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Perceived Criticism and Marital Adjustment Predict Depressive Symptoms in a Community Sample

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Abstract

Depressive symptoms are related to a host of negative individual and family outcomes; therefore, it is important to establish risk factors for depressive symptoms in order to design prevention efforts. Following studies in the marital and psychiatric literatures regarding marital factors associated with depression, we tested two potential predictors of depressive symptoms: marital adjustment and perceived spousal criticism. We assessed 249 spouses from 132 married couples from the community during their first year of marriage and at three time points over the next ten years. Initial marital adjustment significantly predicted depressive symptoms for husbands and wives at all follow-ups. Further, perceived criticism significantly predicted depressive symptoms at the five- and ten-year follow-ups. However, at the one-year follow-up, this association was significant for men but not for women. Finally, a model where the contributions of marital adjustment and perceived criticism were tested together suggested that both play independent roles in predicting future depressive symptoms. These findings highlight the potential importance of increasing marital adjustment and reducing perceived criticism at the outset of marriage as a way to reduce depressive symptoms during the course of marriage.

Keywords

depressive symptoms; marital adjustment; perceived criticism; marital conflict; expressed emotion

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Depression is one of the top contributors to the burden of disease worldwide and has enormous economic, physical, and social consequences (Kessler et al., 2003; World Health Organization, 2008). It is increasingly becoming recognized that sub-clinical levels of depressive symptoms are also associated with a variety of both negative individual and family outcomes (Ayuso-Mateos, Nuevo, Verdes, Naidoo, & Chatterji, 2010; Kessler, Zhao, Blazer & Swartz, 1997; Magruder & Calderone, 2000). For example, depressive symptoms are related to problems with physical health, such as the onset of coronary artery disease (Wulsin & Singal, 2003) and non-adherence to medical treatment recommendations (DiMatteo, Lepper, & Croghan, 2000). Parental depressive symptoms are associated with marital dissatisfaction (Whisman, 2001), as well as poor parenting (Cummings & Davies, 1994; Downey & Coyne, 1990; Dix & Meunier, 2009) and children's adjustment problems (Brennan et al., 2000; Cummings, Keller, & Davies, 2005; Luoma et al., 2001). Because of their impact and widespread prevalence, depressive symptoms are of growing public health concern (Magruder & Calderone, 2000). Therefore, identifying early predictors of later depressive symptoms may be of great importance because it would allow professionals to focus on delivering preventive interventions to specific groups at high risk for depressive symptoms and would inform practitioners about potential clinical targets of such prevention efforts.

Theory and empirical evidence suggest that poor marital functioning plays a role in the development of depressive symptoms. In fact, marital adjustment has been implicated in both onset (Whisman & Bruce, 1999) and relapse (Hooley & Teasdale, 1989) in major depressive disorder and depressive symptoms over time (Kouros, Papp, & Cummings, 2008; for reviews, see Rehman, Gollan & Mortimer, 2008; Whisman, 2001). In a meta-analysis, Whisman (2001) concluded that, cross-sectionally, global marital dissatisfaction accounts for 18% and 14% of the variance in women's and men's depressive symptoms, respectively. What is more, in a newlywed sample followed over the first four years of marriage, within-person changes in marital satisfaction and depression were related to each other (Davila, Karney, Hall, & Bradbury, 2003). In another sample, initial marital dissatisfaction predicted depression three years later (Du Rocher Schudlich, Papp, & Cummings, 2011). Therefore, it is clear that marital adjustment and depressive symptoms are related; however, continued replication of such effects, including studying even longer follow-ups, would be profitable. Doing so would add impetus for early marital interventions that could potentially increase initial levels of marital adjustment and hence possibly lower the risk for depressive symptoms over the course of marriage.

Beyond the broad construct of marital adjustment, there may be specific factors associated with poor marital adjustment that may also lead to depressive symptoms. One of these specific factors is criticism. The marital discord model of depression suggests that marital conflict predicts depression in part because of negative spousal behavior, such as criticism (Beach, Sandeen, & O'Leary, 1990). In addition, criticism, as a form of social rejection or rejection/humiliation, has also been linked to depression (Kendler, Hettema, Butera, Gardner, & Prescott, 2005; Slavich, O'Donovan, Epel, & Kemeny, 2010). Therefore, converging evidence from the social/romantic relationship field indicates that criticism from one's spouse may be a specific marital predictor of depressive symptoms.

Evidence from another area of research, the expressed emotion (EE) literature, also supports the notion that criticism plays an important role in depression. Relatives' observationally-coded criticism of patients is a strong predictor of depressive relapse (Hooley, 2007). An even stronger predictor of depression is patients' report of perceived criticism (Hooley & Teasdale, 1989). In fact, one study with a sample of depressed inpatients demonstrated that perceived criticism from spouses is a stronger predictor of depressive relapse at nine months than is overall marital adjustment (Hooley & Teasdale, 1989). This finding suggests that there is something specific about perceived criticism as opposed to the more general construct of marital adjustment that might make people prone to developing depression. Despite such findings regarding perceived criticism's ability to predict relapse, other studies investigating perceived criticism and short-term relapse rates in inpatient samples ($ns < 60$) have been mixed (Andrew, Hawton, Fagg, & Westbrook, 1993; Hayhurst Cooper, Paykel, Vearnals, & Ramana, 1997; Okasha et al., 1994; see Renshaw, 2008 for a review). Therefore, some authors suggest that perhaps perceived criticism is a stronger predictor of depression in less severely depressed samples (Kronmüller et al., 2008; Sherrington et al., 2001). The current study will extend and replicate findings in this literature by examining the extent to which an association between perceived criticism and later depressive symptoms exists at one-, five-, and ten-year follow-ups in a community (non-clinical) sample ($n = 249$ spouses).

In addition to a gap in the literature regarding perceived criticism's ability to prospectively predict short-term depressive symptoms in community couples, few studies have investigated the ability of perceived criticism to predict depression beyond nine months or one year. One recent study of five- and ten-year follow-ups of patients hospitalized with major depression failed to find an association between initial perceived criticism and depressive relapse (Kronmüller et al., 2008). However, the authors noted that this study had methodological problems, namely a lack of power and that some patients were no longer living with their partners at the ten-year follow-up. Given that perceived criticism is most strongly related to outcomes when it is rated by patients who live with the person they are rating (Renshaw, 2007), it may be more powerful to examine longer-term follow-ups in a sample where participants are still living with their partners. Thus, our study examines depressive symptoms in married partners who are still living with their partner at all follow-ups.

Lastly, it is important to note that both marital adjustment and perceived criticism are related to one another in a variety of samples (e.g., Hayhurst et al., 1997; Hooley & Teasdale, 1989; Smith & Peterson, 2008). Given the strong link between perceived criticism and marital adjustment, it is important to test the contributions of both in regards to their prediction of depressive symptoms. In a study of inpatients hospitalized for depression, Hooley and Teasdale (1989) found that perceived criticism predicted significant variance in depressive relapse beyond overall marital adjustment, but marital adjustment did not significantly predict variance in depressive relapse when added to a model already containing perceived criticism. If perceived criticism accounts for much of the variance in relapse predicted by marital adjustment, this finding would further highlight the importance of attending to both cognitive and behavioral reasons for why partners perceive high levels of criticism. It would

also support the development of treatments that specifically target perceived criticism, as opposed to general marital adjustment. On the other hand, if general marital adjustment also predicted relapse, it would imply a continued focus on overall marital adjustment, including other factors, such as cohesion, that might be important in protecting against depression. Therefore, it is important to see whether perceived criticism and marital adjustment both make contributions to depressive symptoms in community samples to inform future prevention and intervention efforts.

The Present Study

The current study uses a sample of 249 spouses to investigate the contributions of self-reported marital adjustment and perceived spousal criticism, assessed around the first year of marriage (T1), in the prediction of depressive symptoms approximately one (T2), five (T6), and ten years later (T11). We specifically chose one-, five-, and ten-year follow-ups in order to mirror what has been previously assessed in the perceived criticism literature. It is important to note, however, that our measure of perceived criticism is slightly different than the traditional measure of perceived criticism used in the psychiatric literature, the Perceived Criticism Measure (PCM; Hooley & Teasdale, 1989). Our measure specifically addresses “criticizing or belittling opinions, feelings, or desires” whereas the PCM asks, “How critical is your spouse of you?” Given this difference and that the number of response options for the scales differ, our results cannot be directly compared to results from studies using the PCM, but to the extent that they represent similar concepts of social rejection/criticism, they serve a useful comparison.

The first purpose of the study was to test whether early marital adjustment predicts depressive symptoms both in the short and long term. Recent evidence has shown that marital adjustment can predict depressive symptoms three years later (Du Rocher Schudlich et al., 2011), so we hypothesized that marital adjustment at T1 would predict depressive symptoms one (T2) and five (T6) years later. To our knowledge, no study has examined outcomes ten years later, so based on the shorter-term findings, we predicted that there would also be an association between T1 marital adjustment and depressive symptoms ten years later (T11).

The second purpose of the study was to test the extent to which perceived criticism predicts depressive symptoms in a community sample of married couples over time. Given that in recent studies of clinical patients, perceived criticism has failed to predict depressive relapse from two to ten years later (i.e., Fielder et al., 1998 as cited in Kronmüller et al., 2008; Kronmüller et al., 2008; Sherrington et al., 2001), and that no known studies have looked at whether perceived criticism may be a useful predictor of depressive symptoms in community samples of married couples, we thought it was important to examine the predictive effects of perceived criticism in this sample. We hypothesized that perceived criticism at T1 would predict depressive symptoms one year later at T2. This finding would replicate previous studies of various clinical samples at short-term follow-ups (Hooley & Teasdale, 1989; Renshaw et al., 2001; see Renshaw, 2008 for a review). Based on literature described earlier, we were less certain that T1 perceived criticism would robustly predict depressive symptoms at longer follow-ups (T6 and T11).

Third, because poor marital adjustment and perceived criticism are related, we also sought to determine whether each would predict depressive symptoms when controlling for the other. This test is similar to one of the foremost studies on perceived criticism (i.e. Hooley & Teasdale, 1989) that tested the contributions of marital adjustment in comparison to perceived criticism in the prediction of depression in a clinical sample. We predicted that both marital adjustment and perceived criticism at T1 would predict depressive symptoms at T2 while in a model together. We were less certain whether such effects would hold over longer periods of time (T6 or T11) for perceived criticism because of the failure of perceived criticism to predict depressive relapse in inpatient samples over periods longer than one year (see Fielder et al., 1998 as cited in Kronmüller et al., 2008; Kronmüller et al., 2008; Sherrington et al., 2001).

Fourth, for all of the associations tested above, we wished to see whether there were gender differences. Men and women have differing rates of depression (e.g., Nolen-Hoeksema, 1987), and studies have shown that there are gender differences in associations between marital factors and depressive symptoms (for reviews, see Rehman, Gollan, & Mortimer, 2008; Whisman, 2001). Therefore, we sought to examine potential gender differences, especially in regard to perceived criticism, as many previous inpatient samples in this literature have not had enough power to examine gender differences.

Method

Participants

Participants were 249 spouses (female $n = 124$) from 132 couples. All participants were drawn from a larger longitudinal study comparing the effects of different premarital education services as described in more detail below in the Procedure section (for additional procedural details and results, see Laurenceau, Stanley, Olmos-Gallo, Baucom, & Markman, 2004; Markman, Rhoades, Stanley, & Peterson, 2013; Stanley et al., 2001). For the current study, we used the first assessment during marriage as the initial time point (T1). At T1, participants had been married for an average of 0.92 years ($SD = 0.40$, $Range = 0.02$ – 1.81 years). At this point, participants were on average 28.43 years of age ($SD = 5.74$, $Range = 19.00$ – 53.00 years). The majority of participants were White (83.1%); of the remaining participants, 0.8% identified as Asian ethnicity/race, 3.6% as African American, 10.8% as Hispanic, 1.2% as Native American, and one participant did not specify ethnicity/race. Participants had an average of 15.76 years of education ($SD = 2.07$; $Range = 11$ – 27 years) and the median income range was \$30,000–\$39,000. Most participants were in first marriages, but 3.6% of males and 4.0% of females were in a second marriage.

Procedure

As part of the larger study, couples were recruited from the religious organizations that would perform their weddings. After recruitment, couples were randomly assigned to receive either: (1) the premarital training services naturally occurring at their religious organization (delivered by religious organization staff); (2) the Prevention and Relationship Enhancement Program (PREP; Markman, Stanley, & Blumberg, 2010) delivered by research staff at a university; or (3) PREP delivered by religious organization staff at their religious

organization. PREP is a 12-hour psycho-educational program delivered in a workshop format that covers topics related to decreasing relationship risk factors (e.g., recognizing communication danger signs that threaten relationship safety, learning communication and conflict management skills, learning problem solving skills) and increasing protective factors (e.g., fun, friendship, commitment, support, sensuality) for a happy and healthy marriage.

Initially, 306 couples were recruited, but 14 couples were excluded from the analyses because they did not speak English or did not marry during the course of the study. This left 292 eligible couples at the beginning of the study before the intervention. Of those spouses, 272 spouses completed a first year assessment (this would have been their third assessment after the intervention), with 269 spouses having complete first year data.¹ Only some of these spouses completed an assessment at two, five, or ten years after their first year of marriage thus, leaving us with a total sample of 249 spouses that met the criteria for the current study.

We used data from the first two years of marriage ($M = 0.92$ years married, $SD = 0.40$; $Range = 0.02$ – 1.81 years) as the initial time point (T1), choosing data points closest to couples' first anniversaries, to predict later depressive symptoms assessed at annual assessments closest to couples' second, sixth, and eleventh anniversaries (T2, T6, and T11, respectively). These time-points correspond to one-, five-, and ten-year follow-ups from T1. If participants had two data points near the time of interest, we used the assessment closest to the actual date of interest that had the most complete data. We made these decisions for several reasons. First, we wanted to maximize power and minimize bias from missing data. Therefore, we included couples who completed an assessment just before or after their anniversaries. Second, we wanted to minimize the impact of the intervention on change in predictors (i.e. perceived criticism and marital adjustment). Thus, we chose the first year of marriage as T1 instead of premarital and pre-intervention data. Finally, given the importance of perceived criticism from individuals with whom participants live (Renshaw, 2007), we felt it was important that couples were married and presumably living together when they completed their assessment of perceived criticism. In the end, we had complete data for 179 participants for times T1 and T2 ($M = 2.66$ years married, $SD = 0.54$; $n = 92$ females); 206 participants at T1 and T6 ($M = 5.97$ years married, $SD = 0.44$; $n = 103$ females); and 153 participants at T1 and T11 ($M = 10.98$ years married, $SD = 0.46$; $n = 75$ females). These numbers equate to 249 participants in total coming from 132 couples.

Couples either came into the laboratory to complete self-report measures and videotaped interactions (not presented here) or they completed self-report forms by mail. Couples were paid between \$40–\$100 for participating in each assessment. All procedures were approved by a university Institutional Review Board.

¹Couples who provided data during their first two years of marriage at T1 did not differ significantly from couples who did not in terms marital adjustment or perceived criticism at the pre-test. These groups of couples also did not significantly differ on most demographic variables. However, individuals who participated at T1 had significantly more years of education, $t(65) = 3.05$, $p < .01$, and were less likely to be of ethnic minority status, $\chi^2(1) = 6.39$, $p < .05$.

Measures

Mean scores for all measures are presented in Table 1.

Depressive symptoms—The Centers for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) was used to measure depressive symptoms at every time point. The CES-D is a 20-item, 4-point scale of depressive symptoms that participants experienced in the past week. Participants make ratings between 0 (*rarely or none of the time, less than once a day*) and 4 (*most or all of the time, five to seven days*). The CES-D has good reliability and validity in a range of samples, including both clinical and general samples (Radloff, 1977). In the current sample the internal consistency was 0.85, 0.86, 0.89, and 0.90 at T1, T2, T6, and T11, respectively. The percentage of the sample scoring at or above the CES-D clinical cutoff of 16 was 8.0% at T1, 10.6% at T2, 9.7% at T6, and 12.4% at T11. These percentages are comparable to those found in other community samples (5–9% for women and 2–3% for men; American Psychiatric Association, 2000, p.372).

Marital adjustment—We used the Marital Adjustment Test (MAT; Locke & Wallace, 1959) to measure marital adjustment. This is a widely used 16-item measure assessing several domains of marital adjustment, including disagreements, commitment, cohesion, and overall happiness. This measure has adequate internal consistency and test-retest reliability (Freeston & Pléchaty, 1997; Locke & Wallace, 1959). In the current sample, internal consistency at T1 was 0.67. As can be seen in Table 1, the majority of couples had high levels of marital adjustment, as would be expected for a newlywed sample. Only 8.4% of individuals had scores in the distressed range during their first year of marriage at T1. (This cutoff was based on a score of 100 or less, which has been used in previous studies to differentiate between distressed and non-distressed couples; e.g., Crane, Middleton, & Bean, 2000; Markman, Rhoades et al., 2010; Rogge & Bradbury, 1999.)

Perceived criticism—The standard way of assessing perceived criticism is to use one item from the Perceived Criticism Measure (Hooley & Teasdale, 1989), rated on a 10-point scale that asks, “How critical is your spouse of you?” This one-item measure has been used in numerous studies assessing perceived criticism (see Renshaw, 2008 for a review) and has been found to be a valid measure (Hooley & Parker, 2007). To assess perceived criticism in our study, we used a different one-item measure which asks how often “My partner criticizes or belittles my opinions, feelings, or desires.” This item was gleaned from a larger 9-item scale, the Communication Danger Signs Scale (Stanley & Markman, 1997). This larger scale measures negative aspects of marital quality, including feeling lonely in the relationship, withdrawal, and thinking about marrying someone else. It has been successfully used in other studies of marital outcomes (Allen, Rhoades, Stanley, & Markman, 2010; Doss, Rhoades, Stanley, & Markman, 2009; Markman, Rhoades, Stanley, Ragan, & Whitton, 2010; Owen, Quirk, Bergen, Inch, & France, 2012). Responses on the criticism item were made on a 3-point Likert scale (1 = *almost never*, 2 = *once in a while*, 3 = *frequently*). Given that the perceived criticism item was highly positively skewed, and also that only four participants had a score of “3” at T1, we collapsed across scores of “2” and “3” to indicate the presence of criticism.² According to this dichotomized variable, 24.90 % of spouses at T1 indicated the presence of perceived criticism.

Results

Data Analytic Models

We used multilevel models and HLM 6.08 (Raudenbush, Bryk, & Congdon, 2004) to account for dependencies in our data. We used models with three levels in which individuals were nested within couples, who were nested with religious organizations. The reason for including religious organization as a third level in the model is because couples who came from the same religious organization were likely more similar than were couples from different religious organizations. That is, data from the same religious organization were non-independent (for other examples from this data set, see Laurenceau et al., 2004; Owen et al. 2011). Marital adjustment and depression were grand-mean centered to reduce multicollinearity and to make their intercept terms meaningful. Gender was coded as -0.5 for females and $+0.5$ for males. For perceived criticism, we dichotomized the 3-point scale as 0 (*almost never*) and 1 (*once in a while/frequently*) as noted earlier. Additionally, given that depressive symptoms at T1 were correlated with both marital adjustment and criticism at T1 (see Table 1), we controlled for T1 depressive symptoms in all analyses. Controlling for initial depressive symptoms at T1 allowed us to determine that predictive effects were not simply due to correlations with initial depression severity. (It is interesting to note, however, that the pattern of results obtained in the final analyses was similar whether or not we controlled for T1 depressive symptoms.)

Preliminary Data Analyses

Before conducting our main analyses, we ran several preliminary analyses. First, because participants were part of a larger effectiveness study of premarital intervention, we tested whether associations in the current study differed between the group that received naturally-occurring premarital services and those who received PREP. Although a few of the differences approached significance, the only association to reach significance was that group moderated the association between marital adjustment at T1 and depressive symptoms at T2. Upon exploration of this interaction, we found that marital adjustment was more positively related to depressive symptoms in the naturally-occurring group than in the PREP group that received services in the university setting (DU PREP); however, the association between marital adjustment and depressive symptoms in the naturally-occurring group was not significant. On the other hand, for the DU PREP group, there was a significant negative association between higher marital adjustment and more severe depressive symptoms. Because there were so few indicators of moderation by intervention group and because it was not an aim of this study to assess such differences, the main analyses excluded intervention group as a predictor.

Main Analyses

Our main analyses examined how marital adjustment and perceived criticism during the first year of marriage (T1) predicted depressive symptoms approximately one (T2), five (T6),

²Hooley and Teasdale (1989) showed that dichotomizing the item about perceived criticism from the Perceived Criticism Measure did significantly predict depressive relapse. Thus, there is precedence in the field for dichotomizing a perceived criticism item as we did in the current study.

and ten (T11) years later, while controlling for depressive symptoms during the first year of marriage (T1). We also included the main effect of gender and interactions between the main independent variables (IVs) and gender in each model given potential gender differences associated with depression and marriage. Such effects were included at level 1 of the model because they differ for each individual. Level 2 of the model was the couple level and level 3 was the religious organization level. At levels 2 and 3, the only random effect included was the random effect of the intercept. Below is an example of a level 1 model:

$$T2 \text{ Depressive Symptoms}_{icr} = \pi_{0icr} + \pi_{1icr}(T1 \text{ Depressive Symptoms}) + \pi_{2icr}(\text{Gender}) + \pi_{3icr}(T1 \text{ Perceived Criticism}) + \pi_{3icr}(\text{Gender} * T1 \text{ Perceived Criticism}) + e_{icr}$$

If gender was a significant moderator, we examined conditional effects within gender by coding men as 0 and women as 1 to test for the main effect of the IV for men. We then reversed the coefficients to test for the main effect for women. All results are summarized in Table 2.

Marital adjustment—We hypothesized that T1 marital adjustment would significantly predict depressive symptoms one year later. Gender did not significantly moderate the association between marital adjustment and depressive symptoms. The lack of a gender moderator allowed us to interpret the main effect for marital adjustment. There was a significant association between marital adjustment and depressive symptoms; thus, our hypothesis was supported. Spouses who had higher levels of marital adjustment during their first year of marriage had less severe depressive symptoms one year later, even after controlling for initial depressive symptoms at T1. Specifically, when spouses reported marital adjustment scores that were a standard deviation lower than the average during the initial year of marriage, their depression scores one year later were about 1.14 points (0.16 *SDs*) above average.

We also hypothesized that T1 marital adjustment would predict depressive symptoms five years later. Similar to the results at one year, gender did not moderate the association between marital adjustment and depressive symptoms, and our hypothesis regarding the main effect of marital adjustment was supported. Spouses who had lower marital adjustment scores during the first year of marriage had significantly more severe depressive symptoms five years later. In other words, when spouses reported that their marital adjustment was one standard deviation lower than the average marital adjustment score in the sample, their depressive symptoms were 1.55 points (0.22 *SDs*) higher than average five years later.

Finally, we hypothesized that T1 marital adjustment would significantly predict depressive symptoms ten years later. Again, there were no gender differences in the association between marital adjustment and depressive symptoms. Our hypothesis was supported in that spouses who had lower marital adjustment scores during their initial year of marriage had more severe depressive symptoms ten years later. This finding indicates that when spouses were a standard deviation lower than the average in marital adjustment during the initial year of marriage, they had depression scores that were about 1.58 points (0.21 *SDs*) above average ten years later.

Perceived criticism—Similar to our hypothesis for marital adjustment, we hypothesized that perceived criticism at T1 would predict depressive symptoms at T2, the one-year follow-up. As stated and shown in the equation above, to test this hypothesis we ran a model that included T1 depressive symptoms, T1 perceived criticism, gender, and the interaction between gender and T1 perceived criticism in predicting T2 depressive symptoms. Results revealed a significant interaction between gender and T1 perceived criticism, indicating that there was a stronger positive association between T1 perceived criticism and T2 depressive symptoms for husbands. Examining the interactions further by coding gender as 0 and 1 for husbands and wives, respectively, we found that the conditional effect for husbands was significant, $b = 3.02$, $SE\ b = 1.55$, $t(174) = 1.95$, $p = 0.05$. This finding indicated that when husbands perceived criticism from wives during the initial year of marriage, they had depression scores one year later that were 3.02 points (0.51 *SDs*) higher than husbands who did not perceive criticism. In comparison, when we reversed the coding of gender to look at the conditional effect of perceived criticism for wives, wives' T1 perceived criticism was not significantly related to wives' T2 depressive symptoms ($b = -1.54$, $SE\ b = 1.48$, $t(174) = -1.04$, *ns*).

In contrast to the one-year follow-up, we did not have a specific hypothesis as to whether T1 perceived criticism would significantly predict depressive symptoms five years later. Unlike the findings for T2, gender did not moderate the association between T1 perceived criticism and T6 depressive symptoms. Instead, the main effect of T1 perceived criticism indicated that T1 perceived criticism significantly predicted depressive symptoms at T6 regardless of gender. Therefore, when husbands and wives perceived criticism in their initial year of marriage, five years later, they had depression scores that were 4.38 points higher (0.62 *SDs*) than spouses who did not perceive criticism during their first year of marriage.

Similar to the five-year follow-up, we did not have a specific hypothesis as to whether initial perceived criticism would predict depressive symptoms ten years later. At T11, results were similar to the T6 follow-up. Gender did not moderate the association between T1 perceived criticism and T11 depressive symptoms. There was a main effect for T1 perceived criticism, indicating that when spouses perceived that their partner was critical of them during the first year of marriage, ten years later their depression scores were 3.74 points higher (0.50 *SDs*) than spouses who did not perceive criticism.

Contributions of perceived criticism and marital adjustment—We hypothesized that T1 perceived criticism would predict depressive symptoms at T2 even while controlling for T1 marital adjustment and vice versa. In an overall model, there was a significant interaction between gender and perceived criticism ($b = 5.59$, $SE\ b = 2.16$, $t(172) = 2.59$, $p < .05$), but not gender and marital adjustment ($b = 0.08$, $SE\ b = 0.06$, $t(172) = 1.45$, $p = ns$). Given that there was a gender difference in the association between T1 perceived criticism and T2 depressive symptoms, we discuss the conditional effects within gender for T2 outcomes. Husbands' perceived criticism approached significance in predicting depressive symptoms one year later, $b = 3.08$, $SE\ b = 1.63$, $t(172) = 1.90$, $p = 0.06$, whereas marital adjustment did not, $b = -0.01$, $SE\ b = 0.05$, $t(172) = -0.27$, *ns*. For wives, the association between perceived criticism and their own depressive symptoms was not significant, $b = -2.51$, $SE\ b = 1.49$, $t(172) = -1.49$, $p = 0.09$. Additionally, even though there was no

significant gender difference between marital adjustment and depressive symptoms for husbands and wives, wives' marital adjustment significantly predicted wives' depression, $b = -0.10$, $SE\ b = .03$, $t(172) = -2.85$, $p < 0.01$; in contrast, husbands' marital adjustment did not significantly predict husbands' depression ($b = -0.01$, $SE\ b = 0.05$, $t(172) = -0.27$, *ns*) while included in a model with perceived criticism. Therefore, our hypothesis was partially supported. Marital adjustment significantly predicted depressive symptoms, but only for women; in contrast, perceived criticism significantly predicted depressive symptoms, but only for men.

We did not have specific predictions about whether T1 perceived criticism or T1 marital adjustment would uniquely predict depressive symptoms at T6. At the five-year follow-up, there were no significant gender differences. Both T1 perceived criticism and T1 marital adjustment were significant predictors of T6 depressive symptoms.

At the ten-year follow-up this pattern was replicated. Again, there were no significant gender differences. When perceived criticism and marital adjustment were in a model together to predict depressive symptoms ten years later, both perceived criticism and marital adjustment were significantly associated with depressive symptoms. In conclusion, at the five- and ten-year follow-ups, both initial perceived criticism and initial marital adjustment were significant predictors of depressive symptoms.

Discussion

Expanding the literature on marital factors associated with depression, we examined whether marital adjustment and perceived criticism predict later depressive symptoms in a community sample of married couples one, five, and ten years later. Results indicate the importance of both marital adjustment and perceived criticism as predictors of later depressive symptoms, as well as gender differences in associations between perceived criticism and depressive symptoms in the early years of marriage.

Marital Adjustment

In regards to marital adjustment, our hypothesis that marital adjustment during the first year of marriage would predict depressive symptoms over the course of marriage was supported. This finding is in line with growing evidence suggesting that associations between marital adjustment and depressive symptoms last over long durations (Du Rocher Schudlich et al., 2011). In addition, the negative associations between initial marital adjustment and depressive symptoms did not change as a function of time, suggesting that lower levels of marital adjustment in the first year of marriage may be a risk factor for later depressive symptoms. Finally, it is important to note that prospective associations between initial marital adjustment and later depressive symptoms did not significantly differ between men and women, adding evidence to a growing literature indicating that the relationship between marital discord and depression may be relatively similar in magnitude for men and women (Beach, Katz, Kim, & Brody, 2003; Kourous et al., 2008; Whisman & Uebelacker, 2009).

Perceived Criticism and Gender Differences

In addition to the global construct of marital adjustment, we also found evidence for a more specific marital factor- perceived criticism- in predicting depressive symptoms over time. Findings regarding initial perceived criticism and later depressive symptoms differed by gender at the first follow-up, but not for the longer follow-ups.

At the first follow-up, for husbands, perceived criticism was a stronger predictor of depressive symptoms than it was for wives. Specifically, husbands' perceived criticism from wives during the initial year of marriage predicted depressive symptoms, whereas wives' initial perceived criticism from husbands did not significantly predict wives' depressive symptoms one year later. Perhaps for wives, other overarching features of the relationship, such as overall marital quality or relationship confidence (Whitton et al., 2007), or even other destructive patterns of communication, may be more important than perceived criticism for their mental health during the first years of marriage than perceived criticism. In contrast, perceived criticism is salient for men's mental health early in marriage. These findings mirror those from other studies that have also demonstrated that different qualities of marriage may be more important for husbands and wives. Husbands' perceptions of negative communication are strongly related to divorce potential; in contrast, wives' perceptions of positive communication are more strongly related to divorce potential (Stanley, Markman, & Whitton, 2002). Finally, another cross-sectional study has shown that only the wife-demand/husband-withdraw pattern is significantly linked to depressive symptoms for husbands and wives (Uebelacker, Courtnage, & Whisman, 2003). To the extent that being in the demanding role is similar to being critical, such results would predict that husbands' perceived criticism from wives is an important correlate of husbands' depressive symptoms, but that wives' perceptions of husbands' criticism (husband in demand role) would not necessarily correlate with wives' depressive symptoms, at least cross-sectionally. It is important to highlight that these gender differences that appeared early on in marriage do not persist later in marriage given that for the five and ten year follow-ups, there were no gender differences in the perceived criticism model. Thus, it seems that the gender differences leveled out over time. This is the first study to our knowledge that has found this developmental difference in gender differences of predictors of depressive symptoms. Future longitudinal research is needed to see if this finding replicates, as well as to explore mechanisms which account for this finding.

As noted, in contrast to the first follow-up, we found no gender differences in associations between initial perceived criticism and later depressive symptoms for the longest follow-ups that occurred five and ten years later, even when controlling for prior depressive symptoms. Importantly, these findings are in contrast to some studies in the psychiatric literature which generally have found mixed support for perceived criticism's ability to predict depressive relapse in the short term (Andrew et al., 1993; Hayhurst et al., 1997; Hooley & Teasdale, 1989; Okasha et al., 1994). They also contrast with the lack of prediction in clinical samples in regards to longer-term depressive relapse (Kronmüller et al., 2008; Sherrington et al., 2001). At this point, it is unclear whether the differences in our results reflect a difference in our method, a difference in power, or a difference between community and psychiatric samples. It is also important to note that it was perhaps our unique dichotomous measure of

perceived criticism that tapped into “criticism” or “belittlement” of “feelings, opinions, or desires” that may have produced our unique long-term results. Future studies should replicate our results with the measure used in the current study as well as the traditional PCM measure (Hooley & Teasdale, 1989) in both community and clinical samples.

Independent Contributions of Marital Adjustment and Perceived Criticism

When included in a full model together, both marital adjustment and perceived criticism, rated during the first year of marriage, made contributions toward predicting later depressive symptoms similarly for both husbands and wives at five and ten years later. In contrast, the relationship between perceived criticism and depressive symptoms one year later was stronger for husbands than wives, with conditional effects showing a significant relationship only for husbands. In the full model, there was no gender difference for marital adjustment in predicting depressive symptoms, but conditional main effects indicated that marital adjustment independently predicted depressive symptoms for women but not men. However, we are hesitant to proclaim a gender difference due to the lack of a significant interaction term in the model. In other words, even if conditional effects of marital adjustment are significant only for women, it is not clear that this is a significant difference between women and men, or an artifact of using p-values for comparisons due to the lack of significant gender moderator terms in such models.

Despite the single gender difference in perceived criticism at the one-year follow-up, both marital adjustment and perceived criticism made independent contributions in predicting depressive symptoms. Although marital adjustment and perceived criticism are correlated, both are important and independent predictors of future depressive symptoms in marriage, especially over the long-term course of marriage. This suggests that marital adjustment might capture something unique that is not accounted for by perceived criticism. Perhaps other important features of the relationship, such as affective expression, overall levels of conflict, cohesion, and overall satisfaction also predict depression as opposed to specific instances of negative communication in general. In addition, there also may be something unique about perceived criticism that makes it a specific risk factor for later depressive symptoms independent of initial depression severity or marital adjustment. One possibility is that perceived criticism involves social rejection, which in the past has been linked to depression (Kendler et al., 2005; Slavich et al., 2010). Alternatively, perceived criticism may be a unique predictor because it reflects negative communication in general, which in itself may lead to depression, as hypothesized by other authors (Beach et al., 1990). Furthermore, perceived criticism taps into both cognitive biases and actual criticism (Smith & Peterson, 2008); thus, as suggested by Smith and Peterson (2008), it would be interesting to disentangle whether cognitive biases, actual criticism, or the combination of the two best predicts depression. In sum, it is important to explore these associations to see whether perceived criticism is simply a reflection of negative communication or whether there is something specific about perceived criticism that predicts depression. It is also important to investigate components of marital adjustment (e.g., amount of conflict, cohesion, affective expression, satisfaction) that are most linked to depressive symptoms.

Limitations and Implications

It is important to note that there are several limitations of the current study. First, participants were predominantly white, middle-class individuals who were getting married through a religious organization. Thus, the generalizability of our findings may be limited, and replications should aim to include more diverse samples, particularly given that family criticism (as coded by trained raters) predicts differential outcomes for different cultural groups (e.g., Aguilera, López, Breitborde, Kopelowicz, & Zarate, 2010; Rosenfarb, Bellack, & Aziz, 2006). Second, all participants participated in some form of premarital intervention. Even though our results generally did not differ between the intervention groups, it is still possible that undergoing *any* type of intervention could have impacted the current results in unforeseen ways. The only occasion in which intervention moderated the results was for the contributions of marital adjustment to depression at the one-year follow-up (T2). Therefore, for this effect it is possible that the intervention could have influenced this particular result and thus, it is unclear as to how well this finding in particular may be generalizable to all couples. Third, we used a single-item measure of perceived criticism. Single-item measures may not be reliable and hence observed correlations with other variables may be attenuated. Future investigations would benefit from the use of psychometrically sound measures of perceived criticism in examining whether marital adjustment predicts depressive symptoms above and beyond the effects of perceived criticism when perceived criticism is measured more rigorously.

Despite these limitations, the results of this study have potentially important clinical implications. Given that both perceived criticism and marital adjustment at the onset of marriage predicted depressive symptoms up to ten years into marriage, both may be an important point of intervention for newlywed or even dating couples in order to prevent later depressive symptoms. Criticism is already one of the targets of behavioral marital interventions (Markman, Blumberg, et al., 2010) and is one of the four risk factors linked to future divorce in related research (Gottman, 1994). These findings further support the value of admonitions to newlyweds about the importance of reducing criticism, given its impact on the quality of marriage and on each partner's mental health. Furthermore, by targeting newlywed couples who are high in perceived criticism and/or low in marital adjustment, relationship interventions may reduce the risk of developing or increasing depressive symptoms over the course of marriage.

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References

- Aguilera A, López SR, Breitborde NJK, Kopelowicz A, Zarate R. Expressed emotion and sociocultural moderation in the course of schizophrenia. *Journal of Abnormal Psychology*. 2010; 119:875–885.10.1037/a0020908 [PubMed: 21090883]

- Allen ES, Rhoades GK, Stanley SM, Markman HJ. Hitting home: Relationships between recent deployment, posttraumatic stress symptoms, and marital functioning in army couples. *Journal of Family Psychology*. 2010; 24:280–288.10.1037/a0019405 [PubMed: 20545401]
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 2000. text rev
- Andrew B, Hawton K, Fagg J, Westbrook D. Do psychosocial factors influence outcome in severely depressed female psychiatric in-patients? *The British Journal of Psychiatry*. 1993; 163:747–754.10.1192/bjp.163.6.747 [PubMed: 8306116]
- Ayuso-Mateos JL, Nuevo R, Verdes E, Naidoo N, Chatterji S. From depressive symptoms to depressive disorders: The relevance of thresholds. *The British Journal of Psychiatry*. 2010; 196:365–371.10.1192/bjp.bp.109.071191 [PubMed: 20435961]
- Beach SRH, Katz J, Kim S, Brody GH. Prospective effects of marital satisfaction on depressive symptoms in established marriages: A dyadic model. *Journal of Social and Personal Relationships*. 2003; 20:355–371.10.1177/0265407503020003005
- Beach, SRH.; Sandeen, EE.; O’Leary, KD. Depression in marriage: A model for etiology and treatment. New York: Guilford Press; 1990.
- Brennan PA, Hammen C, Andersen MJ, Bor W, Najman JM, Williams GM. Chronicity, severity, and timing of maternal depressive symptoms: Relationships with child outcomes at age 5. *Developmental Psychology*. 2000; 36:759–766.10.1037//0012-1649.36.6.759 [PubMed: 11081699]
- Crane DR, Middleton KC, Bean RA. Establishing criterion scores for the Kansas Marital Satisfaction Scale and the Revised Dyadic Adjustment Scale. *American Journal of Family Therapy*. 2000; 28:53–60.10.1080/019261800261815
- Cummings EM, Davies PT. Maternal depression and child development. *Journal of Child Psychology and Psychiatry*. 1994; 35:73–112.10.1111/j.1469-7610.1994.tb01133.x [PubMed: 8163630]
- Cummings EM, Keller PS, Davies PT. Towards a family process model of maternal and paternal depressive symptoms: Exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry*. 2005; 46:479–489.10.1111/j.1469-7610.2004.00368.x [PubMed: 15845128]
- Davila J, Karney BR, Hall TW, Bradbury TN. Depressive symptoms and marital satisfaction: within-subject associations and the moderating effects of gender and neuroticism. *Journal of Family Psychology*. 2003; 17:557–570.10.1037/0893-3200.17.4.557 [PubMed: 14640805]
- DiMatteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: Meta-analysis of the effects of anxiety and depression on patient adherence. *Archives of Internal Medicine*. 2000; 160:2101–2107.10.1001/archinte.160.14.2101 [PubMed: 10904452]
- Dix T, Meunier LN. Depressive symptoms and parenting competence: An analysis of 13 regulatory processes. *Developmental Review*. 2009; 29:45–68.10.1016/j.dr.2008.11.002
- Doss BD, Rhoades GK, Stanley SM, Markman HJ. The effect of the transition to parenthood on relationship quality: An 8-year prospective study. *Journal of Personality and Social Psychology*. 2009; 96:601–619.10.1037/a0013969 [PubMed: 19254107]
- Downey G, Coyne JC. Children of depressed parents: An integrative review. *Psychological Bulletin*. 1990; 108:50–76.10.1037/0033-2909.108.1.50 [PubMed: 2200073]
- Du Rocher Schudlich TD, Papp LM, Cummings EM. Relations between spouses’ depressive symptoms and marital conflict: A longitudinal investigation of the role of conflict resolution styles. *Journal of Family Psychology*. 2011; 25:531–540.10.1037/a0024216 [PubMed: 21668119]
- Fiedler P, Backenstra M, Kronmüller KT, Mundt C. “Expressed emotion” (EE), Ehequalität und das rückfallrisikodepressiver patienten. *Nervenarzt*. 1998; 69:600–608. [PubMed: 9715478]
- Fincham FD, Bradbury TN. The assessment of marital quality: A reevaluation. *Journal of Marriage and the Family*. 1987; 49:797–809.10.2307/351973
- Freeston MH, Pléchaty M. Reconsideration of the Locke-Wallace marital adjustment test: Is it still relevant for the 1990s? *Psychological Reports*. 1997; 81:419–434. [PubMed: 9354091]
- Gottman, JM. What predicts divorce? The relationship between marital processes and marital outcomes. Hillsdale, NJ: Lawrence Erlbaum Associates; 1994.

- Hayhurst H, Cooper Z, Paykel ES, Vearnals S, Ramana R. Expressed emotion and depression: A longitudinal study. *The British Journal of Psychiatry*. 1997; 171:439–443.10.1192/bjp.171.5.439 [PubMed: 9463602]
- Hooley JM. Expressed emotion and relapse of psychopathology. *Annual Review of Clinical Psychology*. 2007; 3:329–352.10.1146/annurev.clinpsy.2.022305.095236
- Hooley JM, Parker HA. Measuring expressed emotion: An evaluation of the shortcuts. *Journal of Family Psychology*. 2006; 20:386–396.10.1037/0893-3200.20.3.386 [PubMed: 16937995]
- Hooley JM, Teasdale JD. Predictors of relapse in unipolar depressives: Expressed emotion, marital distress, and perceived criticism. *Journal of Abnormal Psychology*. 1989; 98:229–235.10.1037/0021-843X.98.3.229 [PubMed: 2768657]
- Kendler KS, Hettema JM, Butera F, Gardner CO, Prescott CA. Life event dimensions of loss, humiliation, entrapment, and danger in the prediction of onsets of major depression and generalized anxiety. *Archives of General Psychiatry*. 2005; 60:789–796.10.1001/archpsyc.60.8.789 [PubMed: 12912762]
- Kessler RC, Berglund P, Demler O, Jin R, Koretz D, Merikangas KR, Wang PS. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey replication (NCS-R). *Journal of the American Medical Association*. 2003; 289:3095–3105.10.1001/jama.289.23.3095 [PubMed: 12813115]
- Kessler RC, Zhao S, Blazer DG, Swartz M. Prevalence, correlates and course of minor depression and major depression in the national comorbidity survey. *Journal of Affective Disorders*. 1997; 45:19–30.10.1016/S0165-0327(97)00056-6 [PubMed: 9268772]
- Kouros CD, Papp LM, Cummings EM. Interrelations and moderators of longitudinal links between marital satisfaction and depressive symptoms among couples in established relationships. *Journal of Family Psychology*. 2008; 22:667–677.10.1037/0893-3200.22.5.667 [PubMed: 18855503]
- Kronmüller KT, Backenstrass M, Victor D, Postelnicu I, Schenkenbach C, Joest K, Mundt C. Expressed emotion, perceived criticism and 10-year outcome of depression. *Psychiatry Research*. 2008; 159:50–55.10.1016/j.psychres.2007.07.009 [PubMed: 18387673]
- Laurenceau JP, Stanley SM, Olmos-Gallo A, Baucom B, Markman HJ. Community-based prevention of marital dysfunction: Multilevel modeling of a randomized effectiveness study. *Journal of Consulting and Clinical Psychology*. 2004; 72:933–943.10.1037/0022-006X.72.6.933 [PubMed: 15612841]
- Locke HJ, Wallace KM. Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living*. 1959; 21:251–255.
- Luoma I, Tamminen T, Kaukonen P, Laippala P, Puura K, Salmelin R, Almqvist F. Longitudinal study of maternal depressive symptoms and child well-being. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2001; 40:1367–1374. 0890-8567/01/4012-1367. [PubMed: 11765281]
- Magruder KM, Calderone GE. Public health consequences of different thresholds for the diagnosis of mental disorders. *Comprehensive Psychiatry*. 2000; 41:14–18.10.1016/S0010-440X(00)80003-6 [PubMed: 10746899]
- Markman, HJ.; Stanley, SM.; Blumberg, SL. *Fighting for your marriage*. San Francisco, CA: Jossey-Bass; 2010.
- Markman HJ, Rhoades GK, Stanley SM, Peterson KM. A randomized clinical trial of the effectiveness of premarital intervention: Moderators of divorce outcomes. *Journal of Family Psychology*. 2013.10.1037/a0031134
- Markman HJ, Rhoades GK, Stanley SM, Ragan EP, Whitton SW. The premarital communication roots of marital distress and divorce: The first five years of marriage. *Journal of Family Psychology*. 2010; 24:289–298.10.1037/a0019481 [PubMed: 20545402]
- Nolen Hoeksema S. Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin*. 1987; 101:259–282. [PubMed: 3562707]
- Owen J, Rhoades GK, Stanley SM, Markman HJ. The role of leaders' working alliance in premarital education. *Journal of Family Psychology*. 2011; 25:49–57.10.1037/a0022084 [PubMed: 21355646]

- Owen J, Quirk K, Bergen C, Inch LJ, France T. The effectiveness of PREP with lower-income racial/ethnic minority couples. *Journal of Marital and Family Therapy*. 2012; 38:296–307.10.1111/j.1752-0606.2012.00294.x [PubMed: 22765341]
- Radloff LS. The CESD Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Raudenbush, SW.; Bryk, AS.; Congdon, R. HLM 6 for Windows. Skokie, IL: Scientific Software International, Inc; 2004.
- Rehman U, Gollan J, Mortimer AR. The marital context of depression: Research, limitations, and new directions. *Clinical Psychology Review*. 2008; 28:179–198.10.1016/j.cpr.2007.04.007 [PubMed: 17573169]
- Renshaw KD. Perceived criticism only matters when it comes from those you live with. *Journal of Clinical Psychology*. 2007; 63:1171–1179.10.1002/jclp.20421 [PubMed: 17972289]
- Renshaw KD. The predictive, convergent, and discriminant validity of perceived criticism: A review. *Clinical Psychology Review*. 2008; 28:521–534.10.1016/j.cpr.2007.09.002 [PubMed: 17913319]
- Renshaw KD, Chambless DL, Steketee G. Comorbidity fails to account for the relationship of expressed emotion and perceived criticism to treatment outcome in patients with anxiety disorders. *Journal of Behavior Therapy*. 2001; 32:145–158.10.1016/S0005-7916(01)00030-1
- Rogge RD, Bradbury TN. Till violence does us part: The differing roles of communication and aggression in predicting adverse marital outcomes. *Journal of Consulting and Clinical Psychology*. 1999; 67:340–351.10.1037//0022-006X.67.3.340 [PubMed: 10369054]
- Rosenfarb IS, Bellack AS, Aziz N. Family interactions and the course of schizophrenia in African American and White patients. *Journal of Abnormal Psychology*. 2006; 115:112–120.10.1037/0021-843X.115.1.112 [PubMed: 16492102]
- Sherrington JM, Hawton K, Fagg J, Andrew B, Smith D. Outcome of women admitted to hospital for severe mental illness: Factors in the prognosis of severe depression. *Psychological Medicine*. 2001; 31:115–125. [PubMed: 11200950]
- Slavich GM, O'Donovan A, Epel ES, Kemeny ME. Black sheep get the blues: A psychobiological model of social rejection and depression. *Neuroscience and Biobehavioral Reviews*. 2010; 35:39–45.10.1016/j.neubiorev.2010.01.003 [PubMed: 20083138]
- Smith DA, Peterson KM. Overperception of spousal criticism in dysphoria and marital discord. *Behavior Therapy*. 2008; 39:300–312.10.1016/j.beth.2007.09.002 [PubMed: 18721643]
- Stanley, SM.; Markman, HJ. Marriage in the 90s: A nationwide random phone survey. Denver, CO: PREP; 1997.
- Stanley SM, Markman HJ, Prado LM, Olmos-Gallo PA, Tonelli L, St Peters M, Whitton SW. Community-based premarital prevention: Clergy and lay leaders on the front lines. *Family Relations*. 2001; 50:67–76.10.1111/j.1741-3729.2001.00067.x
- Stanley SM, Markman HJ, Whitton S. Communication, conflict, and commitment: Insights on the foundations of relationship success from a national survey. *Family Process*. 2002; 41(4):659–675.10.1111/j.1545-5300.2002.00659.x [PubMed: 12613123]
- Uebelacker LA, Courtnage ES, Whisman MA. Correlates of depression and marital dissatisfaction: Perceptions of marital communication style. *Journal of Social and Personal Relationships*. 2003; 20:757–769.10.1177/0265407503206003
- Whisman, MA. The association between depression and marital dissatisfaction. In: Beach, SRH., editor. *Marital and family processes in depression: A scientific foundation for clinical practice*. Washington, DC: American Psychological Association; 2001. p. 3-24.
- Whisman MA, Bruce ML. Marital dissatisfaction and incidence of major depressive episode in a community sample. *Journal of Abnormal Psychology*. 1999; 108:674–678.10.1037//0021-843X.108.4.674 [PubMed: 10609431]
- Whisman MA, Uebelacker LA. Prospective associations between marital discord and depression in middle-aged and older adults. *Psychology and Aging*. 2009; 24:184–189.10.1037/a0014759 [PubMed: 19290750]
- Whitton SW, Olmos-Gallo PA, Stanley SM, Prado LM, Kline GK, StPeters M, Markman HJ. Depressive symptoms early in marriage: Predictions from relationship confidence and negative

marital interactions. *Journal of Family Psychology*. 2007; 21:297–306.10.1037/0893-3200.21.2.297 [PubMed: 17605552]

World Health Organization. *The Global Burden of Disease: 2004 Update*. Geneva, Switzerland: WHO Press; 2008.

Wulsin LR, Singal BM. Do depressive symptoms increase the risk of onset of coronary disease? A systematic quantitative review. *Psychosomatic Medicine*. 2003; 65:201–210.10.1097/01.PSY.0000058371.50240.E3 [PubMed: 12651987]

Highlights

- We tested whether marital discord and perceived criticism predict depressive symptoms.
- Newlyweds were assessed during the first year of marriage and up to 10 years later.
- Gender differences emerged for predictions at the one-year follow-up.
- Five and ten years later, initial marital discord and criticism predicted symptoms.
- Discord and criticism predict symptoms, but associations differ by gender and time.

Table 1
Means, Standard Deviations, and Correlations of Study Constructs for Husbands and Wives

Construct	1.	2.	3.	4.	5.	6.	Husband <i>M (SD)</i>	Wife <i>M (SD)</i>
1. T1 Depressive Symptoms	---	.33***	-.44***	.44***	.37***	.35**	6.06 (6.20)	6.66(6.59)
2. T1 Perceived Criticism	.18*	---	-.44***	.32**	.35***	.35**	0.26 (0.44)	0.24 (0.43)
3. T1 Marital Adjustment	-.26**	-.28***	---	-.27*	-.23*	-.41***	126.44 (16.36)	125.64 (17.72)
4. T2 Depressive Symptoms	.51***	-.05	-.27**	---	---	---	6.34 (5.95)	7.33 (7.97)
5. T6 Depressive Symptoms	.23*	.27**	-.29**	---	---	---	5.96 (6.19)	7.95 (7.88)
6. T11 Depressive Symptoms	.35**	.22	-.20	---	---	---	6.36 (7.19)	7.11 (7.69)

Note. For the correlations, scores for husbands are shown on top of the diagonal, whereas scores for wives are below the diagonal. T1= initial time point during the first 0–2 years of marriage; T2 = timepoint 2–4 years into marriage; T6= timepoint 5–7 years into marriage; T11 = timepoint 10–12 years into marriage. Depressive symptoms were measured with the CES-D; marital adjustment was measured with the MAT; and perceived criticism was measured with a one-item, dichotomous measure from the Communications Danger Signs scale. Given the way we structured our data, we could not correlate depressive symptoms at different follow-ups.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Regressions Predicting Depressive Symptoms at One, Five, and Ten Years after the First Year of Marriage.

Time 1 Construct	Time 2			Time 6			Time 11		
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>b</i>	<i>SE</i>	<i>t</i>
MA Only									
Intercept	6.88	0.53	12.87***	6.96	0.50	13.97***	6.95	0.58	12.07***
Depressive Symptoms	0.52	0.08	6.67***	0.28	0.08	3.40***	0.32	0.10	3.31**
Gender	-0.28	0.83	-.34	-1.56	0.84	-1.86	0.66	1.03	0.64
MA	-0.07	0.03	-2.16*	-0.10	0.30	-3.14**	-0.13	0.04	-3.46***
Gender * MA	0.03	0.06	0.60	0.08	0.06	1.36	-0.00	0.07	-0.03
PC Only									
Intercept	6.76	.58	11.63***	5.99	0.55	10.83***	5.73	0.64	9.01***
Depressive Symptoms	.55	0.08	7.25***	0.26	0.80	3.26**	0.33	0.09	3.79***
Gender	-1.51	0.95	-1.60	-1.73	0.96	-1.80	0.35	1.23	0.29
PC	0.74	1.10	0.67	4.38	1.13	3.88***	3.74	1.26	2.96**
Gender * PC	4.56	2.08	2.20*	-0.37	2.07	-0.18	1.03	2.47	0.42
Full Model									
Intercept	6.78	0.58	11.68***	6.10	0.55	11.05***	6.11	0.66	9.22***
Depressive Symptoms	0.52	0.08	6.82***	0.25	0.08	3.12**	0.31	0.10	3.20**
Gender	-1.56	0.95	-1.65	-1.78	0.96	-1.86	0.71	1.24	0.57
PC	0.29	1.13	0.26	3.70	1.16	3.19**	2.89	1.36	2.12*
MA	-0.06	0.03	-1.75	-0.07	0.03	-2.10*	-0.08	0.04	-2.08*
Gender * PC	5.59	2.16	2.59*	0.52	2.16	0.24	-0.06	2.63	-0.02
Gender * MA	0.08	0.06	1.45	0.09	0.06	1.52	-0.02	0.08	-0.29

* Note. PC = perceived criticism. MA = marital adjustment. Women were coded as -0.5 (men were +0.5).

* $p < .05$.

** $p < .01$;

*** $p < .001$.