7.0 ($M = 6.57$; $SD = 0.47$) but were not skewed. For women, scores ranged from 2.9 to 7.0 ($M = 6.70$; $SD = 0.47$) and were negatively skewed, primarily because of two outliers. To address potential problems associated with such nonnormality, we reran all analyses, either removing these two outliers or replacing them with the next lowest value. Substantive results were unchanged; therefore, in this article we present analyses using all original data.

Negative interaction. We assessed negative interaction using self-report and observational methods. First, we obtained participants' self-reported perceptions of negative marital interaction using the Negative Communication Subscale of the Communication Skills Test (N. Jenkins & Saiz, 1995). Participants rated the frequency of negative interaction events, including withdrawal,

negative conflict, escalation, and invalidation, on a 7-point scale ranging from 1 (*never*) to 7 (*most of the time*). The subscale has previously shown internal consistency and evidence of validity (Stanley et al., 2001; Whitton, Stanley, Markman, & Baucom, 2005). In this sample, internal consistency was good ($\alpha = .85$), and there was variability across men (range = 1.00–5.38; $SD = 0.78$) and women (range = 1.00–5.01; $SD = 0.84$).

Second, observed negative interaction was assessed by coding the couple's behavior during the problem-solving discussions with the Interaction Dynamics Coding System (Julien, Markman, & Lindahl, 1989), designed to assess specific dimensions of communication that are central components of constructive and destructive interactions. Interaction Dynamics Coding System codes discriminate between distressed and nondistressed couples (Julien et al., 1989). Intercoder consistency for the larger study from which the current data were drawn was high; intraclass correlations ranged from .66 to .95 (*Mdn* = .87; Kline, Julien, et al., 2004). Five negative dimensions (withdrawal, denial, conflict, dominance, and negative affect) and one dyadic aspect (negative escalation) of interactions were coded on a 9-point scale and averaged to create the Negative Interaction scale. The scale showed good internal consistency ($\alpha = .88$) and variability across men (range = 1.17–6.67; $SD = 1.23$) and women (range = 1.00–6.50; $SD = 1.19$).

Relationship adjustment. We assessed relationship adjustment at Time 1 with the widely used Marital Adjustment Test (MAT; Locke & Wallace, 1959). Although the measure generally shows good internal consistency (e.g., Stanley & Markman, 1992), it was somewhat low in this sample ($\alpha = .61$). This sample was on average highly satisfied (female $M = 127.40$; male $M = 128.58$), but scores showed variability (male $SD = 13.73$, range = 57.0–158.0; female $SD = 16.23$, range = 66.0–154.0).

Depressive symptoms. We measured depressive symptoms using the Center for Epidemiological Studies Depression Scale (CESD; Radloff, 1977). Respondents rate how often they experienced 20 depressive symptoms during the past week (e.g., "I felt sad," "I could not get going") on a 4-point scale ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). This scale has demonstrated high levels of internal consistency and construct validity (Radloff, 1977). In the current sample, internal consistency was good ($\alpha = .84$ at Time 1; $\alpha = .84$ at Time 2), and there was variability across participants (see Table 1). In this sample, 10% of women and 8% of men at Time 1 and 9% of women and 8% of men at Time 2 had scores ≥ 16, which is the cutoff for clinically significant depression (Radloff, 1977). Correlations between Time 1 and Time 2 CESD scores were moderate, consistent with previous studies showing moderate correlations in the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) from premarriage to 18 months postmarriage (e.g., Beach & O'Leary, 1993; Cohan & Bradbury, 1997). Although mean group scores did not differ between time points, many individuals' CESD scores did show substantial change; raw change scores ranged from 18 to −24 for men and from 18 to −29 for women.

Results

In all analyses, male and female data were analyzed separately to avoid problems associated with nonindependence of data and to allow for identification of gender differences in the proposed associations. Approximately 2% of data values were missing, primarily because of computer malfunctions, classifying them as completely at random missing data. We imputed these data using the Expectation Maximization algorithm implemented by SPSS 13.1.

Preliminary Correlations

First, simple correlations were used to assess the cross-sectional associations between negative interaction, relationship confidence, and depressive symptoms at Time 1. In Table 1, male correlations are presented above the diagonal, female correlations are presented below the diagonal. Consistent with predictions, scores on both negative marital interaction measures were positively associated with depressive symptoms, and relationship confidence was negatively correlated with depressive symptoms for both genders. As predicted, relationship confidence was inversely correlated with self-reported and objectively coded negative interaction. Simple longitudinal correlations showed that higher negative interaction and lower relationship confidence at Time 1 were correlated with higher Time 2 depressive symptoms for both genders.

Mediation Analyses

Next, we tested whether relationship confidence mediated the effect of negative marital interaction on depressive symptoms in the cross-sectional data from Time 1. According to the simple correlations, the data met the prerequisites

Table 1
Correlations, Means, and Standard Deviations for Observed Variables

Variable	1	2	3	4	5	6	*M*	*SD*	Range
1. Negative interaction (self-report) at Time 1	—	.38**	−.44**	−.61**	.41**	.29**	2.17	0.78	1.0–5.4
2. Negative interaction (observed) at Time 1	.40**	—	−.20*	−.30**	.23**	.18*	3.29	1.23	1.2–6.7
3. Relationship confidence at Time 1	−.43**	−.39**	—	.48**	−.29**	−.21*	6.57	0.47	5.0–7.0
4. Marital adjustment at Time 1	−.58**	−.36**	.61**	—	−.34**	−.22**	128.58	13.73	66.0–154.0
5. Depressive symptoms at Time 1	.20*	.24**	−.34**	−.28**	—	.36**	6.26	5.64	0.0–28.0
6. Depressive symptoms at Time 2	.23**	.22**	−.46**	−.24*	.53**	—	5.50	5.19	0.0–22.0
M	2.13	3.23	6.70	127.44	7.16	6.38			
SD	0.84	1.19	0.58	16.23	6.57	6.15			
Range	1.0–5.1	1.0–6.5	2.9–7.0	57.0–158.0	0.0–34.7	0.0–28.0			

Note. Male data are above the diagonal; female data are below the diagonal.
* $p < .05$. ** $p < .01$.

for mediation for both genders (Baron & Kenny, 1986): The predictor variables (self-reported and observed negative interaction) were each correlated with both the outcome variable (depressive symptoms) and the proposed mediator (relationship confidence), and the mediator was associated with the outcome variable. For each of the negative interaction variables separately, we conducted multiple regression analyses using Baron and Kenny's (1986) method for testing mediation. According to this strategy, full mediation has occurred if the effect of the predictor variable is reduced to nonsignificance after the effect of the mediator is taken into account. Results are shown in Table 2.

For women, when depressive symptom scores were simultaneously regressed onto negative interaction (either self-report or observed) and relationship confidence scores, the effect of relationship confidence on depressive symptoms remained significant, whereas the effect of negative interaction became nonsignificant, indicating full mediation. Sobel's tests (Sobel, 1982) also indicated that the mediated effect of each negative interaction variable through relationship confidence was significant for women. In contrast, for men, relationship confidence did not mediate the association between self-reported negative interaction and depressive symptoms. Rather, in the model that included self-reported negative interaction and relationship confidence as predictors of depressive symptoms, only self-reported interaction had a significant predictive effect. In addition, confidence only partially mediated the association between observed negative interaction and depressive symptoms for men; although the Sobel test indicated that there was a significant mediating effect, observed negative interaction continued to contribute unique variance to the prediction of depressive symptoms.

Path Analyses

To further test the hypothesized role of relationship confidence in the development of depression, we used path analyses to test the longitudinal effects of relationship confidence and negative interaction on depressive symptoms. Path analysis allows a series of hypothesized regression equations to be analyzed simultaneously to generate an estimated covariance matrix, which can be evaluated against the actual sample covariance matrix. The extent to which the estimated covariance matrix "fits" the actual covariance matrix indicates how well the hypothesized model represents the data. We created all path models using LISREL 8.72 (Jöreskog & Sörbom, 1996). On the basis of Hu and Bentler's (1999) suggestions, we assessed the fit of our models using the nonnormed fit index (NNFI; a.k.a., Tucker–Lewis index), the root-mean-square error of approximation (RMSEA), the standardized root-mean-square residual (SRMR), and chi-square. We used cutoff scores of ≥ 0.95 for NNFI, <0.06 for RMSEA, and <0.08 for SRMR to assess goodness of fit. Because chi-square tests the null hypothesis that the model fits the data, a nonsignificant chi-square ($p > .05$) indicates that the model has acceptable fit. The significance of individual paths was evaluated through t values with a cutoff value of $\pm$ 1.96 ($p < .05$).

To test the prediction that relationship confidence would (a) predict later depressive symptoms and (b) account for the effect of negative marital interaction on later depressive symptoms, we created a path model in which Time 2 depressive symptoms were regressed on the following set of variables from Time 1: self-reported negative interaction, objectively coded negative interaction, relationship confidence, and depressive symptoms. Time 1 depressive symptoms were included so that associations of negative interaction and relationship confidence with later depressive symptoms were assessed controlling for earlier symptoms. Direct paths between each negative interaction variable and depressive symptoms were constrained to zero. Conceptually, this means the data were forced to fit a model in which the effects of negative interaction on depression were entirely mediated through relationship confidence.

Results are illustrated in Figure 1. For women, the model fit the data very well, $\chi^2(2, N = 139) = 0.0065$, $p = 1.00$,

Table 2
The Prediction of Concurrent Depressive Symptoms

Variable	Multiple regression results				Sobel test of mediation
	β	$t(136)$	R^2	$F(2, 136)$	z score
Women					
Negative interaction (self-report)	.07	0.79	12.0**	9.30	1.97*
Relationship confidence	−.31**	−3.50			
Negative interaction (observed)	.12	1.40	12.9**	10.05	2.18*
Relationship confidence	−.29**	−3.39			
Men					
Negative interaction (self-report)	.35**	4.02	18.2**	15.09	1.51
Relationship confidence	−.14	−1.59			
Negative interaction (observed)	.18*	2.14	11.4**	8.76	2.06*
Relationship confidence	−.26**	−3.11			

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

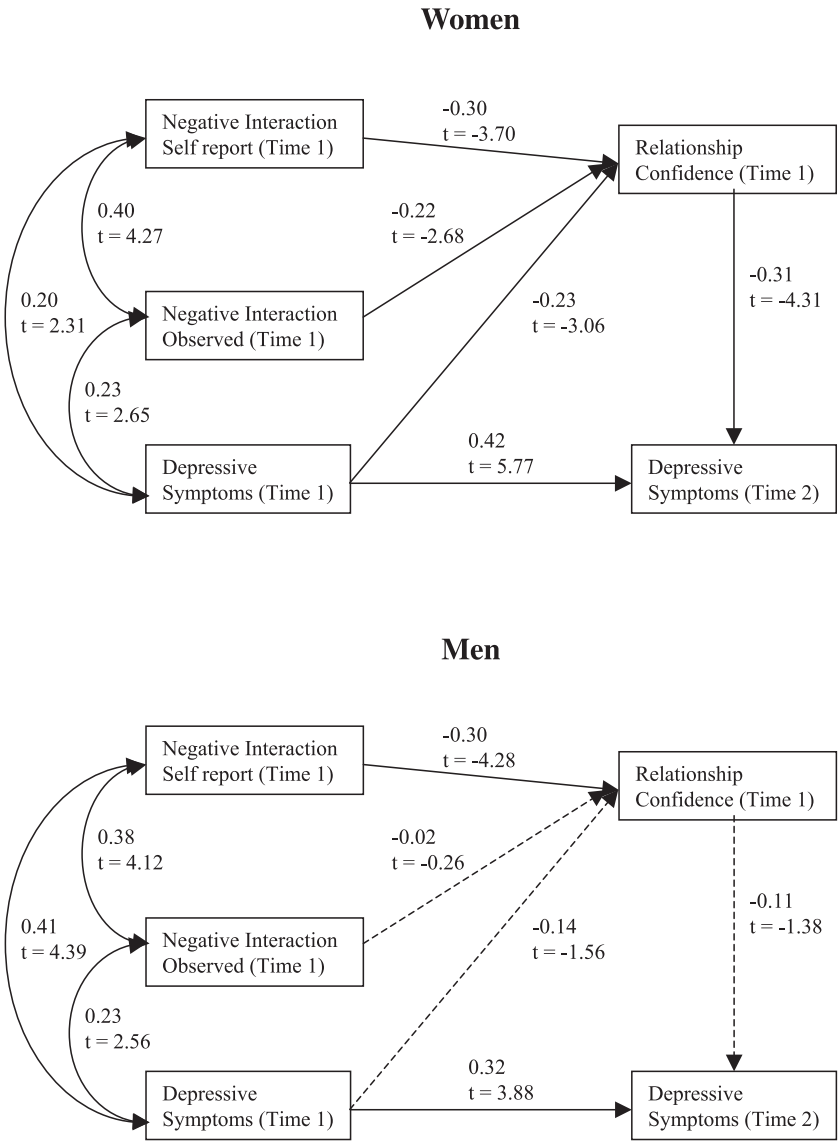

Figure 1. Path diagram of the associations between negative marital interaction, relationship confidence, and depressive symptoms. Dotted lines indicate nonsignificant paths.

NNFI = 1.00, RMSEA = 0.0, confidence interval (CI) = 0.0–0.0, SRMR = 0.0012. The negative coefficient for the path between Time 1 relationship confidence and Time 2 CES-D indicates that, as hypothesized, higher confidence was related to lower depressive symptoms 1 year later, controlling for earlier symptoms. Furthermore, modification indices were reported as zero, indicating that the expected increase in model fit as a result of adding direct paths from the negative interaction variables to depression would be null. Together, these results indicate that the model in which relationship confidence fully mediated the effect of negative interaction on depressive symptomatology provided a good fit to the data for women.

For men, although the data fit the specified mediational model, $\chi^2(2, N = 139) = 2.87$, $p = .24$, NNFI = 0.96, RMSEA = 0.056, CI = 0.0–0.19, SRMR = 0.034, the path from observed negative communication to relationship confidence was not significant, and the path from confidence to Time 2 depression was also not significant. In fact, the only significant paths were from self-reported negative interaction to relationship confidence and from Time 1 to Time 2 depressive symptoms. Modification indices indicated that adding direct paths from the negative interaction variables to Time 2 depression would not improve the fit of the model. Together, these results indicate that after earlier depressive symptoms were accounted for, neither negative interactions nor relationship confidence were predictive of Time 2 depressive symptoms in the men.

Comparison Models

Moderation models. To test whether the observed associations might be better explained by a model in which relationship confidence moderates the impact of negative interaction on depression, we used hierarchical regression analyses. First, to test for cross-sectional moderation, we regressed Time 1 depressive symptoms onto negative interaction and relationship confidence and then onto an interaction term created by multiplying relationship confidence by negative interaction. All variables were centered to avoid issues of multicollinearity. Regression analyses were run separately for each negative interaction variable and for each gender. Interaction terms were nonsignificant in all analyses (all ps $> .10$), indicating that relationship confidence did not moderate the concurrent association between negative marital interaction and depressive symptoms. Second, to test for longitudinal moderation, we computed parallel hierarchical regressions that predicted Time 2 depressive symptoms, first controlling for Time 1 depressive symptoms. Again, the interaction term (Relationship Confidence $\times$ Negative Interaction) was not significant in any of the regression models (all ps $> .10$).

Relationship adjustment. In the interest of comparing relationship confidence to overall marital adjustment as both a predictor of depressive symptoms and a mediator of the effect of negative interaction on depressive symptoms, we retested the path models, replacing confidence with overall marital adjustment (MAT score). The resulting figures are not presented to conserve space. For both women and men, the model fit the data, $\chi^2(2, N = 139) = 1.80$, $p = .41$, RMSEA = 0.00, CI = 0.0–0.17, NNFI = 1.00, SRMR = 0.024 for women; and $\chi^2(2, N = 139) = 2.84$, $p = .24$, RMSEA = 0.056, CI = 0.0–0.19, NNFI = 0.96, SRMR = 0.034 for men. However, there was no evidence that marital adjustment mediated the associations between negative interaction and later depression. Only self-reported negative interaction demonstrated a significant path to MAT score ($b = -0.50$, $t = -6.74$ for women; $b = -0.38$, $t = -4.28$ for men), whereas observed negative interaction did not ($b = -0.12$, $t = -1.63$ for women; $b = -0.02$, $t = -0.26$ for men). Furthermore, Time 1 MAT was not related to Time 2 depressive symptoms, as indicated by a nonsignificant path coefficient ($b = -0.10$, $t = -1.31$ for women; $b = -0.11$, $t = -1.38$ for men).

Discussion

In this article, we proposed a model in which relationship confidence plays a key role in the course of depressive symptoms during early marriage, both directly affecting depressive symptoms and serving as a mechanism through which negative marital interactions have harmful, indirect effects on symptom levels. Results provide support for the proposed model for women but not men. Specifically, for women, relationship confidence fully mediated the concurrent association between negative interaction and depressive symptoms. Moreover, in the longitudinal path model, negative interaction did not have a direct path to later depression but was directly related to confidence, which was, in turn, related to later depression. This suggests negative interactions may indirectly lead to increases in female depressive symptoms through the mechanism of reduced relationship confidence. This interpretation is strengthened by the lack of support for alternate models. Results indicate confidence does not moderate the association between negative interaction and depression. Furthermore, an alternative model in which negative interaction mediates the association between confidence and depressive symptoms was ruled out for women by the Time 1 mediation analyses showing confidence, not negative interaction, as the mediator when predicting depressive symptoms, as well as the null modification indices from the path model, which showed no direct path from negative interaction to later depression.

In contrast, the data do not support the mediational model for men. Although, in cross-sectional analyses for men, higher negative marital interaction was associated with lower relationship confidence, which was related to higher depressive symptoms, there was no evidence for confidence mediating the concurrent association between interactions and depression. Moreover, the male longitudinal path models showed that neither relationship confidence nor negative marital interaction was associated with depressive symptoms 1 year later after earlier symptoms were controlled. This finding cannot be explained by a lack of remaining variance in male Time 2 depressive symptoms after Time 1 symptoms were accounted for, as the association between Time 1 and Time 2 symptoms was weaker for men than women.

These observed gender differences are consistent with the general finding that relationship functioning and depressive symptoms are more strongly associated in women than men (Whisman, 2001). These findings are also consistent with several longitudinal studies that have demonstrated a greater prospective effect of marital functioning on depression for women than for men (Dehle & Weiss, 1998; Fincham et al., 1997); however, at the same time, these findings are inconsistent with other longitudinal studies that have found no gender differences (e.g., Beach & O'Leary, 1993; Whitton et al., 2005). Future studies are needed to clarify these inconsistent findings. In addition, the more robust association between negative interactions and relationship confidence in women than in men is consistent with evidence that cognitive attributions tend to be more strongly linked with specific relationship factors, including interactions, in wives than husbands (Sanford, 2005).

The current results for women extend previous findings that destructive marital interaction is a risk factor for increased depressive symptomatology (e.g., Beach et al., 1990) by identifying relationship confidence as a mechanism through which marital conflict influences the course of wives' depressive symptoms. Our findings suggest that destructive patterns of communication contribute to lower relationship confidence for both genders (although more robustly for women), and such diminished relationship confidence may, in turn, promote depressive symptoms in wives. Given the feelings of helplessness to resolve marital problems and hopelessness about the future that are captured by low relationship confidence, this finding is

consistent with theories of depression that emphasize the contributions of helplessness and hopelessness (e.g., Abramson et al., 1978).

Tests of a comparison model suggested that confidence may be a better predictor of change in depressive symptoms than is overall relationship adjustment, at least in highly satisfied couples during early marriage. This is striking given that omnibus measures of adjustment tend to account for a wide degree of variance on many dimensions associated with marital outcomes (e.g., Fincham & Bradbury, 1987a). The theoretical specificity of the current model provides a stronger foundation for guiding the refinement of prevention and early marriage intervention approaches than do more theoretically general models focusing on overall marital quality.

Although the current findings clearly require replication, we offer some preliminary speculation on clinical implications. Currently, couples therapy for the treatment of marital distress that is comorbid with depression (most often in the wife) focuses strongly on improving the couple's communication (Mead, 2002). The current findings are supportive of this approach; the prospective effect of negative marital interactions on wives' depressive symptoms suggests that reducing negative interactions might reduce their depressive symptoms. However, our results indicate that negative interaction only indirectly affects wives' depressive symptoms through its negative impact on relationship confidence. This implies that changing both behavior and thought patterns about the relationship (i.e., confidence) may be important in the treatment of comorbid depression and marital distress. Behavior change alone, without changes in perceptions of relationship confidence, may not be sufficient for ideally effective intervention.

Although replication of these findings is clearly needed before confident conclusions are drawn, there are several features of this study that strengthen our confidence in the results. First, the proposed model was based on strong theory from both the depression and marital literatures. Second, results were consistent across analyses with cross-sectional and longitudinal data. Third, associations between negative interaction and other constructs were consistent across self-reported and observed methods of measurement. Finally, alternate models, including confidence as a moderator of the effect of marital interaction on depressive symptoms, were not supported.

However, there are several important limitations of the current research. Foremost, the sample was not representative of all couples in a number of ways. Most participants were White; findings may not generalize to couples from other ethnic backgrounds. In addition, all couples participated in premarital education and therefore may differ from couples not participating in such programs. It is also possible that premarital education, which emphasizes the importance of constructive conflict resolution, may sensitize couples to the ill effects of negative interaction, increasing the extent to which negative interactions influence their relationship confidence. This raises the possibility that relationship confidence may be a mechanism through which negative marital interaction affects female depressive symptoms only in couples who have received premarital training. Additional research is clearly needed to determine whether this model applies to other couples. Also, subject attrition may have been selective so that the sample differed in important ways from those who did not participate in Time 2. Finally, the sample comprised nonclinical couples during engagement and the newlywed period; therefore, participants had generally high levels of satisfaction and confidence and low depressive symptom levels. This limits generalizability to couples at other relationship stages with a wider range of relationship and individual well-being. Also, the somewhat restricted range on these measures may have limited power to detect true effects between confidence and depressive symptoms for men.

It should also be noted that, even for women, the effect sizes between relationship variables and depressive symptoms were fairly small, leaving much of the variance in depressive symptoms unexplained. This highlights the importance of identifying other factors that also influence the course of depressive symptoms in early marriage. In addition, because of dependence between the male and female data, we were unable to test the statistical significance of gender differences in the path models (i.e., factorial invariance tests were not appropriate).

Despite these limitations, this study provides promising initial evidence that relationship confidence may be an important mechanism through which marital conflict influences female depressive symptoms during early stages of marriage. For men, results suggest that relationship variables do not affect depressive symptoms during this period. Although the consistency of the current findings across cross-sectional and longitudinal data is suggestive of robust associations, replication will be crucial for building the knowledge base that can directly inform interventions.

References

Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87,* 49–74.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Beach, S. R., & O'Leary, K. D. (1993). Marital discord and dysphoria: For whom does the marital relationship predict depressive symptomatology? *Journal of Social and Personal Relationships, 10,* 405–420.

Beach, S. R., Sandeen, E. E., & O'Leary, K. D. (1990). *Depression in marriage: A model for etiology and treatment.* New York: Guilford Press.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 561–571.

Clements, M. L., Stanley, S. M., & Markman, H. J. (2004). Before they said "I do": Discriminating among marital outcomes over 13

years based on premarital data. *Journal of Marriage and Family, 66,* 613–626.

Cohan, C. L., & Bradbury, T. N. (1997). Negative life events, marital interaction, and the longitudinal course of newlywed marriage. *Journal of Personality and Social Psychology, 73,* 114–128.

Dehle, C., & Weiss, R. L. (1998). Sex differences in prospective associations between marital quality and depressed mood. *Journal of Marriage and the Family, 60,* 1002–1011.

Fincham, F. D., Beach, S. R. H., Harold, G. T., & Osborne, L. N. (1997). Marital satisfaction and depression: Different causal relationships for men and women? *Psychological Science, 8,* 351–356.

Fincham, F. D., & Bradbury, T. N. (1987a). The assessment of marital quality: A reevaluation. *Journal of Marriage and the Family, 49,* 797–809.

Fincham, F. D., & Bradbury, T. N. (1987b). Cognitive processes and conflict in close relationships: An attribution–efficacy model. *Journal of Personality and Social Psychology, 53,* 1106–1118.

Halford, W. K., Markman, H. J., Kline, G. H., Stanley, S. M. (2003). Best practice in couple relationship education. *Journal of Marital and Family Therapy, 29,* 385–406.

Holahan, C. K., & Holahan, C. J. (1987). Self-efficacy, social support, and depression in aging: A longitudinal analysis. *Journal of Gerontology, 42,* 65–68.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1–55.

Jenkins, N., & Saiz, C. C. (1995). *The Communication Skills Test.* Unpublished manuscript, University of Denver, Denver, CO.

Jenkins, S. R., Goodness, K., & Buhrmester, D. (2002). Gender differences in early adolescents' relationship qualities, self-efficacy, and depression symptoms. *Journal of Early Adolescence, 22,* 277–309.

Johnson, S. L., & Jacob, T. (1997). Marital interactions of depressed men and women. *Journal of Consulting and Clinical Psychology, 65,* 15–23.

Jöreskog, K., & Sörbom, D. (1996). *LISREL 8: User's reference guide.* Chicago: Scientific Software International.

Julien, D., Markman, H. J., & Lindahl, K. (1989). A comparison of a global and a microanalytic coding system: Future trends in studying interactions. *Behavioral Assessment, 11,* 81–100.

Kaplan, M., & Maddux, J. E. (2002). Goals and marital satisfaction: Perceived support for personal goals and collective efficacy for collective goals. *Journal of Social and Clinical Psychology, 21,* 157–164.

Karney, B. R., & Bradbury, T. N. (1995). Assessing longitudinal change in marriage: An introduction to the analysis of growth curves. *Journal of Marriage and the Family, 57,* 1091–1108.

Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective Disorders, 74,* 5–13.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of *DSM–IV* disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry, 62,* 593–602.

Kessler, R. C., Zhao, S., Blazer, D. G., & Swartz, M. (1997). Prevalence, correlates, and course of minor depression and major depression in the national comorbidity survey. *Journal of Affective Disorders, 45,* 519–530.

Kline, G. H., Julien, D., Baucom, B., Hartman, S. G., Gilbert, K., Gonzales, T., et al. (2004). The Interactional Dimensions Coding System: A global system for couple interactions. In P. K. Kerig & D. H. Baucom (Eds.), *Couple observational coding systems* (pp. 113–127). Mahwah, NJ: Erlbaum.

Kline, G. H., Stanley, S. M., Markman, H. J., Antonio Olmos-Gallo, P., St. Peters, M., Whitton, S. W., et al. (2004). Timing is everything: Pre-engagement cohabitation and increased risk for poor marital outcomes. *Journal of Family Psychology, 18,* 311–318.

Lewinsohn, P. M., Solomon, A., Seeley, J. R., & Zeiss, A. (2000). Clinical implications of "subthreshold" depressive symptoms. *Journal of Abnormal Psychology, 109,* 345–351.

Locke, H. J., & Wallace, K. M. (1959). Short marital adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living, 21,* 251–255.

Mead, D. E. (2002). Marital distress, co-occurring depression, and marital therapy: A review. *Journal of Marital and Family Therapy, 28,* 299–314.

Paykel, E. S., Myers, J. K., Dienelt, M. N., Klerman, G. L., Lindenthal, J. J., & Pepper, M. P. (1969). Life events and depression: A controlled study. *Archives of General Psychiatry, 21,* 753–760.

Radloff, L. S. (1977). The CESD Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385–401.

Saltzman, K. M., & Holahan, C. J. (2002). Social support, self-efficacy, and depressive symptoms: An integrative model. *Journal of Social and Clinical Psychology, 21,* 309–322.

Sanford, K. (2005). Attributions and anger in early marriage: Wives are event-dependent and husbands are schematic. *Journal of Family Psychology, 19,* 180–188.

Schafer, R. B., Wickrama, K. A. S., & Keith, P. M. (1998). Stress in marital interaction and change in depression: A longitudinal analysis. *Journal of Family Issues, 19,* 578–594.

Smith, H. M., & Betz, N. E. (2002). An examination of efficacy and esteem pathways to depression in young adulthood. *Journal of Counseling Psychology, 49,* 438–448.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equation models. In S. Leinhart (Ed.), *Sociological methodology* (pp. 290–312). San Francisco: Jossey-Bass.

Stanley, S. M., Blumberg, S. L., & Markman, H. J. (1999). Helping couples fight for their marriages: The PREP approach. In R. Berger & M. Hannah (Eds.), *Handbook of preventive approaches in couple therapy* (pp. 279–303). New York: Brunner/Mazel.

Stanley, S. M., Hoyer, L., & Trathen, D. W. (1994). *The Confidence Scale.* Unpublished manuscript, University of Denver, Denver, CO.

Stanley, S. M., & Markman, H. J. (1992). Assessing commitment in personal relationships. *Journal of Marriage and the Family, 54,* 595–608.

Stanley, S. M., Markman, H. J., Prado, L. M., Olmos-Gallo, P. A., Tonelli, L., St. Peters, M., et al. (2001). Community-based premarital prevention: Clergy and lay leaders on the front lines. *Family Relations, 50,* 67–76.

Stanley, S. M., Markman, H. J., & Whitton, S. (2002). Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process, 41,* 659–675.

Sweeney, P. D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review. *Journal of Personality and Social Psychology, 50,* 974–991.

Uebelacker, L. A., Courtnage, E. S., & Whisman, M. A. (2003). Correlates of depression and marital dissatisfaction: Perceptions of marital communication style. *Journal of Social and Personal Relationships, 20,* 757–769.

Vanzetti, N. A., Notarius, C. I., & NeeSmith, D. (1992). Specific and generalized expectancies in marital interaction. *Journal of Family Psychology, 6,* 171–183.

Whisman, M. A. (2001). The association between depression and marital dissatisfaction. In S. R. H. Beach (Ed.), *Marital and family processes in depression: A scientific foundation for clinical practice* (pp. 3–24). Washington, DC: American Psychological Association.

Whisman, M. A., & Bruce, M. L. (1999). Marital dissatisfaction and incidence of major depressive episode in a community sample. *Journal of Abnormal Psychology, 108,* 674–678.

Whitton, S. W., Stanley, S. M., Markman, H. J., & Baucom, B. R. (2005). *The short-term within-individual association between relationship satisfaction and depressive symptoms.* Manuscript submitted for publication.

Appendix

Confidence Scale

Please answer each question below by indicating how strongly you agree or disagree with the idea expressed related to your marriage or dating relationship. You can circle any number from 1 to 7 to indicate various levels of agreement or disagreement with the idea expressed.

1	2	3	4	5	6	7
Strongly disagree			*Neither agree nor disagree*			*Strongly agree*

1. I believe we can handle whatever conflicts will arise in the future.	1	2	3	4	5	6	7
2. I don't have much confidence in the future of my relationship.*	1	2	3	4	5	6	7
3. I am not at all sure that we can make this relationship work for the long haul.*	1	2	3	4	5	6	7
4. I feel good about our prospects to make this relationship work for a lifetime.	1	2	3	4	5	6	7
5. We may not have what it takes to keep this relationship going.*	1	2	3	4	5	6	7
6. We can handle just about anything that comes our way.	1	2	3	4	5	6	7
7. I am not sure that we can avoid divorce or breaking up in the future.*	1	2	3	4	5	6	7
8. I am very confident when I think of our future together.	1	2	3	4	5	6	7
9. We have the skills a couple needs to make a marriage last.	1	2	3	4	5	6	7
10. Our risk for divorce or breakup is probably greater than average.*	1	2	3	4	5	6	7

Note. Asterisks indicate a reverse-scored item.

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