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Emotional Abilities, Relationship Functioning, and Depressive Symptoms

A Dissertation Presented

by

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Abstract of the Dissertation

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Poor emotional abilities (specifically, emotional expression and emotional identification in self and others) have been consistently linked to increased depressive symptoms in both clinical and community samples (see Taylor, Bagby, and Parker, 1997, for a review). One way that poor emotional abilities may lead to depression is through their impact on interpersonal relationships. Individuals with poor emotional abilities report lower perceived social support, intimacy, and relationship satisfaction. Furthermore, poor relationship functioning is a clear risk factor for depressive symptoms (Beach, Sandeen, & O’Leary, 1990; Whisman, 1999). Given the established emotional abilities - depression link and marital dysfunction - depression link, a logical next step is to examine whether relationship dysfunction (low social support, intimacy, negative relationship behaviors, and relationship dissatisfaction) mediates the association between poor emotional abilities and depressive symptoms. In order to test this hypothesis, a sample of one hundred couples was recruited through community advertisements.

Emotional abilities, relationship functioning, and mood were assessed using multiple measures of each construct. In addition, the hypothesized mediation model was assessed using both cross-sectional reports and daily diary reports over a seven day period. Across measures and methodologies, the results largely supported the hypothesis that poor relationship functioning mediates the association between poor emotional abilities and depressed mood. These results identify emotional abilities as an important variable in understanding the marital functioning – depression association and this finding has implications for treatment.

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Introduction

The study of emotional abilities has flourished in the last few decades. Emotional abilities include identification of emotions in oneself and others, the ability to express emotions, the ability to regulate emotions, and experience empathy. Several emotional abilities constructs have been widely studied including alexithymia, emotional intelligence, and emotional awareness (Lane & Schwartz, 1987; Salovey & Mayer, 1990; Sifneos, 1973).

Review of Emotional Abilities Constructs

Alexithymia, the oldest of the emotional abilities constructs, is derived from Greek roots “a = without”, “lexus=words”, and “thymos= emotions”; it literally means “a lack of words for emotion” (Sifneos, 1973). Alexithymia, as contemporarily defined, is a multifaceted construct that includes the main components: (1) difficulty describing emotions; (2) difficulty identifying emotions; and (3) externally oriented thinking (Taylor, 1994; Taylor, Bagby, & Parker, 1991). It is viewed as a relatively stable trait which is normally distributed in the general population. Alexithymia is often measured with self-report or observer-report measures (Haviland, Warren, & Riggs, 2000; Taylor, Ryan, & Bagby, 1985). Cutoff criteria have been established with Toronto Alexithymia Scale (TAS) to dichotomize alexithymic and nonalexithymic individuals. The TAS is a well-validated self-report measure of alexithymia used in many studies and includes three

subscales to assess the main components (difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking).

Over a thousand studies have examined alexithymia and its relation to mental and/or physical health across the last thirty five years (Taylor & Bagby, 2004).

Alexithymia is associated with somatoform disorders, post-traumatic stress disorder, major depressive disorder, eating disorders, obsessive-compulsive disorder, and substance abuse disorders (Bankier, Aigner, & Bach, 2001; Honkalampi, Hintikka, Laukkanen, Lehtonen, & Viinamäki, 2001; Taylor, Bagby, & Parker 1990; Taylor, Parker, Bagby, & Bourke, 1996; Yehuda, Steiner, Kahana, Binder-Brynes, Southwich, Zelman, & Giller, 1997). Further, alexithymia predicted risk for mortality in a five year prospective study of over 2,000 middle aged men after controlling for other established risk factors (Kauhanen, Kaplan, Cohen, Julkunen, & Salonen, 1996).

Emotional awareness differs from alexithymia in two main ways. It is typically measured with an objective measure rather than a self-report and it focuses on both identification of emotions in oneself, as well as in others. Emotional awareness is often measured using the Level of Emotional Awareness Scale (LEAS) that codes individual's verbal quality of emotional expression in hypothetical situations (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990). Although one would expect the association between alexithymia and emotional awareness to be considerable given their conceptual overlap, this has not been the case. Previous studies have found a weak or null association between emotional awareness and self-reported alexithymia (e.g., Ciarrochi, Caputi, & Mayer, 2003; Lane, 2000). Furthermore, alexithymia and emotional awareness each

uniquely predict perceived social support, but only alexithymia accounts for unique variance in depressed mood (Ciarrochi, Scott, Deane, & Heaven, 2003).

A newer, broader construct, emotional intelligence (EI), shares some conceptual overlap with alexithymia and emotional awareness. EI includes the ability to identify and express one's own emotions, the ability to understand the emotions of others, and the ability to regulate one's emotions. EI is significantly correlated with less depressed mood and increased social functioning (Schutte, Malouff, & Bobik, 2001; Schutte, Malouff, Hall, Haggerty, Cooper, Golden, & Dornheim, 1998). Latent variable analysis shows that EI and alexithymia are significantly negatively correlated, but independent constructs (Parker, Taylor, & Bagby, 2001). Components of EI that closely overlap with emotional awareness (identification and expression of emotions) have shown to have a minimal association with the LEAS, raising questions about whether these measures are actually assessing the same construct (Ciarrochi, Caputi, & Mayer, 2003).

Theoretical Background

Poor emotional abilities are thought to reflect underlying deficiencies in emotional regulation and cognitive information processing (Lane & Schwartz, 1987; Taylor, Bagby, & Parker, 1997). It has been hypothesized that individuals with poor emotional abilities may be able to perceive affective intensity, but have difficulty making sense of the meaning of the affect and engage in avoidance strategies, both of which require more effort and cognitive resources (e.g., John & Gross, 2007). A number of brain imaging studies have been conducted comparing low emotional abilities to high emotional abilities individuals and found support for this supposition. In one study,

alexithymic individuals did not differ in their ability to perceive visual emotional stimuli, but evidenced more central cortical activity recorded by visual event related EEG potentials when confronted with emotional stimuli than non-alexithymic controls (Franz, Schaefer, Schneider, Sitte, & Bachor, 2004). Another EEG study examined individual differences in emotional intelligence and found increased cortical activation in response to a facial processing task among individuals with low EI compared to those with high EI (Freudenthaler, Fink, & Neubauer, 2006).

However, several other studies that have looked at neurobiological differences in individuals with low emotional abilities and findings have varied somewhat across studies using different experimental paradigms and measures approaches (see Larsen, Brand, Bermond, & Hijman, 2003 for a review). One finding that appears to have received more support is that alexithymic individuals show less activation in the anterior cingulate cortex (ACC) and other frontal cortex areas in response to negative emotional stimuli compared to non-alexithymic controls, but do not differ in activation of limbic structures (e.g., Berthoz, Artiges, van de Moortele, Poline, Rouquette, Consoli, & Martinot, 2002; Kano, Fukudo, Gyoba, Kamachi, Tagawa, Mochuizuki et al., 2003). Lower emotional awareness as measured by the LEAS in a positron emission tomography study of normal women predicted individual differences in blood flow (decreased blood flow) in the ACC while processing emotional stimuli (Lane, Reiman, Axelrod, Lang-Sheng, Holmes, & Schwartz, 1998). Hence, although it is unclear exactly how poor emotional abilities impair cognitive processing in the brain, these studies, along with the EEG studies mentioned previously, support the view that poor emotional abilities result

in some differences in cognitive processing of emotional stimuli (e.g., activation differences in the frontal cortex) rather than differences in experience/perception of emotion (e.g., activation of amygdala and other limbic structures).

This deficit in ability to process emotional experiences may lead to impairments in the ability to regulate emotions and utilize emotional information to act in a way to reduce negative emotional experiences. The consequences of this may explain the robust associations between various forms of psychopathology and impaired emotional abilities in the literature (e.g., Bankier, Aigner, & Bach, 2001). Individuals with poor emotional abilities may feel helpless to change their situation and experience the emotional information as overwhelming and confusing. This may lend them particularly vulnerable to depression. Past research has supported a well-replicated association between poor emotional abilities and depression (Taylor & Bagby, 2004). Approximately one half of individuals with major depressive disorder are above the alexithymic cut-off on the TAS (Honkalampi et al., 2001; Saarijarvi, Salminen, & Toikka, 2001). Low emotional intelligence has also been linked with increased depressive symptoms and negative affect (e.g., Dawda & Hart, 2000). Furthermore, longitudinal studies examining depression and alexithymia have shown change in alexithymia predicts change in depressive symptoms over time in clinical samples (Saarijarvi et al. 2001; Honkalampi et al., 2001).

Emotional Abilities, Mood and Marital Functioning

One potential explanation for the association between poor emotional abilities and depression is through its negative impact on close relationships. It is well established that marital dissatisfaction is significantly linked to depression (e.g., Whisman, 1999) and

couples with a depressed partner report lower intimacy in the relationship (Basco, Prager, Pita, Tamir, & Stephens, 1992). Longitudinal studies have shown that marital dissatisfaction is a significant risk factor for developing major depressive disorder, especially in women (O’Leary, Christian, & Mendell, 1994).

There is also evidence that individuals with poor emotional abilities show significantly lower dyadic adjustment and social support than those without deficits (Cordova, Gee, & Zepeda Warren, 2004; Eizaguirre, 2002; Humpreys, Wood, & Parker, 2009; Malinckrodt & Wei, 2005; Schutte et al., 2001). In addition, the Marital Discord Model of Depression includes deficits in emotional expression in the relationship as one of the factors likely to play a role in marital deterioration and subsequent depressive symptoms and identifies this as a potential intervention target for distressed and/or depressed couples coming for marital therapy (Beach, Sandeen, & O’Leary, 1990). Individuals that are unable to communicate their emotions may be less able to solicit social support that may serve as a buffer against depressive symptoms.

Prior research links one’s own poor emotional abilities to one’s own depression and marital distress, but having an impaired spouse may negatively impact individuals who are not impaired themselves. Partner’s of individual’s with poor emotional abilities may also be at a higher risk for depressive symptoms. Unfortunately, little systematic research has examined the effects of poor emotional abilities on the partner. In one of the few empirical studies, Cordova and colleagues reported that one partner’s difficulty communicating emotions was predictive of the other member’s concurrent marital dissatisfaction and this relationship was mediated by perceived intimacy (2004). One

partner's difficulty with emotional communication may greatly interfere with intimacy which, in turn, leads to marital dissatisfaction and depression. The ability to engage in the intimacy process may be difficult for alexithymic individuals, since intimacy requires the ability to disclose emotional, personal information and respond with the appropriate emotional tone to another's expression of vulnerability (e.g., see Reis, 1990 for a detailed description of the intimacy process).

The role that emotional abilities play in the marital relationship and onset of depression may help explain the gender difference in rates of depression. Women are approximately twice as likely to be depressed as men (Nolen-Hoeksema, 1987). These findings are particularly interesting given the literature suggesting that women may be more susceptible to depression in response to marital distress than men (Fincham & Bradbury, 1993; Dehle & Weiss, 1998). There is some evidence to suggest that men may be less likely to disclose their emotions and have slightly higher rates of alexithymia than women (Carpenter & Addis, 2001; Dindia & Allan, 1992). It may be that women's increased vulnerability to marital distress and depression may be facilitated by their partners' emotional abilities.

Current Study

Although there is clear evidence for a link between marital distress - depression and preliminary support for the link between marital distress - alexithymia, there are no studies that have explored all three variables simultaneously. Furthermore, it is unclear whether emotional abilities lead to depressive symptoms through the impact on relationship functioning. In this study, I examined an aspect of the Marital Discord Model

of Depression (Beach, Sandeen, & O’Leary, 1990) by assessing the impact of emotional abilities on depressive symptoms through a relationship lens. Utilizing daily diary methodology, I examined how individual difference variables, namely emotional abilities, relate to daily relationship functioning, continued negative affect and depressive symptoms. If emotional abilities are identified as an important variable in understanding the marital functioning – depression association, this finding can have implications for treatment. Emotional abilities may be modifiable with interventions targeting emotional discrimination training such as emotion-focused therapy for couples (Johnson, & Greenberg, 1985).

This study extends previous work in several ways. First, this study has potential to deepen our knowledge of the role of emotional functioning in couples by examining alexithymia – a construct that has rich theoretical and empirical support, but has rarely been examined in the couples context. Second, this study not only examines alexithymia, but also examines other related but less researched emotional abilities constructs – emotional intelligence and emotional awareness – in order to determine their relative impact on relationship functioning. Third, this study examines the relationship between depressive symptoms, emotional abilities, and relationship functioning using a methodology that will examine the dyadic interactions of these variables (self and partner effects) using the Actor Partner Interdependence Model that has not been used in previous studies (APIM, Kashy & Kenny, 2000). Specifically, the APIM model permits analysis of the contribution of one’s own and one’s partner’s emotional abilities to

explaining variance in relationship functioning and depressive symptoms simultaneously, controlling for the covariance between partners.

Fourth, this study examines these constructs using both cross-sectional self-reports assessed at two time points a week apart and daily diary methodology for multiple tests of the hypothesized relationships across assessment methods. Daily diary methodology is not limited by recall biases to the extent that is the case for standard self-report methods and studies have shown that results may be different when using the two methods (e.g., Halford, Keefer, & Osgarby, 2002; Stone, Broderick, Shiffman, & Schwartz, 2004). Multiple daily assessment of relationship functioning and mood across a week period increases the reliability of the measurement and provides enhanced support for the ecological validity of the constructs. Furthermore, the use of daily diary data aggregated over a week period and global self-report data collected at two time points a week apart minimizes concerns about the overlap of similar methodologies and common method variance.

If relationship functioning mediates the link between emotional abilities, it is hypothesized that this finding would generalize across both daily and global self-report methods and recall bias or other measurement differences would not significantly change the pattern of the results. Therefore, a multi-method dyadic approach will be utilized in this study to permit the interrelationship between emotional abilities, relationship functioning, and mood to be tested in a variety of ways, providing an opportunity for replication of the hypotheses across different methods.

Hypotheses

1) Self and Partner's poor emotional abilities will negatively associate with mood and relationship functioning.

Time 1:

1a. Self: Poor emotional abilities will correlate with a) less intimacy, marital satisfaction, social support, more aggression, poorer communication, and b) higher rates of depressive and anxiety symptoms.

1b. Partner: Poor emotional abilities will correlate with *partner's* reported a) less intimacy, marital satisfaction, social support, poorer communication, and b) higher rates of depressive symptoms and anxiety symptoms.

Daily:

1c. Self: Poor emotional abilities will correlate with daily diary indices including a) less intimacy, less marital satisfaction, more negative relationship behaviors, less positive relationship behaviors, b) higher negative affect, less positive affect, and c) more perceived negative relationship conflict.

1d. Partner: Poor emotional abilities will correlate with *partner's* daily diary indices including a) less intimacy, less marital satisfaction, more negative relationship behaviors, less positive relationship behaviors, b) higher negative affect, less positive affect, and c) more perceived negative relationship conflict.

2) Relationship functioning will mediate the association between emotional abilities and negative mood.

Time 1:

2a. Three time 1 relationship functioning variables (intimacy, social support, and marital satisfaction) will be tested as mediators of the link between emotional abilities and depression using structural equation modeling software and an Actor Partner Interdependence Model framework to account for dyadic influence (see Figure 1 for hypothesized model).

Daily:

2b. Daily relationship functioning will mediate the association between emotional abilities and daily mood. Using multilevel random coefficient modeling, mediation models will be tested with 3 mediators a) daily relationship satisfaction, b) daily intimacy, and c) daily negative behaviors (see Figure 2 for hypothesized models).

Method

Overview

In accordance with Jacobson and Margolin's (1979) multidimensional assessment recommendation, the present study evaluated relationships between emotional abilities, depressive symptoms, and marital functioning using a variety of different methods, including self-report, structured interview, observational, and ecological momentary assessment (EMA; Stone & Shiffman, 1994).

Participants

One hundred and nine married or cohabitating couples were recruited through advertisements in local newspapers and community flyers. Advertisements briefly described study involvement requirements and compensation for participation. Eligible couples received 50 dollars, a free relationship assessment, treatment referrals, and a chance to win a hand-held computer for their participation. Eligible couples were cohabitating and/or married for at least one year, at least 18 years old, and were fluent in English. Interested couples contacted the University Marital Clinic were screened over the phone to determine eligibility. The demographic characteristics of the sample are provided in Table 1.

Procedure

Eligible couples made two visits to the University Marital Clinic scheduled 8 days apart. This study was approved by the institutional human subject research review board.

Visit 1: After informed consent was obtained during the first visit, each member of the couple was randomly assigned to participate in the Couples Emotional Awareness Scale (CEAS; Croyle & Waltz, 2002) structured interview or begin a set of computerized questionnaires first. Each member was administered the CEAS separately by a trained interviewer and their responses were audio-taped. The structured interview lasted approximately 15 minutes and was conducted separately with each member of the couple. Participants were asked to describe how they and their partner might feel in 14 hypothetical relationship-specific situations. After each partner completed the online questionnaires, they were provided instructions on how to use the hand-held computers they were asked to complete for 7 days. Couples were paid 20 dollars for their initial participation. The first visit lasted for approximately two hours.

Daily Report: Couples independently completed a 5 to 10 minute daily survey at the end of the day during a time frame specified during the first visit (e.g., after 8pm for that day). The electronic diaries were automatically time-stamped with the starting and ending point of survey completion each day in order to assess compliance. Participants, who missed a day of the survey, were given the option to fill out the survey for “yesterday” during the next day. They were prompted with the question “*would you like to fill out the survey for today or yesterday*” at the beginning of every survey. In addition, couples who completed all 7 daily entries were entered into a raffle to win a hand-held computer and the winner was notified at the end of the study.

Visit 2: Couples returned to the clinic one week after their first visit. During the second visit, couples completed a questionnaire, participated in a brief structured

interview, and engaged in two 10-minute discussion tasks. Additionally, couples received their marital assessments, referrals, and the remainder of payment. At the end of the second visit, couples were provided an opportunity to give anonymous feedback on their experiences in regard to participating in the study as well as their satisfaction with the feedback they received. The estimated average time for the second visit was two hours. In order to provide a comprehensive description of the study methods, the brief recall interview and discussion task that were part of the second visit are described below, although they are not germane to any of the dissertation hypotheses.

Brief Recall Interview and Questionnaire. A graduate in clinical psychology separately interviewed each member of the couple for approximately 10 to 15 minutes regarding bothersome events and arguments that occurred over the past week. While one partner was being interviewed, the other partner filled out a brief questionnaire. This interview was for additional hypotheses not included as part of the dissertation.

Discussion Task. The discussion topics were chosen by each member of the couple separately during an interview to evaluate positive behaviors in the relationship. Each partner selected a positive behavior that they felt was most important to them in the relationship and that they felt comfortable discussing. The discussion tasks occurred in a private room at the University Marital Clinic and were videotaped. The couple sat facing one another with two video cameras located unobtrusively in each corner of the room. Variants of this general procedure have been used in numerous studies of marriage and do not produce significant problems between spouses (Owen, Heyman, & Slep, 2006). The total time for the discussion tasks was approximately thirty minutes. Videotaped

discussions were coded for emotional abilities using a coding scheme developed in conjunction with another study (Foran & Slep, 2006).

Relationship Feedback. Each couple was separately provided written and verbal feedback on their relationship by a graduate student in clinical psychology (74% of the time by this author and 26% of the time by another graduate student). The assessment feedback was derived from their responses provided during the first visit to the Marital Satisfaction Inventory (MSI) and Dyadic Adjustment Scale (DAS). Each partner was presented a written and graphical description of their relationship functioning on various domains as compared to normative samples. The graduate student interpreted and explained the meaning of the results to each participant and answered any questions that arose. Referrals and recommendations tailored to the individual were provided. Each member was explained that the results were based on their own responses and they could discuss their results with their partner if it was their preference to do so.

Visit 1-Measures

Demographic Information Sheet. The demographic questionnaire assessed common sociodemographic variables such as ethnicity, educational attainment, age, years married, income and number of children.

Marital Satisfaction Inventory-Revised (MSI; Snyder, 1997). The MSI-R, a 150-item self-report measure, includes an overall scale of relationship satisfaction, 10 scales assessing specific relationship-relevant domains, and two validity scales. The 10 relationship-relevant domains include Affective Communication, Problem-solving Communication, Aggression, Time Together, Disagreement About Finances, Sexual

Dissatisfaction, Role Orientation (traditional vs. nontraditional), Family History of Distress, Dissatisfaction with Children, and Conflict over Child Rearing. All scores are standardized with scores at approximately 50 indicating the population average and scores above 60 indicating a clinically significant problem. The two validity scales assess consistency in responding and unrealistic negative or positive biases towards the relationship. All items are in a true-false format and the reliability and validity of the MSI has been extensively demonstrated (Snyder, 1997). Internal consistency of the scales ranges from .70 to .93 and the test-retest reliability was .74 to .88 over a period of 6 weeks (Snyder & Aikman, 1999). Scores on this measure were presented to each member for their relationship feedback at the end of the second visit.

Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS was used to assess relationship satisfaction. Scores range from 0 to 151 with higher scores indicating more marital satisfaction. Cutoff criteria of approximately 100 are generally used to differentiate distressed and nondistressed couples with scores below 85 indicating serious relationship discord (e.g., O’Leary & Beach, 1990; Spanier, 1976). Internal consistency of the DAS in this sample was high (Cronbach’s $\alpha = .90$ men, $\alpha = .91$ women).

Symptom Checklist-90 (Derogatis, Rickels, & Rock, 1976). The SCL-90 assesses various types of psychological symptoms including depression, anxiety, hostility, and general distress. The psychometric properties of the SCL-90 have been previously demonstrated. In particular, the depression and anxiety subscales are relevant to the proposed study. The internal consistency of the subscales was similar to previous studies (Cronbach’s α s = .82 to .92).

Interpersonal Support Evaluation List (ISEL). Perceived social support was assessed with a 40-item scale commonly used to measure various forms of global social support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Types of support assessed include tangible support, appraisal support, belonging support and self-esteem support. Participants will indicate whether each item is “probably true” or “probably false” about them. For example, an item assessing tangible support states “If I needed a ride to the airport very early in the morning, I would hard time finding anyone to take me”. The ISEL has shown adequate internal consistency and test-retest reliability (Cohen & Hoberman, 1983). The internal consistency in this study was $\alpha = .86$ for men and $\alpha = .88$ for women in this study.

The Beck Depression Inventory – Revised (BDI-II). Depressive symptoms were assessed with the 21-item BDI-II (Beck, Steer, & Browne, 1996). This measure has demonstrated good factorial and convergent validity as well as high internal consistency (Beck et al., 1996; Steer & Clark, 1997). The internal consistency of the BDI-II in this sample was .89 for men and .93 for women at visit one.

Toronto Alexithymia Scale (TAS). The TAS is a commonly used 20-item self-report measure of alexithymia (Bagby, Parker, & Taylor, 1994). The psychometric properties of the TAS have been examined in over a dozen studies across many cultures (e.g., Kauhanen, Julkunen, & Salonen, 1992). Factor analyses of the TAS reveal three primary factors: difficulty identifying feeling (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). Cut-off criteria differentiating alexithymic (above 61) from non-alexithymics have been established and are widely utilized (Bagby,

Taylor, Parker, 1994). The internal consistency of the overall scale was adequate for men ($\alpha = .86$) and for women ($\alpha = .85$). The DIF subscale ($\alpha = .88$ for men and $\alpha = .85$) and DDF subscale ($\alpha = .86$ for men and $\alpha = .81$) also had adequate internal consistency, but the EOT did not ($\alpha = .59$ for men and $\alpha = .63$).

Patient Health Questionnaire (PHQ-9). The PHQ-9 (Spitzer, Kroenke, & Williams, 1999) was added to the second round of data collection to assess depression. This 9-item self-report measure provides cutoffs of symptom levels indicative of a major depression diagnosis as well as scores for depressive symptom severity. Severity was scored by summing the scores on the 9 items. Participants were asked to rate the degree in which they have experienced each of the nine symptoms of depression in the last two weeks from “not at all = 0” to “nearly every day = 4”. The range of scores was from 0 to 21 for women at the first visit and 0 to 20 at the second visit. The range of scores for men was 0 to 16 for first visit and 0 to 21 for second visit. A score between 5 -9 indicates mild depression, 10-14 indicates moderate depression, and above 15 indicates severe depression. Internal consistency was adequate (Cronbach’s $\alpha = .86$ for men and $.87$ for women).

Observer Alexithymia Scale (OAS). The 33-item OAS was used to assess partner-rated alexithymia. This measure is internally consistent (coefficient $\alpha s = .88$ and $.89$) and has good test-retest reliability (Haviland, Warren, & Riggs, 2000). It has excellent convergent validity with other measures of alexithymia as well as a stable factor structure (Haviland, Warren, Riggs, & Nitch, 2002). The internal consistency of the scale in this study was $.91$ for men and $.88$ for women.

Emotional Intelligence Scale (EIS). This scale is designed to measure the emotional intelligence construct as described by Salovey and Mayer (1990). More specifically, the scale assesses emotional recognition in self and others, emotional regulation, and the ability to effectively utilize emotional information in problem-solving situations (Schutte et al., 1998). This 33-item scale has good discriminant validity (e.g., not associated with cognitive ability or most personality traits) and convergent validity (e.g., correlated with alexithymia $r = -.65$) as well as adequate reliability (Schutte et al., 1998). Internal consistency of the EIS was .90 for men and .91 for women in this sample.

Personal Assessment of Intimacy in Relationships (PAIR). Intimacy was assessed with the PAIR emotional and intellectual subscales (Schaefer & Olson, 1981). This measure assesses both the degree of perceived intimacy in the relationship as well as desired level of intimacy for each subscale. The 6-item emotional intimacy subscale assesses closeness of feelings (e.g., “I can state my feelings without him/her getting defensive”) and the 6-item intellectual intimacy subscale assesses sharing of ideas (e.g., “My partner helps me clarify my thoughts”). The PAIR subscales have adequate convergent and discriminant validity, internal consistency, and split-half reliability (Schaefer & Olson, 1981). Cronbach’s alphas in this study were .91 for men and .93 for women.

Couples’ Emotional Awareness Scale (CEAS). The CEAS is a 14-item structured interview that assesses relationship-specific awareness of emotions of oneself and one’s partner (Croyle & Waltz, 2002). It is based on the widely used Levels of Emotional Awareness Scale (LEAS) developed to test more global emotional awareness (Lane

Quinlan, Schwartz, Walker, & Zeitlin, 1990). Fourteen brief common couple situations are presented and the participant is asked to verbally report how he or she would feel as well as how their partner would feel. Responses are audiotaped and coded on a scale of 0 to 4 with higher scores indicating greater emotional awareness. Separate scores are coded for self and partner emotional awareness in addition to a total score for each scenario. The scale has good internal consistency (Cronbach's $\alpha = .79$) and test-retest reliability at 2-4 weeks ($r = .70, p < .01$; Croyle et al., 2002). Internal consistency in this sample was similar to previous reports ($\alpha = .79$ for men, $\alpha = .81$ for women). Interviews were coded by a second rater for 75% of interviews. Inter-class correlation coefficients (ICCs) for each of the 14 item ranged from .64 to .93; ICCs for the total scale were .92 for men and .93 for women.

Daily Diary Measures

Daily Relationship Satisfaction. Overall daily relationship satisfaction was measured with a single item that has been used in previous studies (e.g., Johnson & O'Leary, 1996). Participants rated the degree that they are satisfied or dissatisfied with their relationship on a 9-point scale with higher scores indicating more relationship satisfaction.

Daily Relationship Behaviors. Positive and negative relationship behaviors were assessed with 20 items derived from the Spouse Observational Checklist (SOC; Weiss & Perry, 1983). Positive and negative behaviors by one's self and one's partner were reported by each member of the couple separately. This subset of the SOC was selected due to previous research indicating that these items were significant predictors of marital

satisfaction and were a manageable amount of items to be reported each day, in contrast to the total SOC which is too burdensome to the participants resulting in limited compliance (Johnson & O’Leary, 1996). Daily behaviors (e.g., “I did something to spite my spouse”, “I said something unkind to my spouse”) were rated on a likert scale from ‘0 = not at all true,’ to “4 = extremely true”.

Daily Relationship Intimacy. Daily intimacy was measured by asking spouses to rate the overall quality of closeness in the relationship each day on a scale from 0 to 4. Additional information on intimate interactions was also obtained for hypotheses not included as part of this dissertation using a fifteen item modified version of the Interaction Record Form (Prager & Buhrmester, 1988). Participants were asked to rate the quality of an interaction they had with their partner that day as well as the time it took place, duration, and interaction topic. Items such as pleasantness, intimacy, and feeling understood were rated on a 4-point scale indicating “very true of this interaction” to “not at all true of this interaction”. The correlation between the interaction intimacy measure and the daily overall closeness score was high ($r = 0.85, p < .001, N = 102$ for women; $r = 0.82, p < .001, N = 102$ for men).

Daily Relationship Conflict. Relationship conflict was assessed at two points in the daily diary survey in slightly different ways. Spouses were first asked about arguments or tensions with their partner that day and to rate the degree to which the interaction bothered them on a scale of 1 to 9. Spouses were later asked whether they had a disagreement with their spouse and provided an opportunity to list the topic of the disagreement and similarly rate the disagreement for bothersome level. The correlation

between these two items was .74 for men and .81 for women. Conflict between partners was reported on 33.4% of total days for women and 27.8% of total days for men. The mean conflict intensity rating was 4.00 (SD=2.35) for men and 4.68 (SD=2.51) for women.

Daily Affect. Daily positive and negative affect was assessed with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988). Participants were asked to rate on a 1 to 5 scale, the degree to which 10 adjectives describing positive affective states and 10 adjectives describing negative affective states is experienced that day. This scale has been shown to be valid for varied time frames such as daily reports to weekly reports.

Visit 2 - Measures

Weekly Affect. Each member of the couple rated their own and their partner's affect over the past week using the Positive and Negative Affect Schedule (PANAS) described above (Watson et al., 1988). This measure was administered at visit 2 in order to ascertain how accurate each partner rated the emotional experience of the other over the course of one week. This measure has been validated for daily and weekly time periods in previous research. Cronbach's alphas for self report and partner report were all excellent (α s = .87 to .95).

The Beck Depression Inventory – Revised (BDI-II). Depressive symptoms were assessed with the 21-item BDI-II (Beck, Steer, & Browne, 1996) described earlier. The BDI-II was readministered to participants at the second visit. Internal consistency of this measure for men was .90 and for women was .93.

The TAS, DAS, and PHQ-9, described earlier, were included at time 2 to gather test-retest reliability data. These additional assessments were included later in the study and are therefore only presented for approximately half of the sample. Internal consistencies for these measures ranged from .82 to .96 for men and women.

Missing Data Management

Five couples were deleted completely from the analyses because of a computer problem with the online questionnaires where their data was lost due to a server-wide problem. One additional couple withdrew from participation for other reasons (child care issues). An additional four couples' data was also impacted by computer problems (mentioned above) but for only a subset of their questionnaires (e.g., second visit only).

This resulted in 104 couples for analyses involving visit one variables and 99-100 couples for visit two and daily variables (see Tables 2 and 3 for each study variable n). Full information maximum likelihood estimation was used for modeling analyses of visit 1 and visit 2 data to account for missing data resulting in a sample of $N = 104$ for those analyses.

Questionnaires that were added to the study after the first phase on data collection was complete (PHQ at visit 1; DAS, PHQ, TAS at visit 2), are presented for a subset of the sample. Ninety-two individuals participated during the second phase of the study.

Data Collection Time Period Comparisons

Data was collected during two separate time periods with the first round occurring May 2005 to June 2006 and the second round of data collection occurring June 2007 to June 2008. Independent t -tests were conducted to compare the first round of data

collection to the second round. There were no statistically significant differences on any of the study variables among women. There were only two statistically significant differences of the seventy-five variables examined among men (using a conservative criteria of $p < .01$ to account for the number of tests). Male participants in the second round of data collection reported more family income and marital length than those in the first round of data collection. Given the few statistically significant differences between the two rounds, all analyses are conducted with the full sample combining both rounds of data collection.

Results

Characteristics of the Sample

Descriptive statistics of the study measures at the three assessments are provided in Table 2. Briefly, scores on the BDI-II, DAS, and TAS are detailed in order to clarify the composition of the sample since each of these measures has established clinically meaningful cut-off criteria. Symptom levels were similar to expected frequencies in a community sample. The majority of men and women in the sample were not clinically depressed; 6.8% of men and 13.5% of women scored in the mild range on the BDI-II (scores between 15 and 19). Moderate or severe depressive symptoms were reported by 5.7% of men and 12.5% of women (BDI-II scores above 19). Consistent with expectations based on other community samples (Linden, Wen, & Paulhaus, 1994),

10.7% of men and 9.6% of women scored in the alexithymic range on the TAS (scores 61 or greater). The average relationship satisfaction level was 112.84 for men and 109.64 for women, similar to other community samples (e.g., Slep & O’Leary, 2005). One quarter of the sample scored below 100 of the DAS, indicating at least some level of marital distress and 11.5% scored below 85 indicating severe marital distress. This indicates that the sample is similar to other community samples on alexithymia, depressive symptoms, and relationship satisfaction.

Daily Diary Sample Descriptives

Two hundred and four individuals had analyzable daily diary data after two couples were removed for missing more than half the survey days for one partner. This resulted in 1428 days of data of which 89.1% of days were complete for men and 94.4% of days were complete for women. Missing days were primarily due to a software glitch in the hand-held computers in which entries were rejected. Six days or more were completed by 93.1% of women and 81.4% of men; five days were completed by 11.8% of men and 6.9% of women. Overall, 87.3% of participants had one or zero days missing, 9.3% had two days missing, 2.5% had three days missing, and 1.0% had four days missing. Descriptive statistics for the daily diary variables are presented in Table 3. Graphical examination of daily variation in relationship satisfaction, intimacy, mood, and relationship behaviors indicated ample variability within couples across the week.

Correlations among Emotional Ability Measures

Intercorrelations among emotional ability measures are provided in Table 4 for the four emotional abilities measures included in this study. Self-reported alexithymia

(TAS), partner-reported alexithymia (OAS), and emotional intelligence (EIS) were all significantly correlated for men and women. Interview-rated emotional awareness was only significantly correlated with the TAS external oriented thinking subscale (EOT) and OAS for men and was not significantly correlated with any emotional abilities measures for women. Within the TAS subscales, the EOT related less consistently to the other measures than the DIF and DDF subscales. In addition, the DIF and DDF were significantly correlated with the overall TAS score (r_s above .8). Because of the low internal consistency of the EOT subscale and high association between the other two subscales and the total TAS score, only the TAS total score was analyzed, as has been recommended (Kooiman, Spinhoven, & Trijsbugh, 2002).

Correlations among couples' emotional abilities are provided along the diagonal in Table 4. OAS, EIS, and CEAS were significantly correlated for partners, but TAS was not. The significant covariance between partners supports the strategy adopted in later analyses where the APIM framework is used, permitting the ability to control for dyadic influence in examining the impact of emotional abilities in couples.

Correlations among Emotional Abilities, Mood, and Relationship Functioning

Hypothesis 1a: Results for correlation analyses of men's and women's emotional abilities with marital and mood functioning are provided in the first four columns in Table 5. Women's TAS, OAS, and EIS scores were significantly associated to all hypothesized variables (except TAS with aggression), but women's CEAS scores were not significantly associated with any of the hypothesized variables. Men's TAS, OAS, and EIS scores were significantly related to most hypothesized variables. Men's EIS and

TAS scores were not significantly correlated with aggression and men's OAS scores were not correlated with their perceived social support or anxiety symptoms. Men's CEAS scores were not significantly related to any of the relationship functioning variables, but were significantly positively related to all mood variables (depressive and anxiety symptoms). The positive association between men's higher emotional awareness as measured by the CEAS and mood symptoms were contrary to the hypothesized direction. All other significant correlations supported higher emotional abilities being related to less mood symptoms and higher relationship functioning.

Hypothesis 1b: Results for the association between *partner's* emotional abilities with mood and marital functioning are reported in the last 4 columns in Table 5. As demonstrated in the table, partner's OAS scores significantly correlated with all hypothesized variables for men and women. Results for men's emotional abilities as measured by the EIS and TAS also supported partner effects. Men's EIS and TAS scores were significantly correlated with all women's relationship and mood variables with the exception of aggression for both TAS and EIS and anxiety symptoms for EIS.

The association between women's emotional abilities with men's marital and mood functioning was less consistent. Women's EIS scores were associated with men's all relationship functioning variables except men's social support. Women's EIS scores were not significantly related to any of men's mood variables. Women's TAS scores were significantly correlated with all hypothesized variables except men's problem-solving communication, relationship satisfaction, anxiety symptoms, and visit one depression symptoms. Women's higher CEAS scores were significantly related to men's

poorer reported affective communication and more depressive symptoms. In contrast, men's higher CEAS scores were significantly related to better reported affective communication and intimacy for women.

Correlations among Emotional Abilities, Daily Mood and Relationship Functioning

Hypotheses 1c: Average scores were summed across the week and correlated with hypothesized variables¹. Bivariate correlations among daily diary variables and one's own emotional abilities are presented in the first four columns of Tables 6 and 7. Men's and women's own emotional abilities, to a large degree, significantly correlated with daily relationship behaviors, relationship satisfaction, intimacy, and mood. OAS was most consistently related to daily variables with EIS and TAS also demonstrating most of the hypothesized relationships. Similar to results with time 1 data, higher CEAS scores for men predicted more negative affect contrary to the hypothesis. This was the only daily variable associated with CEAS significantly for men. Women's ratings of their partner's daily mood as more negative also was significantly associated with higher women's CEAS scores, illustrating the same pattern described with the time 1 data.

Hypotheses 1d: Correlations between partners' emotional abilities and daily variables are presented in the last four columns of Tables 6 and 7. OAS was associated with all hypothesized variables for men and women. Higher EIS scores were also associated with most of the hypothesized daily variables for men and women. In contrast, TAS and CEAS evidenced few statistically significant associations with the daily variables. Partner's higher alexithymia scores on the TAS were only significantly related to less relationship satisfaction for men and women and less intimacy for women. Again,

consistent with the time 1 results, higher emotional awareness scores on the CEAS for women was associated with their male partners reporting more negative affect and less positive affect. Men's higher emotional awareness was associated with women reporting more daily intimacy and support.

Footnote

¹ Regression analyses are presented in the next section that takes into account the multi-level nature of the data. Results were similar whether averaged across days or examined in a multi-level analyses.

Backward Stepwise Regression Analyses – Time 1

In order to better understand the overlap between the emotional abilities measures included in this study before conducting the hypothesized mediation analyses, backward stepwise regressions were performed entering OAS, EIS, CEAS, and TAS into the equations. Results of the stepwise regression are presented in Tables 8 and 9 for men and women, respectively. When predicting depressive or anxious symptoms, results indicated that a combination of TAS, OAS, and CEAS made unique contributions to the equations. EIS was not a significant unique predictor of depression or anxiety for men or women in the context of the other emotional abilities measures. In terms of relationship functioning, OAS, TAS, and EIS made unique contributions to predicting at least one relationship construct (intimacy, relationship satisfaction, social support, affective communication, or problem-solving communication). Furthermore, CEAS and TAS predicted more variance in mood when included together than separately (i.e., suppression effect) for men. CEAS did not uniquely predict any of the relationship variables for men or women.

Overall, results of the backward stepwise regression analyses indicated that the OAS and TAS best predicted marital functioning and mood. EIS only added unique variance in predicting relationship satisfaction and CEAS only added unique variance in predicting men's depression and anxiety symptoms. However, because all 4 variables made unique contributions in predicting mood or relationship functioning, they were retained for subsequent mediation analyses.

Mediation Analyses - Data Analytic Strategy – Hypothesis 2a

A priori hypotheses included twelve mediation models with the four emotional abilities measures predicting depression via three relationship functioning variables (social support, intimacy, relationship satisfaction) as presented in Figure 1. Due to the sample size, testing all 12 variables simultaneously as latent factors was not plausible; instead, each model was tested separately using path analyses. The guidelines provided by Baron and Kenny (1986) were used to determine which of the twelve mediation models met the criteria for mediation.

The first criterion for mediation is that emotional abilities significantly relate with depressive symptoms when examined without the mediator. As noted above, all zero-order correlations between emotional abilities (TAS, OAS, CEAS, and EIS) were significantly associated with depressive symptoms for men (see Table 5). TAS, OAS, and EIS were significantly associated with depressive symptoms for women. Therefore, all 4 emotional abilities met this first step of mediation for men or women and were retained for further testing given that all analyses were conducted at the dyadic level.

A second criterion is that emotional abilities should be associated with relationship functioning. Results in Table 5 presented above indicated that OAS, EIS and TAS were significantly associated with men's and women's relationship satisfaction and intimacy. All three were also significantly associated with women's perceived social support and two (EIS and TAS) were significantly associated for men. Hence, OAS, EIS, and TAS were associated with the three mediator variables for both men and women (with the exception of OAS and PSSS for men) and met the second mediation criterion. Men's CEAS was associated significantly only with women's intimacy and there were no

significant associations for women's CEAS. Therefore, CEAS was examined only as a predictor in testing whether it was mediated by intimacy, but was not tested for relationship satisfaction or social support.

Final criteria for mediation is that relationship functioning predict depressive symptoms after controlling for the association with emotional abilities. This can be illustrated by a significant reduction in the direct effect from emotional abilities to depression after the mediation path is included (significant Sobel's Z). Mediation is also supported if the model allowing for direct paths from emotional abilities to depression does not result in a significantly better model fit than the model without direct effects. To accomplish these steps, and also examine overall model fit with additional partner effects, I adopted a multiple step approach detailed below.

Path analysis with Mplus 5.1 software was used to test whether relationship functioning mediated the link between emotional abilities and depression with an APIM framework (Kashy & Kenny, 2000; Muthén & Muthén, 2007). Full information maximum likelihood estimation was used to account for missing values ($N = 208, 104$ couples). Model fit was evaluated by a) non-significant chi-square values, b) Comparative fit indices (CFI) $> .90$, c) TLI $> .90$, and d) squared residual mean (SRMR) $< .08$. Robust test statistics were used to account for non-normality in the data (e.g., slight skew in DAS and BDI-II).

First, the initial model as hypothesized in Figure 1 without the direct effects from emotional abilities to depression was tested. Second, a model with the direct effects included was tested. The model fit of these two nested models were compared. The

difference between the robust chi-square values for Model 1 and 2 was calculated to determine whether Model 2 resulted in a significant improvement in model fit over Model 1 using the comparison approach recommended by Muthén & Muthén for robust chi-square difference testing (2008). A significant chi-square value indicates that Model 2 is a better fit to the data than Model 1. Results are provided in Table 10. In order to specifically examine whether the mediation was statistically significant, the significance of the indirect paths for men and women were examined with Sobel's Z and are provided in Table 10, as well.

Lastly, partner effects not included in the initial model were examined to see whether they would improve model fit. Adding paths from emotional abilities to partner's depression and paths from relationship functioning to partner's depression were tested. All significant partner effects are included in Table 10 as "Model 3". When partner effects were present, I tested whether there was also significant mediation of emotional abilities, relationship functioning, and depressive via a partner effect rather than the actor effect (e.g., men's emotional abilities predicting women's depression through women's relationship satisfaction) and whether Model 3 resulted in a significant reduction in chi-square compared to Model 2. The standardized path coefficients for each of the 10 mediation models tested are included in Figures 3 – 12. Figures are reflective of Model 2 unless there were significant partner effects (Model 3). In those case (figures 8-12), standardized path coefficients for Model 3 are presented to illustrate the significant partner effects.

Mediation Analyses - Results Overview- Hypotheses 2a

As can be seen in Table 10, results across emotional abilities measures and forms of relationship functioning supported mediation hypothesized as indicated by significant Sobel's Z and satisfactory model fits. Significant indirect paths supporting mediation (Sobel's Z) were found for 9 of the 10 models tested. The only model tested that did not evidence mediation was TAS predicting depression via relationship satisfaction. For this model, direct paths from one's own alexithymia continued to predict significant variance in depression symptoms for men and women. In addition, men's TAS also significantly predicted women's depressive symptoms directly. This pattern of men's emotional abilities directly predicting women's depression was found for all three models with the TAS scale (see Figures 9-11).

Despite the significant mediation found for at least one partner in 9 of the 10 of the models, many direct paths were still statistically significant, suggesting partial mediation. Model 2 with the direct paths included, tended to result in improved model fit over Model 1. Chi-square difference tests between the two nested models indicated that Model 2 resulted in a significant reduction in chi-square for 5 of the 10 models. When significant partner effects (Model 3) were found, chi-square difference tests were performed between Models 2 and 3. Model 3 resulted in a significant reduction in chi-square estimates compared to Model 2 for all 5 of the models with significant partner effects (see Figures 8-12). However, mediation tests for partners' emotional abilities generally were not statistically significant (see Figures 9 and 12 for exceptions), suggesting that mediation of emotional abilities - depressive symptoms link through relationship functioning is best explained by one's own emotional abilities.

Mediation Analyses - Social Support as a Mediator – Hypothesis 2a

Social support consistently mediated the link between emotional abilities and depressive symptoms (see Figures 3, 6, and 9). It was a significant mediator of the link between women's emotional abilities and depressive symptoms for all three models. It also was a significant mediator of models for men's EIS and TAS as predictors. The model with EIS (see Figure 3) evidenced a pattern of significant paths identical to the hypothesized model (see Figure 1). All three models supported the hypothesis that men's emotional abilities predict women's perceived social support over and above women's own emotional abilities.

Mediation Analyses - Intimacy as a Mediator – Hypothesis 2a

Models with men's EIS, OAS, and TAS all supported men's intimacy as a mediator between their emotional abilities and depressive symptoms (see Figures 4, 7, and 10). In addition, men's higher emotional awareness (CEAS) and women's depression was significantly mediated by women's intimacy (see Figure 12). Women's emotional abilities tended to have a direct relationship with depressive symptoms that was not mediated by their intimacy levels. Women's emotional abilities as measured by the TAS, EIS, and OAS also significantly predicted their partners' intimacy levels in addition to their own intimacy levels. These results support the supposition that partners' emotional abilities are important to understanding both members' intimacy and depressive symptoms.

Mediation Analyses – Relationship satisfaction as a Mediator – Hypothesis 2a

Men's relationship satisfaction was not a significant mediator of the link between emotional abilities and depressive symptoms, although it was significantly predicted by men's emotional abilities (see Figures 5, 8, and 11). In contrast, women's relationship satisfaction mediated the link between women's EIS and OAS and depressive symptoms. Path coefficients between women's TAS, relationship satisfaction, and depressive symptoms were all significant, but the mediation path did not substantially reduce the direct path from women's TAS to their depressive symptoms.

Mediation Analyses –Data Analytic Strategy - Hypotheses 2b

The cross-sectional models tested in hypothesis 2a provided some support for relationship functioning mediating the link between emotional abilities and depression for men and women. Next, to further examine this hypothesis, the mediation models were tested again using a different method of measuring relationship functioning and mood (EMA approach).

Specifically, daily relationship functioning was hypothesized to mediate the link between one's own emotional abilities (as assessed at Time 1) and daily negative mood for both men and women. In addition, men's emotional abilities were hypothesized to predict women's relationship functioning and negative mood, and this link was hypothesized to be mediated by women's relationship functioning (see Figure 2).

Mediation analyses were conducted following the guidelines provided by Baron & Kenny (1986) described for hypothesis 2a. SAS PROC MIXED was used to account for the multilevel nature of the data (see Patrick, Knee, Canevello, & Lonsbary, 2007 for a similar application of SAS PROC MIXED to test mediation). Although the average

weekly levels of mood, relationship satisfaction, intimacy, and negative behaviors were of interest, simply aggregating the results across days for the analyses can result in erroneous standard errors and significance levels. A multilevel modeling approach allows for within days variance to be incorporated into the regression equations and account for the unreliability of daily estimates. In addition to structuring the equation to allow for random error in the within subjects measures (daily mood, daily satisfaction), the autocorrelation of errors between days closer in time was included in the models. Frequently, estimates of daily mood, for example, may be more correlated one day apart than they are six days apart. SAS PROC Mixed sp (pow) function was used to control for this pattern.

All analyses were conducted first examining mediation of one's own emotional abilities, relationship functioning, and negative mood. A second set of analyses were conducted to examine hypothesized partner effects.

Mediation Analyses – Results – Hypothesis 2b

Results are presented in Tables 11 and 12 for men and women, respectively. Parameter estimates and *t*-values for each step of mediation are provided in the tables. Whether there was evidence of significant autocorrelated error terms is also presented in the tables. The bivariate associations for the first two criteria of mediation are provided under headings “Step 1” and “Step 2” in the tables. CEAS was not significantly associated with relationship functioning for men and women, and therefore did not qualify for additional mediation analyses. For women, negative partner behavior was not significantly associated with TAS or OAS scores and also disqualified as a mediator of

the association between TAS and OAS with negative affect. Regression analyses of relationship functioning predicting negative mood are provided under the heading “Step 3a”. Higher relationship satisfaction, higher intimacy, and less negative partner behaviors predicted lower reported negative mood for men and women.

Results from regression models with emotional abilities and relationship functioning both included in a model predicting daily negative affect are provided under the heading “Step 3b” in Tables 11 and 12. Results support mediation if the path between the relationship variable and negative mood is significant and the path from emotional abilities to negative mood is not. Whether the indirect path through the mediator is statistically significant was calculated via Sobel’s Z and is provided in the tables. As can be seen by the tables, results supported mediation for all hypothesized models for women and all but one model for men. Negative partner behavior did not mediate the link between TAS and men’s daily negative mood. Overall, results were consistent with mediation model results from hypothesis 2a, supporting relationship functioning as a mediator between emotional abilities and negative mood.

Alternative Explanation for Hypothesis 2b - Daily Diary Method Variance

Although the results from both global and daily assessments supported the hypothesized mediation models, an alternative explanation for the results was considered. Daily diary results may have been more likely to support mediation given that relationship functioning was assessed with daily methodology similar to daily negative mood and emotional abilities were assessed at a single time point. Hence, results could be biased to support mediation by the assessment methodology selected. To address this

concern, analyses were rerun with two time 1 variables (emotional abilities and relationship functioning) and one daily variable (negative mood). Parallel mediator constructs were available for relationship satisfaction and intimacy. The correlation between the daily diary and time 1 parallel mediation constructs ranged from $r = .69$ to $r = .75$, indicating they were assessing the same construct and were appropriate for comparative analyses. If the results were due to common method variance, then emotional abilities would be less likely to be reduced to a non-significant predictor of negative mood when time 1 relationship functioning is added to the equation.

Results of these analyses were largely consistent with the mediation results presented in Tables 11 and 12, supporting significant mediation. If the direct paths from emotional abilities to negative mood were no longer significant when the mediator variables were included and Sobel's Z was statistically significant ($p < .05$), mediation was supported. Men's results supported full mediation for all analyses. Women's results supported full mediation for all analyses with TAS as the emotional abilities measure (non-significant direct path for TAS to negative mood, Sobel's Z , $p < .05$). Relationship satisfaction and intimacy were not significant mediators of the link between OAS and daily negative mood. These results differ from the previous daily diary mediation results presented in Table 12, but are consistent with results from the cross-sectional analyses (see Figures 7 and 8). Models with EIS as the predictor variable supported full mediation when relationship satisfaction was tested as a mediator. Partial mediation (significant reduction in direct path as indicated by Sobel's test, but statistically significant direct path) was found for the model with EIS as the predictor and intimacy as the mediator.

Hence, when mediation was tested using different measures to rule out the possibility that daily results presented in Tables 11 and 12 were biased by common method variance, the hypothesis that relationship functioning mediates the emotional abilities – negative mood link was supported for 10 out of the 12 comparison models.

Mediation Analyses – Partner Effects – Hypothesis 2b

Mediation analyses with SAS PROC Mixed were conducted a second time to examine hypothesized partner effects (see Figure 2). All analyses were conducted using the same procedure for testing mediation described above with both one's own and one's partner's emotional abilities included simultaneously in the equations to determine if one's partner's emotional abilities made unique contributions after controlling for one's own emotional abilities. In order to qualify for mediation analysis, one's partner's emotional abilities must be significantly associated with negative mood (step 1) and relationship functioning (step 2). Relationship satisfaction and intimacy were tested as mediators. Emotional abilities as measured by the EIS was the only male emotional abilities variable to meet these criteria in predicting women's relationship functioning and negative mood after controlling for women's own abilities. Women's OAS was the only emotional ability measure to significantly predict men's relationship functioning and negative mood after controlling for men's OAS. The mediation analyses results for these partner effects are reported for men in Table 13 and women in Table 14. Women's relationship satisfaction was a significant mediator of the association between men's EIS and women's negative affect. Men's relationship satisfaction was also a significant mediator of the association between women's OAS and men's negative mood. Similar to

the mediation results for the time 1 data (see Table 10 and Figures 3-12), there was little support for relationship functioning mediating the relationship between partners' emotional abilities and depressive symptoms after accounting for one's own abilities.

Discussion

Previous research has consistently indicated that poor emotional abilities, such as alexithymia, are linked to negative mood and depression in clinical and community samples (e.g., Carpenter & Addis, 2000; Honkalampi et al., 2001). Studies have also shown that alexithymia predicts change in depressive symptoms and response to treatment (Honkalampi, Hintikka, Koivumaa-Honkanen, Antikainen, Haatainen, & Viinamaki, 2007; Luminet, Bagby, & Taylor, 2001; Saarijarvi et al., 2001). However, previous studies have not examined poor relationship functioning as a mediator of this association despite theoretical explanations often pointing to impairment in interpersonal functioning as one of the detrimental effects of poor emotional abilities. This study sought to test whether relationship dysfunction mediated the link between poor emotional abilities and depressed mood using a variety of measures and methods.

A significant strength of this study was the inclusion of multiple methods and measures. The utilization of both global and daily measures at multiple time points permitted an opportunity for replication of results, increased ecological validity, and ability to control for inflation of associations due to common method variance. Results

across cross-sectional and daily diary methods largely supported relationship dysfunction as a significant mediator of the poor emotional abilities – negative mood link. A summary of results across measures and methodologies is provided in Table 15 to facilitate interpretation. As can be seen from this summary table, relationship functioning (relationship satisfaction, intimacy, and social support) either fully or partially mediated the link between emotional abilities and depressive symptoms in almost all cases.

The Emotional Abilities – Relationship Functioning Link

It was hypothesized that poor emotional abilities would lead to a variety of negative relationship outcomes including decreased social support, intimacy, relationship satisfaction, and increased daily negative partner behaviors. Consistent with previous research (Brackett, Warner, & Bosco, 2005; Cordova et al., 2004; Croyle & Waltz, 2002), results across daily and global assessment methods largely supported this hypothesis. One explanation for the observed associations is that poor emotional abilities lead to decreased relationship functioning through its negative impact on emotional communication between partners. Emotional communication was assessed with measures of support, intimacy, and specific affective communication scales, all of which were associated with higher emotional abilities. Couples with poor emotional abilities may also be less likely to successfully resolve conflicts due to difficulty understanding each other's emotions and being able to respond appropriately. There was some support that increased frequency and ratings of conflict over the course of a week period was associated with lower emotional abilities as scored by the OAS. Further, better problem-solving communication was also negatively associated with lower emotional abilities.

Partner Effects

Results also supported significant negative impacts of *partner's* emotional abilities on relationship functioning, even after controlling for the covariance between relationship functioning of partner's and one's own emotional abilities using an APIM framework. If one partner has poor emotional abilities (difficulty with emotional identification and expression), they not only may have difficulty getting their own emotional needs met, but also may have difficulty interpreting and responding to the emotional expressions of their partners, leading to their partner's decreased satisfaction. Relationship partners of individuals with poor emotional abilities also may be less likely to respond effectively to their spouse due to deficient emotional information communicated from the alexithymic/low EI partner. This problematic communication pattern may lead to less perceived intimacy and support in the relationship for both members. Poor intimacy, miscommunications and poor conflict resolution may lead to an overall deterioration of satisfaction in the relationship. This frustration and disappointment spouses experience due to unmet intimacy needs may lead to frequent daily negative partner behaviors, further eroding relationship quality. Consistent with this, poor *partners'* emotional abilities tended to be associated with lower perceived intimacy, less support, less relationship satisfaction, and more negative daily relationship behaviors.

However, mediation of the emotional abilities – negative mood link through partners' emotional abilities was not supported. Only two of the models with the cross-sectional data and two models with the daily diary data found significant mediation

through partner effects (see Tables 10, 13, and 14). This indicates that although partners' emotional abilities impact their spouses' relationship functioning and mood, the pathway through which poor relationship functioning leads to increased depressive symptoms via emotional abilities, is better accounted for by one's own scores, rather than one's partners.

The Emotional Abilities – Depression Link

This study replicated the well established finding that lower emotional abilities are associated with increased depressive symptoms (Taylor & Bagby, 2004). Poor emotional abilities were also found to significantly predict daily negative affect across a seven day period. Various explanations for this association have been proposed (see Taylor, Bagby, & Parker, 1997, for a review). One of the most prominent explanations for the association is that individuals with poor emotional abilities are not able to effectively utilize emotional information to cope with arising stressors. Instead, they feel confused and helpless in emotionally arousing situations, and avoid cognitive processing and verbalization of the emotional experience. This confusion leads to a general pattern of emotional dysregulation that may account for the widespread association between poor emotional abilities and various forms of psychopathology. Individuals with poor emotional abilities, when experiencing emotional distress, may turn to dysfunctional coping mechanisms such as substance abuse (Cecero & Holmstrom, 1997), problematic eating (Zonnevijlle-Bender, van Goozen, Cohen-Kettenis, van Elburg, & van Engeland, 2002), somatization of symptoms (Duddu, Issac, & Chaturvedi, 2003), and general hopelessness.

Hence, it is understandable that although there was significant mediation of the emotional abilities-depression link through relationship dysfunction, there was also substantial support for direct effects of poor emotional abilities to depressive symptoms from the cross-sectional analyses (see Table 15 summary). Interestingly, support for direct effects was less consistent in the daily diary mediation analyses with most of the models supporting full mediation instead. This differential result across methodologies does not appear to be due to common method variance, as this potential explanation was considered by examining time 1 emotional abilities and time 1 relationship functioning predicting daily negative affect. Results with this approach were similar to the daily diary results with daily relationship functioning and daily negative affect. It is possible that differences in daily negative affect and depressive symptoms may explain the results. The daily level of analyses may better capture the mediating effect that poor relationship functioning has on mood. Couples may feel upset when interactions with their partner do not go the way they wish or hoped, resulting in increased negative affect that day. Depressive symptoms, assessed with a global self-report, may instead capture a variety of ways that emotional abilities impair individual functioning in and outside the relationship. The results with perceived social support as a mediator provided some preliminary evidence for this hypothesis. Social support was assessed with a global measure of support, rather than a measure specific only to the romantic relationship. Social support was the most highly correlated relationship variable with depressive symptoms. It may be accounting for more variance in depressive symptoms because it not only accounts for the variance of romantic relationship dysfunction, but also for the

variance from global interpersonal dysfunction. Results indicated that social support mediated the emotional abilities and depressive symptoms link in all the models for women and two out of the three models for men. Hence, the emotional abilities - depressive symptoms link may be best explained by a number of factors including intimate partner as well as other relationships like friends and colleagues.

Alternatively, the tendency of BDI as an outcome to be significantly predicted by emotional abilities may reflect another outcome of alexithymia not assessed with the daily mood ratings on the PANAS. Some of the items of the BDI assess somatic symptoms, whereas the PANAS assesses only mood items. A significant association between somatization and alexithymia is well-established (De Gucht & Heiser, 2003). The tendency of individuals with poor emotional abilities to somatize may explain the direct unaccounted association between poor emotional abilities and depressive symptoms that was not mediated by relationship functioning.

Measurement of Emotional Abilities

Although the central purpose of this study was to examine the hypothesized mediation model, in order to accomplish this goal, significant attention was paid to the measurement of emotional abilities. The study of emotional abilities has flourished recently and there are several similar, yet distinct, operational definitions frequently utilized. Alexithymia is the oldest and most well studied of the emotional abilities constructs (Sifneos, 1973). Emotional intelligence and emotional awareness are newer constructs, but have also received considerable empirical support (Salovey & Mayer, 1990; Schutte et al., 1998). All three emotional abilities constructs share a similar focus

on impairment in emotional identification and expression. Emotional intelligence and emotional awareness also include assessment of impairment of emotional identification in others, in addition to one's self. However, recent fMRI research along with other studies have suggested that an inherent component of the alexithymia construct is also impairment in empathy, although not directly assessed with specific self-report items (Guttman & Laporte, 2002; Moriguchi, Decety, Ohnishi, Maeda, Mori, Nemoto, Matsuda, Komaki, 2007).

Given the conceptual overlap between these measures, yet previous research supporting their distinctiveness in studying mood functioning, four different measures of emotional abilities were used in this study to provide a more comprehensive assessment of the emotional abilities construct and how they relate to relationship functioning. Backward stepwise regression results supported the uniqueness of all four measures in either predicting relationship or mood functioning for men or women. Self and partner rated alexithymia tended to be the most consistent predictors of mood and marital functioning across variables. Emotional intelligence only added uniquely to predicting variance in relationship satisfaction for men and women; emotional awareness only added uniquely to predicting variance in depressed mood and anxiety for men. Taken together, these results suggest some utility to all three conceptualizations of emotional abilities commonly studied in understanding mood functioning. It will be important in future studies to further differentiate the critical unique and shared components that each emotional abilities measure is assessing. It will also be important to determine the extent

that the unique predictability is related to differences in measurement modality (self-report versus interviewer-rated report) rather than conceptual differences.

Emotional awareness was the least consistently related emotional abilities measure to the hypothesized mood and marital variables, bivariate. Emotional awareness was measured using the couples emotional awareness scale where responses to hypothetical relationship situations were coded for emotional content. Results with this measure differed from other measures of emotional abilities. Contrary to the hypothesis, higher emotional awareness of men and women was related to more depressive symptoms for men. Women's lower emotional awareness predicted *higher* ratings by men of affective communication, but men's lower emotional awareness predicted *lower* women's intimacy and affective communication. This is similar to the results by Croyle and Waltz (2002) that found that women's lower emotional awareness was correlated with higher relationship satisfaction. This measure tended to have less consistent and statistically significant associations than other measures of emotional abilities, suggesting it is not tapping the same construct. Other convergent validity studies with the LEAS and emotional abilities measures have also found weak support for this measure (Ciarrochi, Caputi, & Mayer, 2003; Lane, 2000). It may be that this measure is tapping a mixture of "emotional negativity" and emotional awareness that lead to the effect observed.

Responses were coded solely for degree of emotional awareness and not for emotional valence. The fourteen hypothetical situations described in the interview appeared to pull for negative emotional responses. This may explain the positive correlation between men's depressive symptoms and men's and women's higher emotional awareness. The

differential pattern for men and women in correlations with intimacy and affective communication may be partially explained by the demand-withdraw interaction patterns in couples (Christensen & Heavy, 1990). Past research has indicated that couples are less satisfied when women are more demanding (and hence, more emotionally negative) and men are more withdrawing (and perhaps less emotionally available or responsive) than relationships when the opposite is true (men are more demanding and women are more withdrawing). Future studies should include measures of demand-withdraw patterns and emotional awareness simultaneously in order to test this potential explanation for the observed gender discrepancy. A more balanced measure of emotional awareness with equal positive and negative valenced items should also be considered for future studies.

Limitations

Several limitations of this study deserve mention. First, it should be noted that due to the correlational and cross-sectional nature of the study, conclusions about directionality cannot be confirmed. The mediation modeling results can only suggest a theorized direction, and an experimental design is needed before conclusions about directionality can be confirmed. Second, alternative ways of understanding the impact of emotional abilities on relationship functioning were beyond the scope of this project but are mentioned here as a limitation. Discrepancy between partner's emotional abilities may further explain relationship problems and depressive symptoms (Croyle & Waltz, 2002). It is also plausible that emotional abilities and relationship functioning may interact to predict mood. Gallagher and Vella-Brodrick (2008) found emotional intelligence and social support from a romantic partner interacted to predict positive

mood, but none of the other interactions with EI tested were significant. EI and social support did not interact to predict negative mood in their study. However, variables can function as both mediators and moderators (Judd, Kenny, & McClelland, 2001) and the combined mediation and moderation effects of emotional abilities and relationship functioning should be explored in future studies. Third, this study consisted of a community sample of couples in committed relationships and results may not be generalizable to underrepresented minority groups, casually dating couples, or clinical samples.

Summary and Clinical Implications

Emotional abilities, measured in a variety of ways, were found to be significantly associated with relationship functioning and negative mood across daily and global assessment methods. Further, results in this study suggest that one way poor emotional abilities may lead to negative mood is through their negative impact on intimacy, perceived social support, relationship satisfaction, and partner negative behaviors. However, in a number of the cross-sectional models examined, the impact of poor emotional abilities on depressive symptoms could not be entirely accounted for by relationship functioning.

These results indicate that emotional abilities may be a potentially useful target for treatment, not only for the impact they may have on interpersonal relationship functioning, but also the impact they have on mood functioning directly. Interventions that focus on improving emotional abilities have evidenced some effectiveness in improving relationships (e.g., Emotional Focused Couples Therapy; Johnson &

Greenberg, 1985), reducing depressive symptoms (Greenberg & Watson, 2006; Watson, Gordon, Stermac, Kalogerako, & Steckley, 2003), and reducing risk for negative physical health outcomes (Beresnevsaitė, 2000). In a preliminary study of coronary heart disease patients with alexithymia, a four month treatment program resulted in significant reductions in alexithymia symptoms on the TAS compared to the a comparison control group not provided with treatment for emotional abilities. Patients in the treatment group with reduced alexithymia scores were at lower risk for negative cardiac events over a two year follow-up period compared to the control patients (Berensaviatė, 2000). Hence, interventions geared at emotional abilities may have a vast reaching impact on general functioning (improving mood, relationships, and potentially, physical health) and should be examined more closely in future studies.

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Appendix A - Tables

Table 1

Demographic Characteristics of the Sample

Demographic Variable	Men	Women
Age	M = 42.7, SD =13.5 (range = 18 to 77)	M= 41.4, SD=13.6 (range = 18 to 76)
Education Level		
% with high school	20.2	18.3
% with some college	25.0	23.1
% with Associates	9.6	9.6
% with bachelor's	23.1	20.2
% with master's	15.4	26.9
% with doctorate	5.8	1.9
Ethnicity		
% Caucasian	82.7	85.6
% Latino/Hispanic	3.8	4.8
% African American	2.9	2.9
% Asian	4.8	5.8
% Other	4.8	0.9
Marital Status		
% married		84.6
Family Income (in dollars)	M = 83,487, SD = 45,667	
Years Married	M=12.5, SD = 11.1	

N = 104 couples

Table 2

Descriptive Statistics of Time 1 and Time 2 Variables

<u>Time 1 Variables</u>	<u>Men</u>			<u>Women</u>		
	<u>Mean</u>	<u>SD</u>	<u>N</u>	<u>Mean</u>	<u>SD</u>	<u>N</u>
TAS – self-rated alexithymia	45.80	11.38	103	45.26	10.65	104
OAS – partner-rated alexithymia	28.89	15.24	104	31.37	16.71	103
EIS – emotional intelligence	3.79	0.42	103	3.81	0.41	104
CEAS – emotional awareness	2.58	0.46	102	2.70	0.46	102
TAS DIF – difficulty identifying feelings	13.37	5.58	103	14.98	5.58	104
TAS DDF – difficulty describing feelings	13.29	4.77	103	12.75	4.33	104
TAS EOT – externally oriented thinking	19.14	4.41	103	17.53	3.91	104
DAS – relationship satisfaction	112.84	20.82	104	109.64	21.43	104
PAIR - intimacy	26.75	10.15	103	29.65	11.65	104
MSI Problem-Solving Communication	51.31	8.46	104	52.64	9.51	104
MSI Affective Communication	50.39	10.01	104	50.47	11.46	104
MSI Global Distress	52.71	9.78	104	53.23	9.70	104
Social Support	7.74	5.62	104	8.06	5.99	104
Beck Depression Inventory – BDI-II	6.24	6.29	103	10.49	9.60	104
SCL-90 - Depression	5.26	6.24	104	9.75	9.96	104
SCL-90 - Anxiety	2.19	3.92	104	4.08	5.80	104
PHQ severity score (1-9)	2.78	3.94	46	3.76	3.88	46
<u>Time 2 Variables</u>						
Beck Depression Inventory – BDI-II	5.61	6.06	100	9.80	9.19	100
Negative Affect – self reported	14.49	4.58	100	15.78	5.51	100
Positive Affect – partner reported	32.13	9.16	100	30.66	8.92	100
Negative Affect – partner reported	16.76	6.43	100	14.77	5.32	100
Positive Affect – self reported	32.54	8.72	100	30.73	9.04	100

TAS – self-rated alexithymia	42.41	9.38	46	40.46	9.80	46
TAS DIF – difficulty identifying feelings	11.13	3.76	46	12.11	4.97	46
TAS DDF – difficulty describing feelings	12.17	4.48	46	10.80	3.97	46
TAS EOT – externally oriented thinking	19.11	4.42	46	17.54	4.02	46
DAS – relationship satisfaction	114.07	23.05	46	112.09	25.57	46
PHQ severity score (1 to 9 sum)	3.26	3.80	46	3.00	4.15	46

Table 3

Descriptive Statistics of Daily Diary Variables

<u>Daily Diary Variables</u>	<u>Men</u>		<u>Women</u>	
	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>
Self Positive Relationship Behaviors	2.26	0.75	2.22	0.80
Self Negative Relationship Behaviors	0.29	0.34	0.34	0.39
Partner Positive Relationship Behaviors	2.23	0.82	2.02	0.93
Partner Negative Relationship Behaviors	0.34	0.48	0.43	0.54
Self Emotional Expression	1.49	1.05	1.96	1.00
Partner Emotional Expression	1.71	1.02	1.66	1.11
Relationship Conflicts	1.10	1.28	1.56	1.46
Percentage of days with arguments	25.08	23.80	30.62	25.06
Relationship Satisfaction	7.07	1.47	7.03	1.41
Relationship Intimacy	2.26	1.11	2.28	1.31
Positive Affect – Daily PA	31.77	7.14	30.24	7.33
Negative Affect – Daily NA	14.05	3.53	14.77	3.79
Partner's Overall Affect	3.84	0.72	3.81	0.59

N = 102 men and 102 women.

Table 4

Correlations among Emotional Abilities Measures

	<u>OAS</u> total	<u>TAS</u> total	<u>TAS</u> DIF	<u>TAS</u> DDF	<u>TAS</u> EOT	<u>EIS</u> total	<u>CEAS</u> total
OAS total	.40***	.25**	.20*	.24**	.15	-.34***	-.20*
TAS total	.33***	.12	.84***	.80***	.66***	-.57***	-.05
TAS DIF	.25**	.81***	.04	.54***	.31**	-.41***	.06
TAS DDF	.35***	.84***	.55***	.01	.29**	-.51***	.09
TAS EOT	.13	.57***	.11	.31**	.07	-.39***	-.29**
EIS total	-.45***	-.52***	-.47***	-.42***	-.23*	.29*	.03
CEAS total	-.02	.01	.03	.07	-.13	-.00	.49***

* $p < .05$, * $p < .01$, * $p < .001$. Men are above the diagonal and women are below the diagonal. Correlations on the diagonal are among partners' emotional abilities. $N = 101$ men and $N = 101$ women. OAS total = Observer-rated alexithymia. TAS total = Toronto alexithymia scale. TAS DIF = Toronto alexithymia scale, difficulty identifying feelings subscale. TAS DDF = Toronto alexithymia scale, difficulty describing feelings subscale. TAS EOT = Toronto alexithymia scale, externally oriented thinking subscale. EIS total = Emotional intelligence scale. CEAS total = Couples' emotional awareness scale.

Table 5

Men's and Women's Correlations among Emotional Abilities, Marital Functioning, and Psychological Distress – Hypothesis 1a & 1b

<u>Men's Scores</u>	<u>Own Emotional Abilities</u>				<u>Partner's Emotional Abilities</u>			
	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>
Relationship satisfaction	-.64*	.39*	-.30*	.11	-.69*	.32*	-.13	-.17
PAIR Intimacy	-.53*	.44*	-.45*	.09	-.82*	.36*	-.25*	-.04
MSI psc.	-.52*	.31*	-.42*	.15	-.67*	.35*	-.11	-.09
MSI affective com.	-.52*	.29*	-.35*	.07	-.70*	.42*	-.23*	-.22*
MSI aggression	.30*	-.11	.13	.02	.42*	-.33*	.20*	-.05
Social support	-.19	.39*	-.47*	-.09	-.54*	.16	-.22*	-.15
BDI time 1	.20*	-.37*	.54*	.24*	.36*	-.09	.16	.22*
BDI- time 2	.28*	-.30*	.49*	.21*	.40*	-.10	.22*	.21*
SCL-90 depression	.24*	-.36*	.49*	.20*	.33*	-.07	.21*	.29*
SCL-90 anxiety	.06	-.23*	.38*	.20*	.25*	-.03	.08	.18
<u>Women's Scores</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>
Relationship satisfaction	-.54*	.46*	-.34*	-.06	-.74*	.28*	-.21*	.11
PAIR Intimacy	-.51*	.38*	-.27*	.05	-.78*	.24*	-.20*	.29*
MSI psc.	-.50*	.28*	-.27*	-.04	-.71*	.21*	-.20*	.12
MSI affective com.	-.51*	.30*	-.23*	-.05	-.76*	.20*	-.23*	.20*

MSI aggression	.35*	-.29*	.18	.08	.48*	-.14	.08	-.07
<u>Women's Scores</u> <u>(cont.)</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>
Social support	-.42*	.47*	-.57*	-.06	-.41*	.36*	-.34*	.02
BDI time 2	.40*	-.33*	.44*	.06	.32*	-.25*	.34*	.08
SCL-90 depression	.49*	-.35*	.49*	.11	.38*	-.25*	.36*	-.06
SCL-90 anxiety	.45*	-.31*	.46*	.02	.20*	-.18	.28*	-.09

N = 101-104 men and women, * *p* < .05. Psc. = problem-solving communication.

Table 6

*Men's Correlations among Emotional Abilities and Daily Diary Variables –**Hypothesis 1c & 1d*

	<u>Own Emotional Abilities</u>				<u>Partner's Emotional Abilities</u>			
	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>
Self Pos. Beh.	-0.37*	0.41*	-0.22*	0.13	-0.27*	0.18	-0.08	-0.02
Self Neg. Beh.	0.40*	-0.28*	0.20*	-0.02	0.48*	-0.14	0.11	0.08
Partner Pos. Beh.	-0.43*	0.45*	-0.25*	0.08	-0.48*	0.33*	-0.15	-0.04
Partner Neg. Beh.	0.39*	-0.20*	0.11	0.01	0.62*	-0.26*	0.09	-0.01
Relationship Conflicts	0.26*	-0.15	0.08	0.04	0.42*	-0.12	-0.07	0.09
Relationship Satisfaction	-0.51*	0.47*	-0.34*	0.12	-0.61*	0.24*	-0.22*	-0.12
Intimacy	-0.39*	0.36*	-0.23*	0.11	-0.54*	0.28*	-0.15	-0.14
Pos. Affect	-0.28*	0.51*	-0.30*	-0.02	-0.31*	0.28*	-0.12	-0.21*
Neg. Affect	0.21*	-0.20*	0.21*	0.21*	0.39*	-0.17	0.07	0.26*
Partner Mood ^a	-0.40*	0.40*	-0.21*	0.03	-0.59*	0.31*	-0.17	-0.08

N = 101-102 men. * $p < .05$. ^a Higher scores indicate more positive mood ratings. Pos. = positive. Beh. = Behavior. Neg. = Negative.

Table 7

*Women's Correlations among Emotional Abilities and Daily Diary Variables –**Hypothesis 1c & 1d*

	<u>Own Emotional Abilities</u>				<u>Partner's Emotional Abilities</u>			
	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>	<u>OAS</u>	<u>EIS</u>	<u>TAS</u>	<u>CEAS</u>
Self Pos. Beh.	-0.48*	0.46*	-0.30*	-0.03	-0.51*	0.32*	-0.17	0.09
Self Neg. Beh	0.41*	-0.02	0.16	0.06	0.30*	-0.19	0.04	0.13
Partner Pos. Beh.	-0.45*	0.39*	-0.23*	-0.03	-0.66*	0.32*	-0.19	0.16
Partner Neg. Beh.	0.46*	-0.10	0.20*	0.04	0.58*	-0.27*	0.10	-0.01
Relationship Conflicts	0.40*	-0.17	0.16	0.18	0.52*	-0.22*	0.05	0.13
Relationship Satisfaction	-0.48*	0.29*	-0.23*	0.01	-0.68*	0.30*	-0.23*	0.15
Intimacy	-0.46*	0.36*	-0.21*	0.05	-0.68*	0.25*	-0.22*	0.24*
Pos. Affect	-0.45*	0.50*	-0.30*	-0.13	-0.45*	0.29*	-0.15	0.07
Neg. Affect	0.42*	-0.19 ^a	0.21*	0.11	0.30*	-0.26*	0.15	0.17
Partner Mood ^a	-0.36*	0.16	-0.12	-0.20*	-0.57*	0.37*	-0.17	-0.06

N = 101-102 women, ^a *p* = .055, **p* < .05. ^b Higher scores indicate more positive mood ratings. Pos. = positive. Beh. = Behavior. Neg. = Negative.

Table 8

Men's Backward Stepwise Regression of Emotional Abilities Measures in Predicting Unique Variance in Marital Functioning and Mood

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>Partial R</i>	<i>Model R²</i>
<u>Relationship satisfaction</u>					
OAS	-0.81	0.11	-7.50***	-0.60	0.46
EIS	9.52	3.89	2.45*	0.24	
<u>Social support</u>					
TAS	-0.23	0.04	-5.29***	-0.47	0.22
<u>Intimacy</u>					
OAS	-0.30	0.05	-5.51***	-0.48	0.39
TAS	-0.30	0.07	-4.21***	-0.39	
<u>Affective communication</u>					
OAS	-0.30	0.06	-5.51***	-0.49	0.34
TAS	-0.22	0.07	-2.97**	-0.29	
<u>Problem-solving communication</u>					
OAS	-0.25	0.05	-5.24***	-0.47	0.34
TAS	-0.21	0.06	-3.35**	-0.32	
<u>SCL-90 Depression</u>					
TAS	0.02	0.00	5.66***	0.49	0.28
CEAS	0.21	0.09	2.31*	0.23 ^a	
<u>SCL-90 Anxiety</u>					
TAS	0.13	0.03	4.09***	0.38 ^a	0.18
CEAS	0.19	0.08	2.32*	0.23 ^a	

BDI – time 2

TAS	0.23	0.05	4.95***	0.46 ^a	0.32
CEAS	3.42	1.17	2.93**	0.29 ^a	
OAS	0.08	0.04	2.27	0.23	

*** $p < .001$, ** $p < .01$, * $p < .05$. $N = 101$ for all analyses except BDI time 2, $n = 98$.

^a Suppression effect.

Table 9

Women's Backward Stepwise Regression of Emotional Abilities Measures in Predicting Unique Variance in Marital Functioning and Mood

	<i>b</i>	<i>SE</i>	<i>t</i>	<i>Partial R</i>	<i>Model R²</i>
<u>Relationship satisfaction</u>					
OAS	-0.54	0.12	-4.68***	-0.43	0.33
EIS	12.15	4.88	2.49*	0.24	
<u>Social support</u>					
OAS	-0.09	0.03	-2.95**	-0.29	0.33
TAS	-0.25	0.05	-4.97***	-0.45	
<u>Intimacy</u>					
OAS	-0.36	0.06	-5.95***	-0.51	0.26
<u>Affective communication</u>					
OAS	-0.36	0.06	-6.13***	-0.52	0.27
<u>Problem-solving communication</u>					
OAS	-0.27	0.05	-5.40***	-0.48	0.23
<u>SCL-90 Depression</u>					
OAS	0.02	0.00	4.20***	0.39	0.36
TAS	0.03	0.01	4.32***	0.40	
<u>SCL-90 Anxiety</u>					
OAS	0.01	0.00	3.72***	.35	0.30
TAS	0.02	0.01	3.73***	.35	
<u>BDI – time 2</u>					
OAS	0.16	0.05	3.15**	0.31	0.21
TAS	0.21	0.08	2.53*	0.25	

*** $p < .001$, ** $p < .01$, * $p < .05$. $N = 101$ for all analyses except BDI time 2, $n = 99$.

Table 10

Mediation Results – Hypothesis 2a

	<u>Model Fit Parameters</u>						<u>Sobel's Z</u>		
	<u>χ^2</u>	<u>df</u>	<u>CFI</u>	<u>TLI</u>	<u>SRMR</u>	<u>$\Delta\chi^2$</u>	<u>Men</u>	<u>Women</u>	<u>Partner</u>
<u>EIS-Social support-BDI</u>									
Model 1	5.72	6	1.0	1.0	.05				
Model 2	4.97	4	.99	.97	.05	0.66	-4.36**	-3.19**	
<u>EIS-Intimacy-BDI</u>									
Model 1	7.85	6	.98	.95	.06				
Model 2	2.80	4	1.0	1.0	.04	5.59	-2.89**	-2.52*	
<u>EIS-Relationship satisfaction-BDI</u>									
Model 1	10.48	6	.95	.88	.06				
Model 2	5.08	4	.99	.96	.04	6.53*	-1.57	-2.81*	
<u>OAS-Social support-BDI</u>									
Model 1	9.96	6	.97	.93	.06				
Model 2	2.11	4	1.0	1.0	.02	8.39*	NA	2.33*	
<u>OAS-Intimacy-BDI</u>									
Model 1	6.19	6	1.0	1.0	.05				
Model 2	0.57	4	1.0	1.0	.01	5.54	3.09**	1.68	
<u>OAS-Relationship satisfaction-BDI</u>									
Model 1	14.35*	6	.95	.89	.07				
Model 2	10.28*	4	.97	.88	.05	4.06	1.54	2.08*	
Model 3	1.92	3	1.0	1.0	.02	10.59**	-0.45	2.06*	-0.46
<u>TAS-Social support-BDI</u>									
Model 1	14.99*	6	.95	.88	.07				
Model 2	6.23	4	.99	.96	.06	9.23**	3.67**	3.86**	
Model 3	2.68	3	1.0	1.0	.03	4.49*	3.63**	3.50**	3.26**
<u>TAS-Intimacy-BDI</u>									
Model 1	31.74**	6	.77	.46	.11				
Model 2	8.74	4	.96	.85	.07	28.15**	3.02**	1.81	
Model 3	1.33	3	1.0	1.0	.02	10.50**	3.02**	1.63	1.53

(Table 10 continued)

	<u>Model Fit Parameters</u>						<u>Sobel's Z</u>		
	<u>χ^2</u>	<u>df</u>	<u>CFI</u>	<u>TLI</u>	<u>SRMR</u>	<u>$\Delta\chi^2$</u>	<u>Men</u>	<u>Women</u>	<u>Partner</u>
<u>TAS-Relationship satisfaction-BDI</u>									
Model 1	42.17**	6	.69	.27	.12				
Model 2	13.12*	4	.92	.72	.08	36.95**	1.33	1.92	
Model 3	1.20	2	1.0	1.0	.02	9.98**	-0.08	1.85	1.32 ^a 1.63 ^b
<u>CEAS-Intimacy-BDI</u>									
Model 1	13.03*	6	.91	.79	.08				
Model 2	7.10	4	.96	.86	.05	5.98	NA	NA	
Model 3	3.58	3	.99	.97	.03	4.55*	NA	NA	-2.53*

** $p < .01$, * $p < .05$. ^a Test of mediation from men's TAS to men's BDI mediated by women's DAS. ^b Test of mediation from men's TAS to women's BDI mediated by women's DAS. NA = not applicable because model did not meet earlier criteria for mediation. Note. CFI and TLI scores of 1.0 indicate the chi-square value is smaller than the degrees of freedom, rather than a "perfect" model fit. In these cases, more attention should be paid to the other fit estimates provided.

Table 11

Men's Daily Diary Mediation Results – Hypothesis 2b

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>Auto r</i>
<i>Step 1: Emotional abilities predicting Negative affect</i>				
TAS	.002	.001	2.48*	-.00
OAS	.001	.001	2.40*	-.01
EIS	-.046	.022	-2.15*	-.00
CEAS	.046	.020	2.30*	-.00
<i>Step 2: Emotional abilities predicting Relationship functioning</i>				
TAS-relationship satisfaction	-.045	.012	-3.70***	.15*
TAS-neg. partner behaviors	.005	.003	2.09*	.13*
TAS-intimacy	-.023	.009	-2.45*	.10
OAS-relationship satisfaction	-.049	.008	-5.93***	.14*
OAS-neg. partner behaviors	.009	.002	5.03***	.14*
OAS-intimacy	-.028	.007	-4.19***	.11
EIS-relationship satisfaction	1.64	.301	5.44***	.15*
EIS-neg. partner behaviors	-.206	.068	-3.05**	.13*
EIS-intimacy	.946	.238	3.98***	.10
CEAS-relationship satisfaction	.394	.317	1.24	.13*
CEAS-neg. partner behaviors	-.010	.066	-0.15	.12*
CEAS-intimacy	.049	.127	0.39	.14**

Step 3a: Relationship functioning predicting Negative affect

Relationship satisfaction	-.026	.003	-7.94***	-.00
Neg. partner behaviors	.121	.011	10.92***	.03
Intimacy	-.018	.005	-3.92***	.00

	<u>b</u>	<u>SE b</u>	<u>t</u>	<u>Auto r</u>	<u>Z</u>
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Step 3b: Emotional abilities & Relationship functioning predicting Negative Affect (NA)

<u>TAS-Rel. satisfaction – NA</u>				.01	3.42***
Rel. satisfaction - NA	-.025	.003	-.7.63***		
TAS -NA	.001	.001	1.12		
<u>TAS-Neg. partner behaviors-NA</u>				.02	1.65
Neg. partner behaviors-NA	.119	.011	10.67***		
TAS-NA	.001	.001	1.79		
<u>TAS-Intimacy-NA</u>				.00	2.08*
Intimacy-NA	-.018	.005	-3.81***		
TAS-NA	.002	.001	2.01*		
<u>OAS-Rel. satisfaction-NA</u>				.01	4.94***
Rel. satisfaction-NA	-.025	.003	-7.53***		
OAS- NA	.000	.001	.37		
<u>OAS-Neg. partner behavior-NA</u>				.02	4.16***
Neg. partner behaviors-NA	.120	.011	10.65***		
OAS- NA	.000	.001	.63		
<u>OAS-Intimacy-NA</u>				.00	2.50*
Intimacy-NA	-.016	.005	-3.50***		
OAS- NA	.001	.001	1.63		

<u>EIS-rel. satisfaction-NA</u>				.01	-4.61***
Rel. satisfaction-NA	-.026	.003	-7.65***		
EIS-NA	-.004	.021	-.18		
<u>EIS-neg. partner behaviors-NA</u>				.02	-2.92**
Neg. partner behaviors-NA	.119	.011	10.65***		
EIS-NA	-.022	.020	-1.06		
<u>EIS-Intimacy-NA</u>				.00	-2.67**
Intimacy-NA	-.018	.005	-3.73***		
EIS-NA	-.029	.021	-1.38		

Table 12

Women's Daily Diary Mediation Results – Hypothesis 2b

	<i>b</i>	<i>SE b</i>	<i>t</i>	<i>Auto r</i>
<i>Step 1: Emotional abilities predicting Negative affect</i>				
TAS	.002	.001	2.31*	.11
OAS	.003	.001	4.82*	.10
EIS	-.054	.024	-2.27*	.10
CEAS	.026	.021	1.23	.10
<i>Step 2: Emotional abilities predicting Relationship functioning</i>				
TAS-relationship satisfaction	-.033	.014	-2.38*	.16**
TAS-neg. partner behaviors	.004	.003	1.34	.10
TAS-intimacy	-.025	.011	-2.21*	.19***
OAS-relationship satisfaction	-.041	.007	-5.53***	.16**
OAS-neg. partner behaviors	.008	.002	4.86***	.10
OAS-intimacy	-.032	.006	-5.28***	.20***
EIS-relationship satisfaction	1.014	.339	2.99**	.16**
EIS-neg. partner behaviors	-.013	.078	-.17	.10
EIS-intimacy	1.047	.267	3.92***	.19***
CEAS-relationship satisfaction	-.005	.306	-.02	.17**
CEAS-neg. partner behaviors	.046	.067	.68	.09
CEAS-intimacy	.048	.134	.36	.08

Step 3a: Relationship functioning predicting Negative affect

Relationship satisfaction	-.036	.003	-12.24***	.11*
Neg. partner behaviors	.140	.010	13.87***	.11*
Intimacy	-.024	.004	-5.53***	.12*

	<u>b</u>	<u>SE b</u>	<u>t</u>	<u>Auto r</u>	<u>Z</u>
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Step 3b: Emotional abilities & Relationship functioning predicting Negative Affect (NA)

<u>TAS-Rel. satisfaction – NA</u>				.11*	2.31*
Rel. satisfaction - NA	-.035	.003	-.12.05***		
TAS -NA	.001	.001	1.19		
<u>TAS-Intimacy-NA</u>				.12*	2.11*
Intimacy-NA	-.023	.004	-5.31***		
TAS-NA	.002	.001	1.72		
<u>OAS-Rel. satisfaction-NA</u>				.10	5.23***
Rel. satisfaction-NA	-.035	.003	-11.64***		
OAS- NA	.001	.001	2.12*		
<u>OAS-Neg. partner behavior-NA</u>				.02	3.83***
Neg. partner behaviors-NA	.134	.010	13.14***		
OAS- NA	.001	.000	3.24**		
<u>OAS-Intimacy-NA</u>				.11*	3.85***
Intimacy-NA	-.022	.004	-4.61***		
OAS- NA	.002	.001	3.41***		
<u>EIS-rel. satisfaction-NA</u>				.11*	-4.18***
Rel. satisfaction-NA	-.035	.003	-12.02***		
EIS-NA	-.018	.022	-.82		

<u>EIS-Intimacy-NA</u>				.12*	-3.24**
Intimacy-NA	-.023	.004	-5.19***		
EIS-NA	-.030	.025	-1.24		

Table 13

Partner Effects- Men's Daily Diary Mediation Results –Hypothesis 2b

	<u>b</u>	<u>SE b</u>	<u>t</u>	<u>Auto r</u>	<u>Z</u>
<i>Step 1: Wives' Emotional abilities predicting Men's NA</i>					
Women's OAS – Men's NA	.002	.001	3.64***	-.005	
<i>Step 2: Women's Emotional abilities predicting Men's Relationship functioning</i>					
Women's OAS – Men's rel. satisfaction	-.043	.007	-6.15***	.152**	
Women's OAS – Men's intimacy	-.030	.006	-5.16***	.106	
<i>Step 3b: Women's Emotional abilities and Men's Rel. functioning predicting Men's NA</i>					
<u>Women's OAS-Men's rel. satisfaction-men's NA</u>				.007	4.87***
Women's OAS – Men's NA	.001	.001	1.77		
Men's rel. satisfaction – Men's NA	-.024	.003	-6.86***		
<u>Women's OAS-Men's intimacy-men's NA</u>				-.002	NA
Women's OAS – Men's NA	.002	.001	2.80**		
Men's intimacy – Men's NA	-.014	.005	0.58		

Table 14

Partner Effects - Women's Daily Diary Mediation Results –Hypothesis 2b

	<u>b</u>	<u>SE b</u>	<u>t</u>	<u>Auto r</u>	<u>Z</u>
<i>Step 1: Men's Emotional abilities predicting Women's NA</i>					
Men's EIS – Women's NA	-.053	.022	-2.40*	.102	
<i>Step 2: Men's Emotional abilities predicting Women's Relationship functioning</i>					
Men's EIS – Women's rel. satisfaction	.835	.315	2.65**	.157**	
Men's EIS – Women's intimacy	.503	.249	2.02*	.197***	
<i>Step 3b: Men's Emotional abilities and Women's Rel. functioning predicting Women's NA</i>					
<u>Men's EIS-Women's rel. satisfaction-Women's NA</u>				.104	2.58**
Men's EIS – Women's NA	-.024	.021	-1.12		
Men's rel. satisfaction – Women's NA	-.035	.003	-12.00***		
<u>Men's EIS-Women's intimacy-Women's NA</u>				.115*	1.93
Men's EIS – Men's NA	-.042	.022	-1.88		
Men's intimacy – Men's NA	-.023	.004	-5.07***		

Table 15

Summary of Mediation Results across Methods and Measures

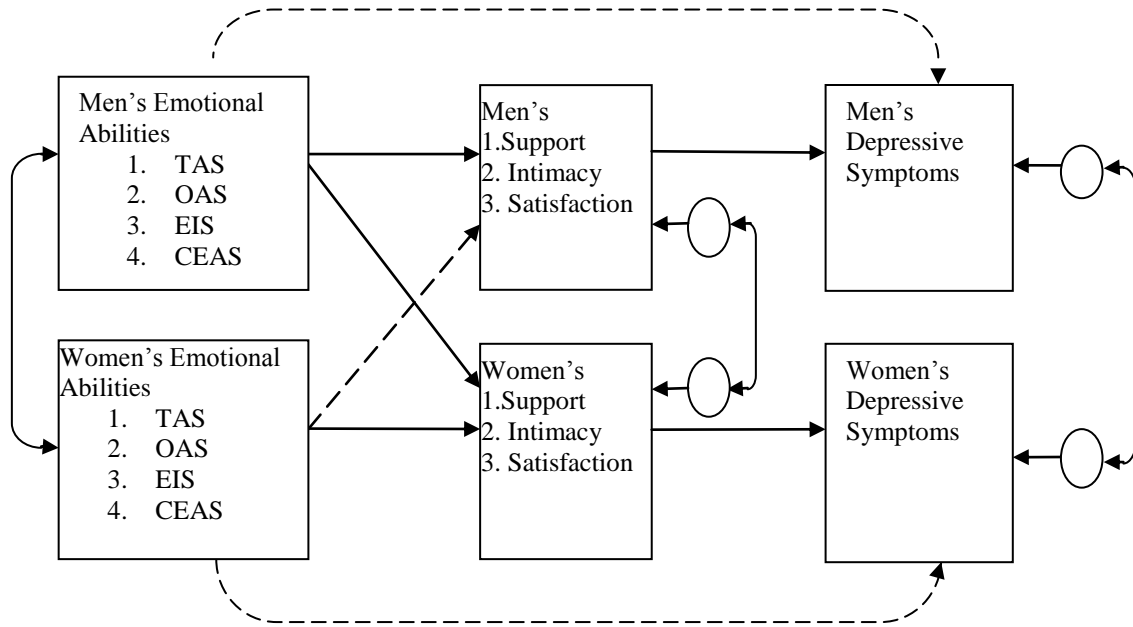
Emotional Abilities Variables	Relationship Functioning Time 1 Mediator Variables	Relationship Functioning Daily Mediator Variables
Men's EIS	Men's social support Men's intimacy Men's rel. satisfaction * NA	NA Men's intimacy Men's rel. satisfaction Men's neg. partner behaviors
Women's EIS	Women's social support Women's intimacy ^d Women's rel. satisfaction NA	NA Women's intimacy Women's rel. satisfaction Women's neg. partner behaviors
Men's OAS	Men's social support ^d Men's intimacy Men's rel. satisfaction NA	NA Men's intimacy Men's rel. satisfaction Men's neg. partner behaviors
Women's OAS	Women's social support ^d Women's intimacy ^d Women's rel. satisfaction ^d NA	NA Women's intimacy ^d Women's rel. satisfaction ^d Women's neg. partner behaviors ^d
Men's TAS	Men's social support ^d Men's intimacy ^d Men's rel. satisfaction ^d NA	NA Men's intimacy ^d Men's rel. satisfaction Men's neg. partner behaviors*
Women's TAS	Women's social support ^d Women's intimacy* ^d Women's rel. satisfaction* ^d NA	NA Women's intimacy Women's rel. satisfaction Women's neg. partner behaviors
Men's CEAS	Men's social support Men's intimacy ^d Men's rel. satisfaction NA	NA Men's intimacy Men's rel. satisfaction Men's neg. partner behaviors
Women's CEAS	Women's social support Women's intimacy Women's rel. satisfaction NA	NA Women's intimacy Women's rel. satisfaction Women's neg. partner behaviors

All time 1 results in the second column represent mediation between emotional abilities measures and depressive symptoms. All daily diary results in the third column represent mediation between emotional abilities and daily negative mood. Boldface type = significant mediation. ^d = significant direct effect from emotional abilities measure to mood measure. * = trend towards mediation. NA = equivalent mediation tests not available.

Appendix B - Figures

Figure 1

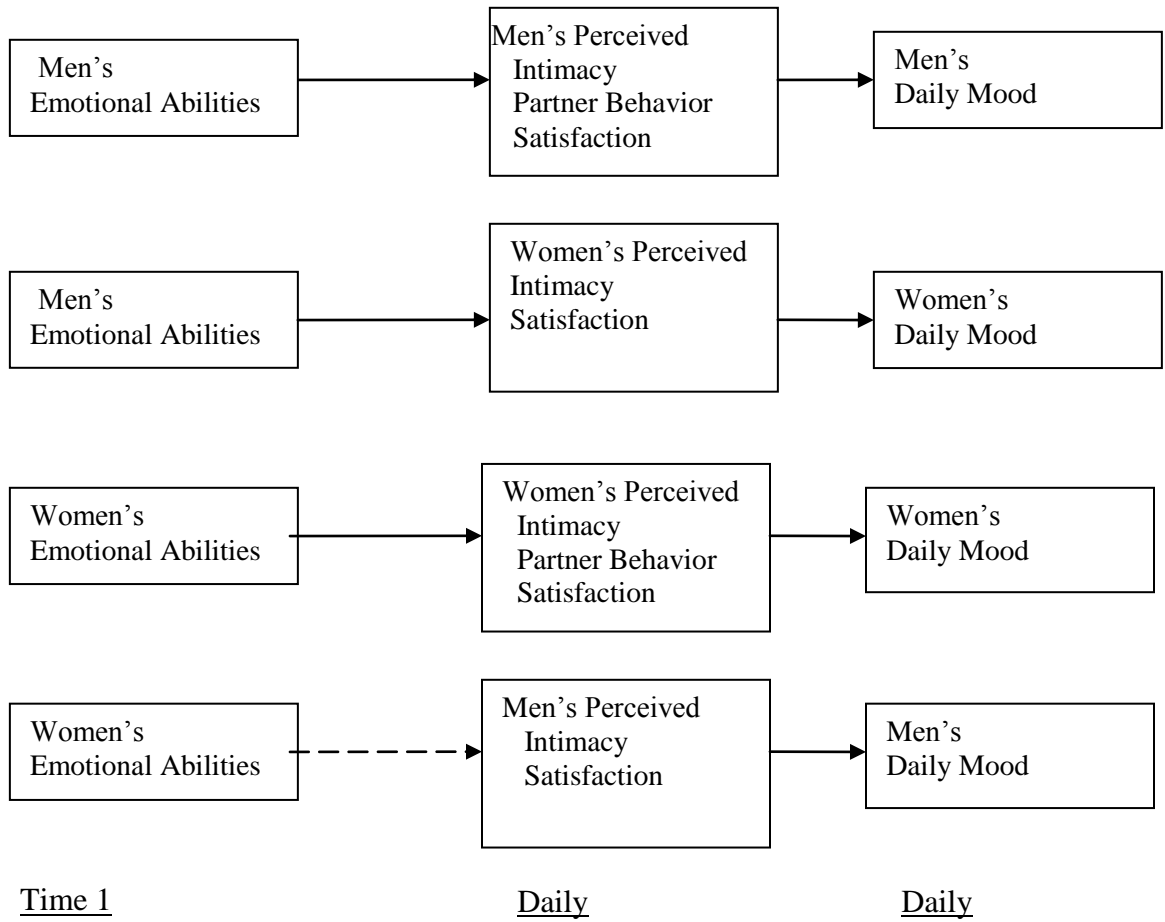
Hypothesized Model of Emotional Abilities, Relationship Functioning, and Depressive Symptoms



Note. Dotted lines represents hypothesized non-significant paths. Figure reflects Hypothesis 2a.

Figure 2

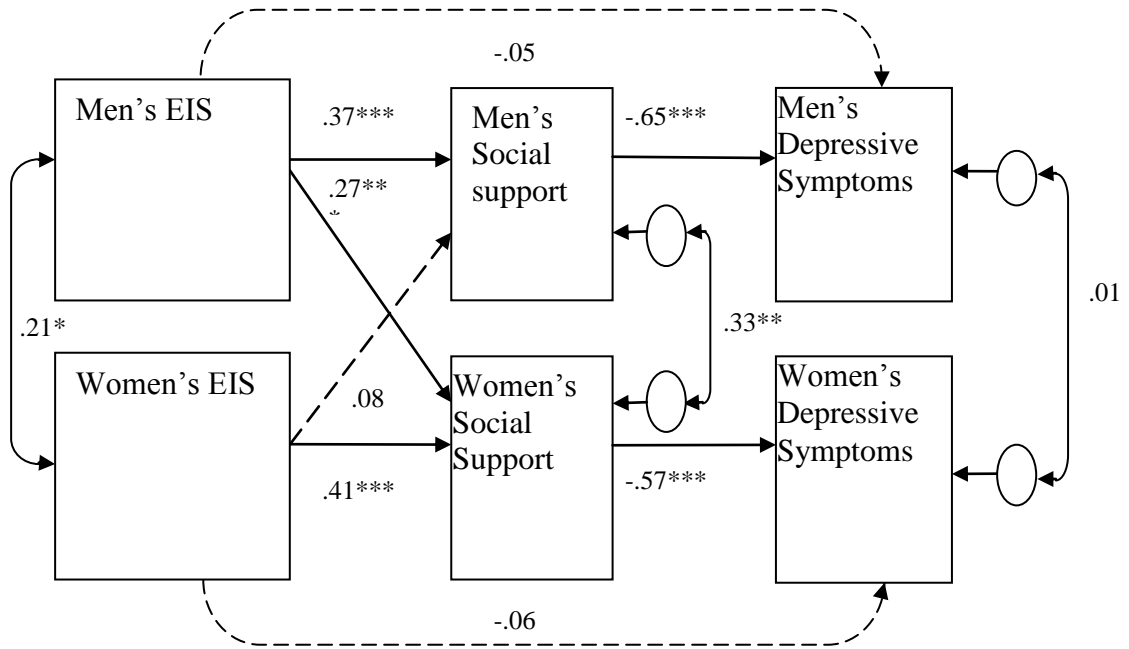
Hypothesized Model of Emotional Abilities, Daily Relationship Functioning, and Daily Mood



Note. Dotted line represents hypothesized non-significant path. Figure reflects Hypothesis 2b.

Figure 3

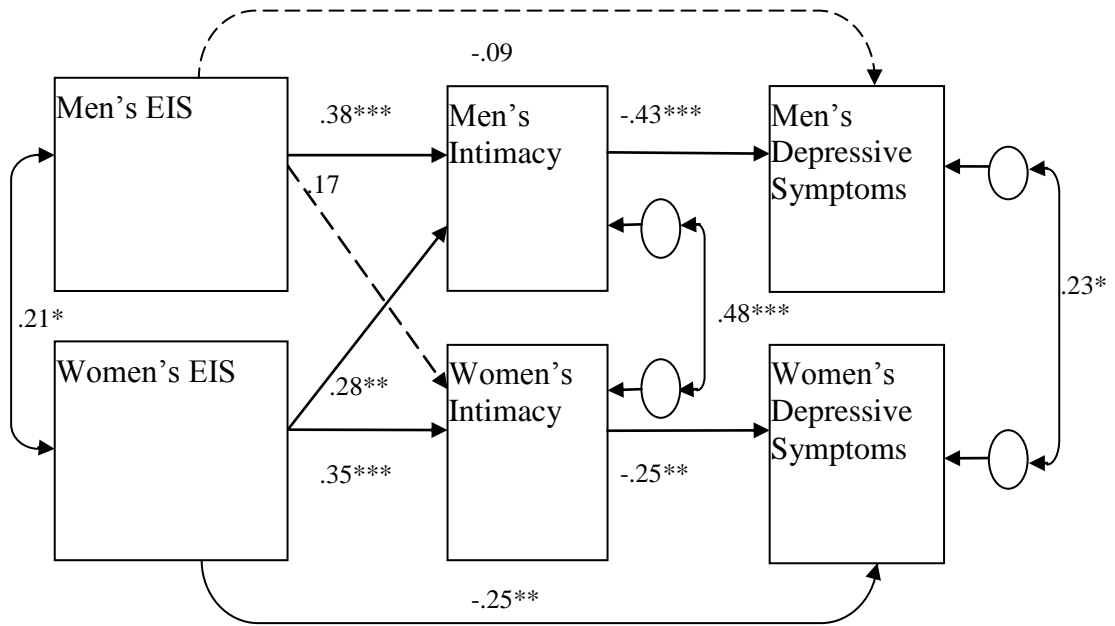
Model of Emotional Intelligence (EIS), Social support, and Depressive symptoms



Standardized parameter estimates for Model 2. $^{***} p < .001$, $^* p < .05$.

Figure 4

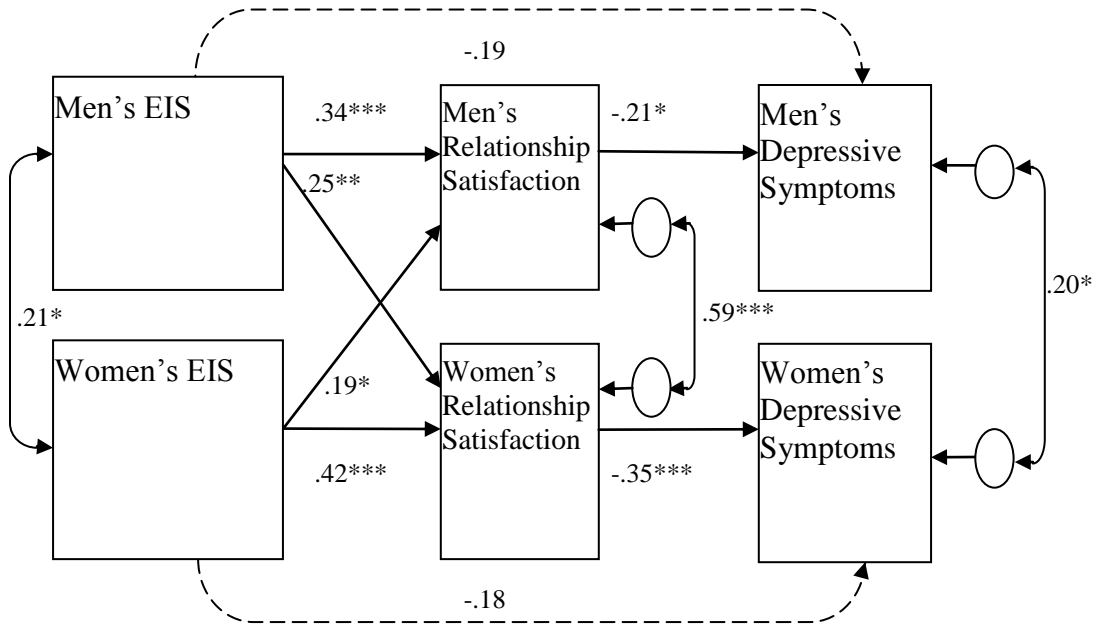
Model of Emotional Intelligence (EIS), Intimacy, and Depressive Symptoms



Standardized parameter estimates for Model 2. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 5

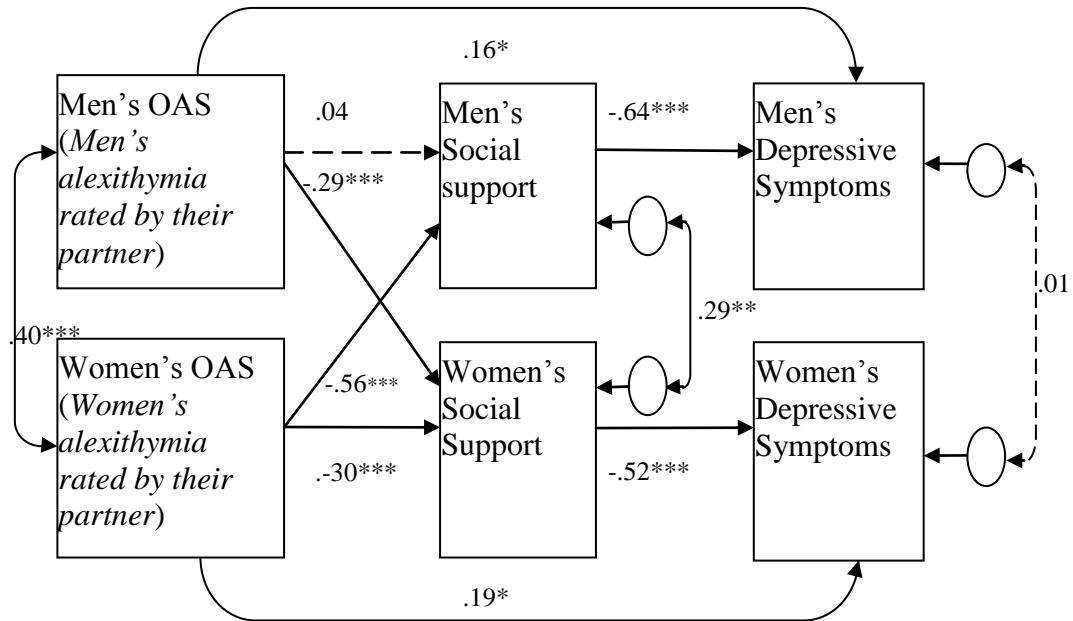
Model of Emotional Intelligence (EIS), Relationship Satisfaction, and Depressive Symptoms



Standardized parameter estimates for Model 2. $*** p < .001$, $**p < .01$, $*p < .05$.

Figure 6

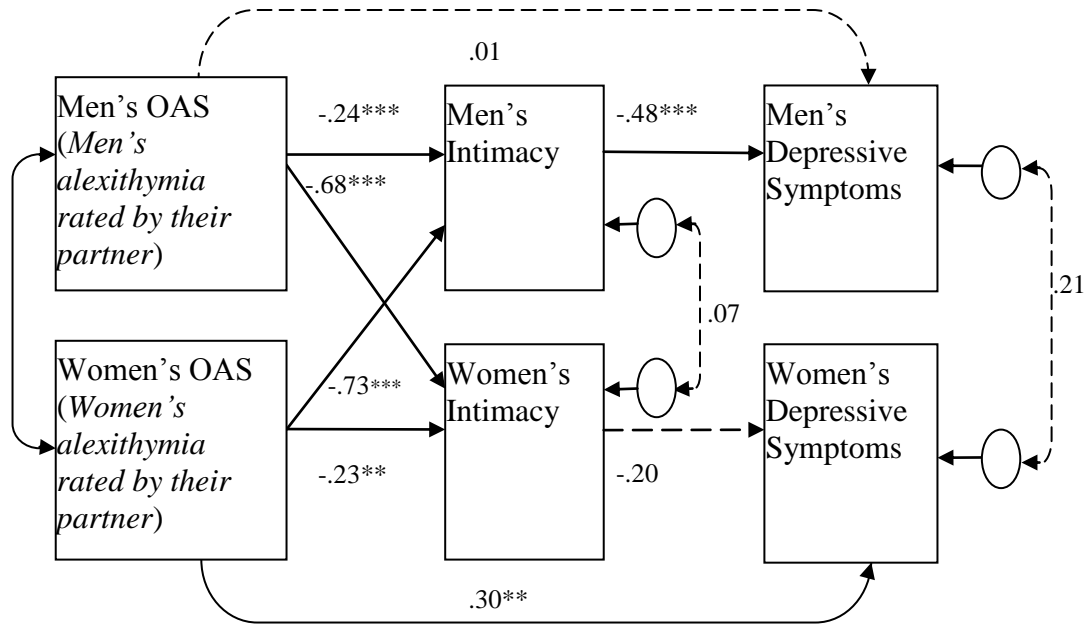
Model of Observer Rated Alexithymia (OAS), Social Support, and Depressive Symptoms



Standardized parameter estimates are for Model 2. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 7

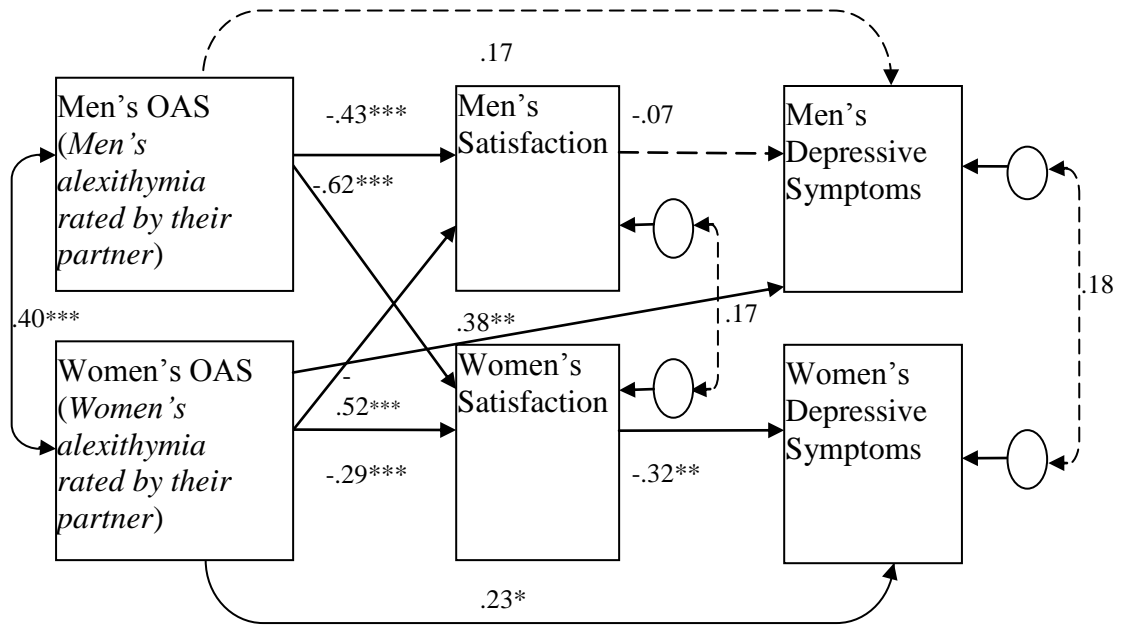
Model of Alexithymia (OAS), Intimacy, and Depressive Symptoms



Standardized parameter estimates are for Model 2. *** $p < .001$, ** $p < .01$.

Figure 8

Model of Alexithymia (OAS), Relationship Satisfaction, and Depressive Symptoms



Standardized parameter estimates are for Model 3. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 9

Model of Alexithymia (TAS), Social Support, and Depressive Symptoms

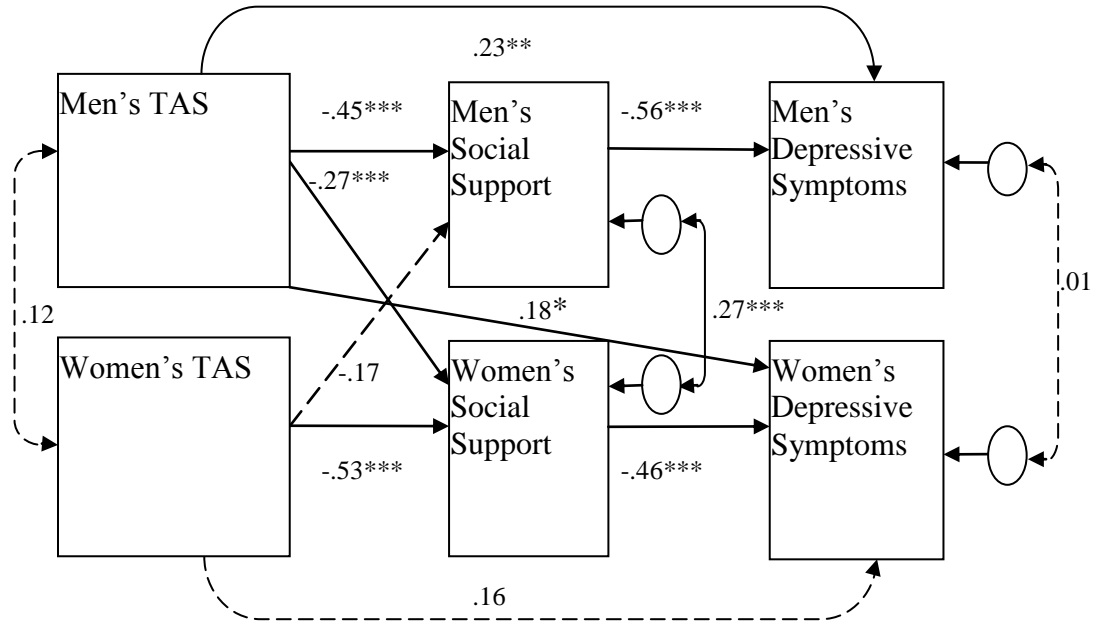


Figure 10

Model of Alexithymia (TAS), Intimacy, and Depressive Symptoms

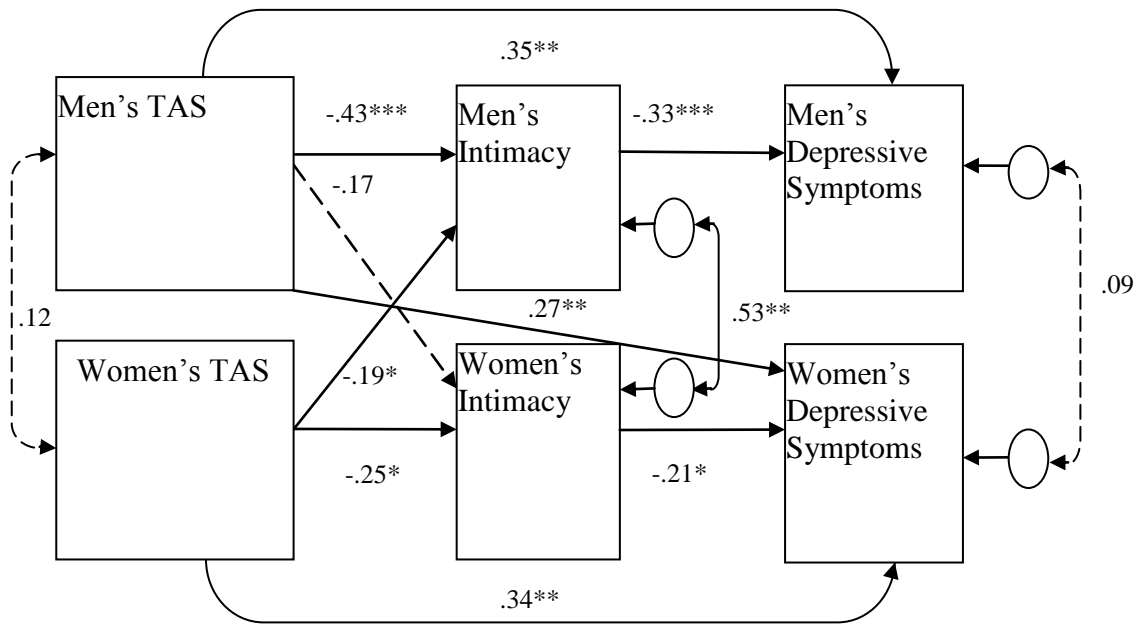
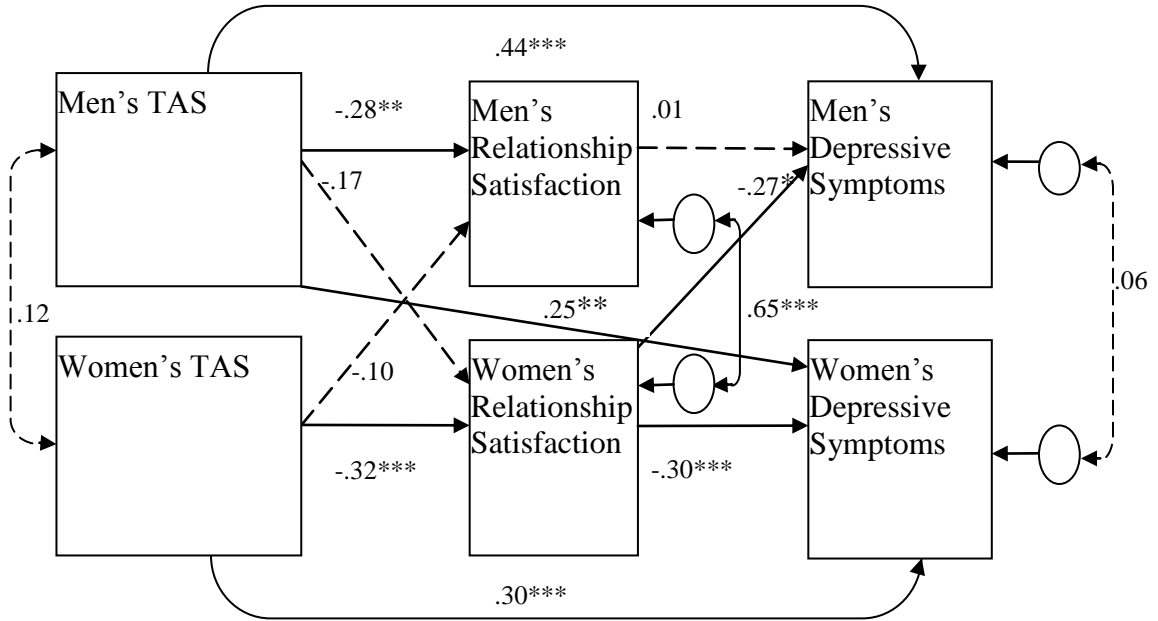


Figure 11

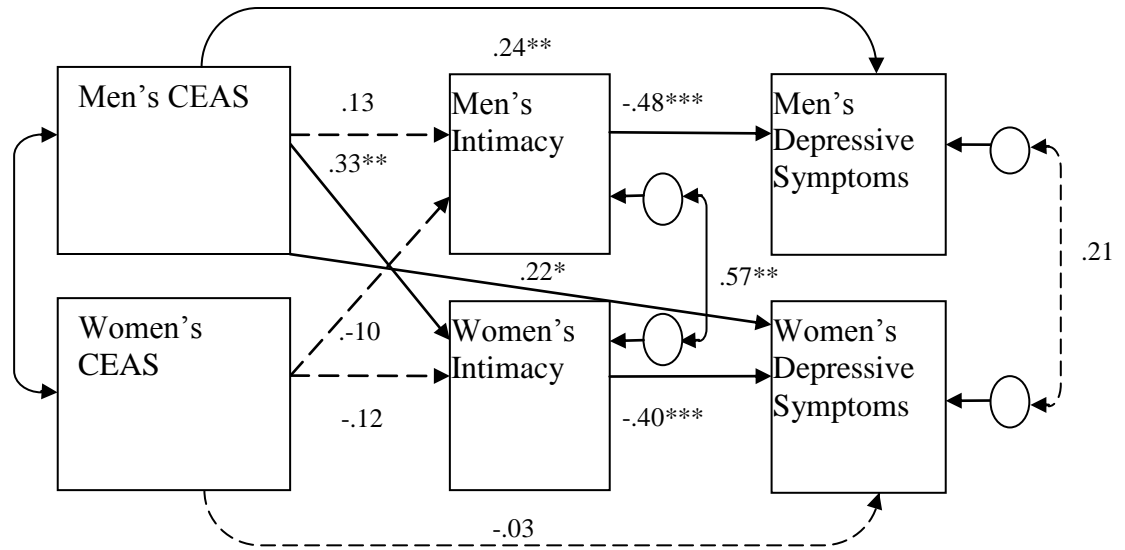
Model of Alexithymia (TAS), Relationship Satisfaction, and Depressive Symptoms



Standardized parameter estimates for Model 3. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 12

Model of Emotional Awareness (CEAS), Intimacy, and Depressive Symptoms



Standardized parameter estimates for Model 3. *** $p < .001$, ** $p < .01$, * $p < .05$.