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An Exploratory Investigation of Marital Functioning and Order of Spousal Onset in Couples Concordant for Psychopathology

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Abstract

Individuals with a psychiatric disorder are significantly more likely to have a spouse with a clinical diagnosis—marital concordance. We used a community sample of 304 couples concordant for either Major Depressive Disorder (MDD) or Substance Use Disorders (SUDs) to examine the relationship between marital functioning and gendered patterns of mental health diagnosis onset. For SUD concordance, couples in which wives onset before husbands—in spite of typical later onset for males—reported lower levels of marital satisfaction compared to couples in which the husband onset first. For MDD concordance, couples in which husbands onset with depression before wives—in spite of typical later onset for males—reported lower levels of marital satisfaction. These results suggest that for couples concordant for mental diagnoses, it is most problematic for marital functioning for one partner to have an atypically early onset. Implications for treatment targets in marital therapy are discussed.

Keywords

marital concordance; assortative mating; marital satisfaction; contagion of symptoms; spousal similarity

Individuals diagnosed with any psychiatric disorder are significantly more likely to have a spouse who also has a clinical diagnosis (Galbaud du Fort, Bland, Newman, & Boothroyd, 1998; Hammen & Brennan, 2002; Maes et al., 1998; McLeod, 1995; Merikangas, 1982; Merikangas & Spiker, 1982). This phenomenon of marital concordance for mental health

diagnoses has been confirmed across a variety of populations, including psychiatric inpatients (Merikangas & Spiker, 1982), older adults (Eagles, Walker, Blackwood, Beattie, & Restall, 1987), and general community samples (Galbaud du Fort et al., 1998; Maes, et al., 1998). There are high rates of concordance for general psychopathology and also for specific diagnoses, including major depressive disorder (MDD) and substance use disorders (SUDs) (Dubuis-Stadelmann, Fenton, Ferrero, & Preisig, 2001; Eagles, Walker, Blackwood, Beattie, & Restall, 1987; Galbaud du Fort, Bland, Newman, & Boothroyd, 1998; Hammen & Brennan, 2002; Mathews & Reus, 2001; McLeod, 1995; Merikangas, Weissman, Prusoff, & John, 1988). Marital concordance for depression and SUDs is associated with greater persistence of illness and poorer overall functioning for both partners (Grant et al., 2007; Low, Cui, & Merikangas, 2007; Merikangas, Bromet, & Spiker, 1983).

Mental health diagnoses, including both MDD and SUDs, are a robust predictor of problematic marital functioning (Whisman, 2007). Dunn, Jacob, Hummon, and Seilhammer (1987), using a prospective design, found an inverse relation between one spouse's alcohol consumption and the other spouse's marital satisfaction. Marshall (2003) reviewed 60 studies testing the relationship between alcohol use and marital functioning (cross-sectional and prospective) and concluded that alcohol use is associated with higher levels of marital dissatisfaction, negative marital interaction patterns, and violence in the relationship.

Similarly, spousal depression is a reliable and robust predictor of marital dissatisfaction (Beach & O'Leary, 1993; Beach, Smith, & Fincham, 1994; Hinchliffe, Hooper, Roberts, & Vaughan, 1978; Whisman, Uebelacker, Tolejko, Chatav, & McKelvie, 2006). The relationship between depression and marital distress is most likely bidirectional and influenced by characteristics of the depressive disorder, including its course, which most commonly is episodic and recurrent as well as gender differences in its expression (Coyne & Benazon, 2001). In support of a bidirectional relationship, studies have documented prospective relations between marital discord and subsequent increases in depressive symptoms (Beach, Katz, Kim, & Brody, 2003; Kendler, 1995) as well as prospective relations between depressive symptoms and subsequent increases in marital discord (Davila, Bradbury, Cohan, & Tochluk, 1997). A meta-analytic review found that marital satisfaction accounted for significant portions of the variance in depressive symptoms for both wives (18%) and husbands (14%) (Whisman, 2001). Some studies find gender differences in the directionality of the effect (Fincham, Beach, Harold, & Osborne, 1997) while others do not (Beach et al., 2003). Coyne and Benazon (2001) suggest that these inconsistencies are likely due to the complexities of major depression, including that most episodes of depression measured by researchers will be recurrences, and symptoms can be expressions of major depressive episodes or residual symptoms from a prior episode. Thus, while the literature is not clear with regards to the directionality of the association between depression and marital satisfaction (and less research still has been conducted on SUDs), it is clear that the association is robust.

Given that mental health diagnoses in one partner are associated with decreased marital satisfaction, concordance for mental health diagnoses may function as a particularly pernicious predictor of decreased marital satisfaction. Data suggest that this may be the case: couples concordant for either psychological distress (Butterworth & Rodgers, 2008) or presence of a mood disorder (Merikangas, Bromet, & Spiker, 1983) are at greater risk for divorce compared to couples with only one partner who is distressed/diagnosed with a mood disorder. Studies on SUDs have not directly compared outcomes for couples with one versus two partners with SUDs. Other studies have found that assortative relating on personality characteristics (Luo & Klohnen, 2005) is related to higher marital satisfaction, but that assortative relating on attitudes (Luo & Klohnen, 2005), values, emotional expression, and attachment (Watson et al., 2004) is not related to marital satisfaction. Concordance is also

clearly linked to poorer mental health outcomes for offspring (Merikangas et al., 1988); however, relatively little research has examined the relation between concordance for mental health diagnoses and marital functioning.

The current study integrates research on the link between spousal mental health and problematic marital functioning with research on spousal concordance for mental health diagnoses—more specifically, concordance for Major Depressive Disorder (MDD) and Substance Use Disorders (SUDs). We do so by examining a specific aspect of concordance that may function as an indicator of the presence of particularly deleterious interpersonal processes—the gender of the spouse who onsets first. We used a community sample to explore the relationship between marital functioning and gendered patterns of onset for Major Depressive Disorder (MDD) and Substance Use Disorders (SUDs) in couples concordant for these diagnoses. Our couples are a subset of parents of the probands in the Oregon Adolescent Depression Project (OADP; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993). We compared couples in which the husband onset first (i.e., husband-onset couples) to couples in which the wife onset first (i.e., wife-onset couples).

Why might the gender of the spouse who onsets first with a mental health diagnosis matter with regard to marital functioning? Epidemiological studies have identified reliable gender differences in the prevalence and age of onset for both MDD and SUDs. Among females, MDD is both more prevalent and associated with an earlier age of onset (Kessler et al., 2005; Kessler, Chiu, Demler, Merikangas, & Walters, 2005). In contrast, among males, SUDs are more common and associated with an earlier age of onset (Brady & Randall, 1999; Compton, Thomas, Stinson, & Grant, 2007; Hasin, Stinson, Ogburn, & Grant, 2007; Zilberman, Tavares, Blume, & el-Guebaly, 2003).

We hypothesized that husbands who onset with MDD *before* the wife in couples concordant with MDD—in spite of typical later onset for males—may experience a particularly severe or persistent form of depression that is highly disruptive to the relationship. In support of this hypothesis, an earlier onset of MDD has been linked to a more severe course of illness (Coryell et al., 2009), which in turn, is linked to marital distress (Beach, 2003). Conversely, we hypothesized that wives who onset with an SUD *before* the husband in couples concordant with SUD's—in spite of typical later onset for females—may experience a particularly severe and persistent SUD that is highly disruptive to the relationship. Research has documented that a subtype of substance use disorder marked by greater severity of substance use and comorbidity with antisocial traits among women (and men) is associated with earlier onset of alcohol problems (Magnusson, Goransson, & Heilig, 2010). Further, the constellation of factors found among those with early onset—severe use and antisocial traits—are associated with the presence of negative marital behaviors as well as intimate partner violence (Leonard & Eiden, 2007). Thus, for both MDD and SUDs, greater severity of disorders coupled with the additional stress of a partner's disorder may lead to particularly severe problems in the marriage. Given that the relationship between mental health and marital functioning is likely transactional (Coyne & Benazon, 2001), we conceptualize gendered order of onset as a proxy variable with potential clinical utility—in other words, a relatively easily assessed indicator of a set of more complex relational processes that may negatively impact marital functioning.

Further, we propose that the form of relationship damage that may result from these particularly deleterious patterns of marital concordance may differ for MDD and SUDs. Research has demonstrated that marital distress is a multidimensional construct, with two higher order constructs of conflict and distance (Herrington et al., 2008). We propose that MDD will be associated with distance, while SUDs will be associated with conflict. Research on interpersonal response styles in the context of marital conflict suggests that men

may be more likely to withdraw from the relationship as a means of coping with conflict or dysphoric mood (Christensen & Heavey, 1990; Windle & Smith, 2009). Thus, we propose that the form of the relationship damage for MDD concordant couples in which the husband onsets first will involve distance between spouses due to withdrawal by husbands. Hereafter, we refer to this form of problematic marital functioning as *relational distance*. In contrast, studies indicate that spouses with SUDs are perceived by their partners as aggressive and less loving (Neeliyara, Nagalakshmi, & Ray, 1989). Substance use disorders increase risk for violent and aggressive behavior—including domestic violence—fatal driving accidents, financial irresponsibility, criminal behaviors, and aggressive behavior (Brook, Pahl, & Rubenstone, 2010). These data suggest that the form of relationship damage for SUD concordant couples is likely to differ from damage sustained due to depression (i.e., relational distance). In contrast to MDD-concordant couples, we assert that SUD concordant couples likely suffer relationship damage in the form of arguments, aggression, and discord. Hereafter, we refer to this form of problematic marital functioning as *relational turmoil*.

More specifically, we predicted that for SUD concordance, spouses in wife-onset couples (i.e., both husbands and wives) would report greater relational turmoil in the marriage compared to husband-onset couples. For MDD concordance, we predicted that spouses in husband-onset couples (i.e., both husbands and wives) would report greater relational distance compared to wife-onset couples. Given that the OADP was not designed with these questions in mind, our measures of relational distance and turmoil are imperfect and our sample size of concordant couples is small. Thus, we frame these data as an initial exploration of a clinically important but heretofore uninvestigated domain of marital functioning that may create a stepping stone for future investigations.

Method

Participants and Procedures

Participants were 304 married couples (304 husbands and 304 wives) in the OADP (for additional details, see Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993). Probands (our participants' children) were originally randomly selected from nine senior high schools in western Oregon. A total of 1,709 adolescents (ages 14–18) completed the initial assessment (time 1) between 1987 and 1989. Approximately 1 year later (time 2), 1,507 participants (88.2%) participated in a re-assessment. As probands reached their 24th birthday, a subset were interviewed at Time 3; depressed probands (and their parents) were oversampled. The subset consisted of participants with a history of major depressive disorder at time 2 (N=360), those with a history of a non-mood disorder at time 2 (N=284), and a subset of those with no history of a mental disorder at time 2 (N=457); all participants with nonwhite ethnicity were invited to participate in the time 3 assessment.

Lifetime psychiatric information was obtained participants who completed the time 3 assessment. To supplement direct interviews, informant psychiatric data were collected from first degree relatives with the goal of collecting diagnostic data from two sources for each participants (either self-report via interview and informant interview, or two informant interviews). Direct clinical interviews were completed by 63% of relatives; the informant for each participants was most often his/her spouse. Only data on parental psychopathology were used in the present report. Diagnostic data and the date of marriage were available for 640 wives and 397 husbands, yielding 356 potential couples. From this sample, couples were selected for the present study if they were married to each other at the time 3 assessment and if that marriage was their first marriage, yielding 304 couples. These 304 couples did not differ significantly from the larger sample of 356 couples on proportions with MDD or SUDs. All analyses were conducted with SPSS version 12.0, with the General

Linear Model module used for primary analyses. Missing data were handled by mean imputation.

Variables in the current study

DSM-IV Best-Estimate diagnoses—Parents of the probands were interviewed with the Structured Clinical Interview for DSM-III-R, Nonpatient version (SCID-NP; Spitzer, Williams, Gibbon, & First, 1992), modified for collection of DSM-IV criteria, which included assessment of the age of onset for all diagnoses. Inter-rater reliability on a randomly selected sample of SCIDs was high (kappa of .94 for MDD). Family history data (i.e., diagnostic data on parents gathered from informants) were collected with the revised Family Informant Schedule and Criteria (Mannuzza & Fyer, 1990), which is based on the Family History Research Diagnostic Criteria (Endicott, Andreasen, & Spitzer, 1978), modified for DSM-IV criteria. Inter-rater reliability was similarly high for these data (kappa of .90 for MDD). Using all available data, the project's four senior diagnosticians (Paul Rohde, Daniel N. Klein, P.M.L., and Nicholas Allen), who were blind to probands diagnoses, derived best-estimate diagnoses (Leckman, Sholomskas, Thompson, Belanger, & Weissman, 1982) for the parents of probands. Timing of concordance was determined using dates for onset and offset of MDD and SUDs.

Marital Functioning—The Dyadic Adjustment Scale (DAS; Spanier, 1976) is a 32-item self-report measure of the quality of marital relationships in which higher scores indicate greater quality. Spanier (1976) reports reliability data for the full scale (Cronbach's $\alpha = .96$). Construct validity of the scale is supported by data showing that the DAS discriminates maritally-distressed spouses from non-distressed spouses (Eddy, Heyman, & Weiss, 1991). The scale can be divided into four subscales—Consensus, Satisfaction, Cohesion, and Affectional Expression. However, research has failed to replicate this factor structure, thus the overall score is typically used (Herrington et al., 2008). Because neither the full scale, nor the subscales were able to adequately assess the constructs specified in the hypotheses (relational distance and relational turmoil), two subset of items were chosen from the larger pool of items that load onto the Satisfaction subscale in order to create two sub-scales. The first subset of items (DAS 16, "consider divorce"; DAS 19, "how often confide"; DAS 23, "kiss"; DAS 31, "happiness," all items coded such that higher numbers indicate more positive marital functioning) were selected to measure the construct of *relational distance* (i.e., the absence of positive interactions and absence of closeness). These items are similar in content to those on the "Disaffection/Emotional Distance" subscale of the Marital Satisfaction Inventory (Herrington et al., 2008). Scores for this subscale were computed using both the wife's and husband's self-report. Reliability was adequate for both wife (Cronbach's $\alpha = .76$) and husband self-report (Cronbach's $\alpha = .71$). The second subset of items (DAS 21, "how often quarrel"; DAS 22, "get on each other's nerves"; DAS 31, "happiness," all items coded such that higher numbers indicate more positive marital functioning) were selected to measure the construct of relational turmoil (i.e., the presence of problems and conflict). These items are similar in content to those on the "Disharmony/Overt Conflict" subscale of the Marital Satisfaction Inventory (Herrington, et al., 2008). Reliability was adequate for both wife (Cronbach's $\alpha = .73$) and husband self-report (Cronbach's $\alpha = .81$).¹

¹DAS item 31 is included in both subscales. The analyses presented below were also run with DAS item 31 excluded from both subscales. The same pattern of results was found when excluding item 31. Due to higher alpha reliability coefficients when including item 31 in the subscales, those results are reported below.

Results

Concordance for Substance Use Disorders and Major Depressive Disorder in Married Couples

A lifetime history of one or more DSM-IV Substance Use Disorders (SUDs) was present in 46 wives (15%) and 132 husbands (43%). The mean age at marriage for the wives was 20 years (range 16 to 24 years) and for husbands 22 years (range 17 to 26 years). The onset of an SUD occurred before marriage for 16 of the wives (35%), after marriage for 28 wives (61%), and the same month as marriage for 2 of the wives (4%). The onset of an SUD occurred before marriage for 73 of the husbands (55%), after marriage for 55 of the husbands (42%), and the same month as marriage for four of the husbands (3%). The concordance rate for SUDs was 10% (i.e., 31 concordant couples, 273 non-concordant). For the concordant couples, we determined the number of couples who were concordant for SUDs before marriage (i.e., both husband and wife experienced an SUD before marriage). Pre-marital concordance for SUDs occurred in 10 of the couples with lifetime concordance for SUDs (32%). In other words, 10 couples with lifetime concordance for an SUD had both partners onset for the disorder before marriage. Post-marital concordance for SUDs occurred in eight of the couples with lifetime concordance for SUDs (26%). In other words, eight couples had both partners onset for an SUD after marriage. For some couples ($n = 11$), one partner onset for an SUD before marriage and the other partner onset after marriage. Specifically, in two couples (6%), the wife onset with the SUD before marriage and the husband onset after marriage. In nine couples (29%), the husband onset with the SUD before marriage and the wife onset after marriage. In the remaining two couples (6%), one partner onset for an SUD the same month as the couple was married, thus making it impossible to ascertain whether the onset occurred before or after the couple was married as data were only available for the month and year of marriage.

A lifetime history of Major Depressive Disorder (MDD) was present in 80 women (26%) and 67 men (22%).² The onset of MDD occurred before marriage for 10 of the wives (12%) and after marriage for the other 70 wives (88%). The onset of MDD occurred before marriage for 12 of the husbands (18%) and after marriage for 54 of the husbands (82%). The concordance rate for MDD was 8% (i.e., 23 concordant couples, 281 non-concordant). We determined the number of couples who were concordant for MDD before marriage (i.e., both husband and wife experienced MDD before marriage). Pre-marital concordance for MDD did not occur in any of the couples with lifetime concordance for MDD. For 18 couples (78%), both partners experienced MDD after marriage. For two couples (9%), the wife onset before marriage and the husband after. For three couples (13%), the husband onset before marriage and the wife after.

Regarding marital functioning, husbands and wives reports' of relational turmoil were significantly correlated ($r=.49, p<.001$). Husbands and wives reports' of relational distance were also significantly correlated ($r=.57, p<.001$). The measures of relational turmoil and distance were significantly correlated for both husbands ($r=.84, p<.001$) and wives ($r=.88, p<.001$).

²These rates do not match the commonly found 2:1 gender ratio (females to males) for the prevalence of Major Depressive Disorder. As described in the Method section, during the wave of data collection in which data on parents were collected (the participants in the current report), depressed probands (and their parents) were oversampled. Given the finding that parental depression is a risk factor for childhood depression (Downey & Coyne, 1990), it is likely that this oversampling washed out gender differences. Given comorbidities between MDD and SUDs, this aspect of sampling likely also accounts for the high prevalence of SUDs in our sample as well.

Does the sex of the partner who onsets first predict marital functioning in couples concordant for Substance Use Disorders?

To examine our hypothesis that for SUD concordance, spouses in wife-onset couples (both husbands and wives) would report greater relational turmoil in the marriage compared to husband-onset couples, we first determined whether there was a pattern with regard to which partner onset with an SUD first (i.e., the husband or wife). For nine couples (31%), the wife onset with an SUD before the husband. In 18 couples (62%), the husband onset with an SUD before the wife. In two couples (7%), the husband and wife onset in the same month, making us unable to determine which partner onset first. Therefore, in the following analyses, those two couples were excluded. These results indicate that most SUD concordant couples followed the husband-onset then wife-onset pattern.

We hypothesized that for SUD concordance, spouses in wife-onset couples would report less positive marital functioning (i.e., relational turmoil) compared to husband-onset couples. Consistent with our hypothesis, husbands in wife-onset SUD couples reported lower levels of tranquility in the relationship (i.e., more turmoil; $M = 2.92$, $SD = .46$), compared to husbands in husband-onset SUD couples ($M = 3.77$, $SD = .66$; $F(1,22) = 10.56$, $p = .004$).³ The size of this effect ($d = 1.42$) is large according to Cohen (1988) and indicates more relational turmoil for SUD concordant couples in which the wife onset before the husband. Importantly, the same pattern was found for wives' reports: wives in couples in which the wife onset with an SUD before the husband reported lower levels of tranquility (i.e., relational turmoil; $M = 3.06$, $SD = .25$) compared to wives in couples in which the husband onset with an SUD before the wife ($M = 3.69$, $SD = .48$; $F(1,18) = 9.22$, $p = .007$).⁴ The size of this effect ($d = 1.47$) is large according to Cohen (1977).

Supporting the specificity of these results to turmoil vs. distance, comparable levels of relational distance were reported by both husbands in husband-onset couples and wife-onset SUD couples ($M_{\text{husband}} = 4.06$, $SD = .73$ and $M_{\text{wife}} = 3.56$, $SD = .51$; $F(1,22) = 3.00$, $p = .10$) and wives in husband-onset couples and wife-onset SUD couples ($M_{\text{husband}} = 4.04$, $SD = .56$ and $M_{\text{wife}} = 3.83$, $SD = .44$; $F(1,18) = .61$, $p = .44$). See Figure 1 for a graphical depiction of these results.

Does the sex of the partner who onsets first predict marital functioning in couples concordant for Major Depressive Disorder?

To examine our hypothesis that for MDD concordance, spouses in husband-onset couples (i.e., both husbands and wives) would report greater relational distance in the marriage compared to wife-onset couples, we first determined whether there was a pattern with regard to which partner onset with an MDD first (i.e., the husband or wife). For nine couples (39%), the wife onset with MDD before the husband. In the remaining 14 couples (61%), the husband onset with MDD before the wife. Thus, most MDD concordant couples followed the husband-onset then wife-onset pattern.

We hypothesized that for MDD concordance, spouses in husband-onset couples would report less positive marital functioning (i.e., relational distance) compared to wife-onset couples. Consistent with our hypothesis, husbands in husband-onset MDD couples reported lower relational closeness in the relationship (i.e., more relational distance; $M = 3.30$, $SD = .83$), compared to husbands in wife-onset MDD couples ($M = 4.04$, $SD = .62$; $F(1,19) = 4.24$, $p = .05$).⁵ The size of this effect ($d = 1.43$) is large according to Cohen (1988). Importantly,

³Due to missing data on the Dyadic Adjustment Scale (DAS) for some participants, only 24 couples were included in this analysis (of husbands' report). Husband-onset couples, $n = 16$; wife-onset couples, $n = 8$.

⁴Due to missing data on the DAS for some participants, only 20 couples were included in this analysis (of wives' report). Husband-onset couples, $n = 14$; wife-onset couples, $n = 6$.

this same result was found according to wives' reports. Wives in husband-onset MDD couples reported lower relational closeness ($M = 3.16$, $SD = .87$), compared to wives in couples in which the wife onset with MDD before the husband ($M = 4.00$, $SD = .74$; $F(1,16) = 4.10$, $p = .06$).⁶ The size of this effect ($d = 1.02$) is large according to Cohen (1977).

Supporting the specificity of these results to distance vs. turmoil, husbands in husband-onset and wife-onset MDD couples reported comparable levels of relational turmoil ($M_{\text{husband}} = 3.24$, $SD = .91$; $M_{\text{wife}} = 3.57$, $SD = .81$; $F(1,19) = .67$, $p = .42$). However, differences were found according to wives' reports: wives in husband-onset MDD couples ($M = 3.12$, $SD = .54$) reported lower levels of relational tranquility (i.e., more turmoil) compared to wives in wife-onset couples ($M = 3.67$, $SD = .51$; $F(1,16) = 4.52$, $p = .05$). See Figure 2 for a graphical depiction of these results.

Discussion

The present study used a community sample to examine the relationship between marital functioning and a potential indicator of the presence of particularly deleterious interpersonal processes resulting from concordance—gendered patterns of onset for Major Depressive Disorder (MDD) and Substance Use Disorders (SUDs)—in couples concordant for these mental health diagnoses. Our results indicate that the order in which spouses onset has implications for marital functioning and could be used to inform treatment targets in marital therapy. For SUD concordance, couples in which wives onset before husbands reported lower levels of marital satisfaction compared to couples in which the husband onset first, while for MDD concordance, couples in which husbands onset with depression before wives reported lower levels of marital satisfaction. Thus, our results suggest that for couples concordant for mental diagnoses, it is most problematic for marital functioning for one partner to have an atypically early onset. For MDD, females generally have an earlier age of onset, while for SUDs, males generally have an earlier onset. Thus, for MDD, it could be the case that for husbands to onset before wives at a young age (i.e., the mean age of marriage for men was 22 years) indicates greater severity of depression, thus leading to greater relationship damage. Similarly, for SUDs, it may be that wives in these couples experience a particularly severe form of SUD, given their earlier age of onset, that when coupled with the stress of a husband's SUD leads to particularly high levels of stress on the relationship. Our results suggest that characteristics of marital concordance, such as which partner onsets with the disorder first, have implications for marital functioning and may represent conditions under which concordance elevates risk for problematic marital functioning. Further research is needed to clarify specific mechanisms underlying these findings and to further characterize these higher risk couples, including any differences between the partner who onsets first compared to the partner who onsets second.

We also found that the type of marital dissatisfaction observed differed for MDD and SUDs. For SUD concordance, couples in which wives onset with SUDs before husbands reported greater relational turmoil compared to couples in which the husband onset first, while for MDD concordance, couples in which husbands onset with depression before wives reported greater relational distance compared to couples in which the wife onset first. Given that our measures of relational turmoil and relational distance were created for the present study and are in need of construct validation data, these latter findings should be considered preliminary and in need of replication. However, these two dimensions have been

⁵Due to missing data on the DAS for some participants, only 21 couples were included in this analysis (of husbands' report). Husband-onset couples, $n = 14$; wife-onset couples, $n = 7$.

⁶Due to missing data on the DAS for some participants, only 18 couples were included in this analysis (of wives' report). Husband-onset couples, $n = 11$; wife-onset couples, $n = 7$.

documented in the literature as important and reliable dimensions of marital functioning (Herrington et al., 2008). Thus, if replicated, these results suggest that matching of treatment targets (i.e., relational turmoil or distance) could promote increased response to marital therapy.

Our results generate hypotheses concerning interpersonal processes that underlie concordance for psychopathology in married couples. Two different potential processes – assortative relating and contagion – have been proposed to explain the phenomenon of concordance for disorders. Assortative relating involves choosing relational partners based upon similar characteristics (Thiessen & Gregg, 1980). In contrast, contagion theories propose that concordance can be explained by a process of direct transmission of one partner's symptoms or diagnosis to the other (Joiner & Katz, 1999). To date no conclusive evidence has been offered in support of one process over the other, and in fact, both processes likely contribute to spousal concordance. One possible explanation for our findings (not directly tested in the present study) is that contagion of mental health symptoms may occur by decreasing marital functioning, which may in turn activate the other partner's interpersonal diathesis for a disorder, and thus make a partner vulnerable to “catching” symptoms (not unlike catching a cold virus because of compromised immune functioning). Future research could directly test the hypothesis that for MDD, the mechanism for contagion may be increased relational distance, whereas for SUDs the mechanism may be increased relational turmoil. More specifically, it may be that husbands' depression creates distance in the relationship, thereby activating interpersonal diatheses for wives' depression, while wives' substance use creates turmoil in the relationship, thereby activating husbands' diatheses for substance use. However, our results could also be integrated within a model of assortative relating. None of the MDD concordant couples were concordant before marriage; however, it could be that MDD concordant couples assorted based on a temperamental or personality characteristic, such as the extraversion factor of the Big Five personality traits, which resulted in risk for both withdrawing from the relationship and depression. For SUD concordant couples, some were concordant before marriage, suggesting that individuals with substance abuse problems sought each other out; it is also possible that assortative relating on a trait such as impulsivity occurred that increased both relational turmoil and risk for SUDs. Further, given that we examined lifetime diagnoses, future research is needed to determine whether the duration of concurrent expression of MDD and SUDs in both partners is a key factor in determining outcomes; or, alternatively, whether occurrence of these diagnoses in both partners, regardless of the amount of temporal overlap, is a marker of increased risk for relational difficulties.

The present study has a number of limitations. Our definition of concordance was based on lifetime diagnoses. While this method has been used in prior studies (Galbaud du Fort, Bland, Newman, & Boothroyd, 1998), it likely increases heterogeneity among our couples, as some couples may spend more time simultaneously symptomatic than others and we were unable to assess this source of heterogeneity. The scales used to assess relational distance and turmoil were rationally derived subscales of the DAS. These were used because the established subscales of the DAS do not tap the two variables of interest in the current study (i.e., distance and turmoil). Further data are needed to support the construct validity of these scales. Additionally, due to low base rates of mental health disorders and marital concordance for these disorders, as well as missing data on the DAS, our sample was smaller than optimal, perhaps contributing to less than optimal power for traditional null hypothesis testing. In addition, probands with a history of depression were over-sampled in the third wave of data collection: the data in the present study were collected as a part of the third wave, thus the couples in our sample (the parents of the probands) may not be representative of couples in the general population with regards to the prevalence of depression/SUDs. Further, we studied heterosexual married couples, thus our results cannot

be generalized more broadly to cohabitating or same-sex couples. Finally, we were unable to directly test mechanisms for our results, both interpersonal (i.e., relational turmoil and distance as mechanisms of contagion leading to concordance) and intrapersonal (e.g., severity of disorder) given the study design. Future research could profitably address these limitations in order to further explicate factors that mitigate or aggravate consequences of marital concordance for psychopathology.

The present study illuminates the importance of considering features of marital concordance—including spousal order of onset—for psychopathology in the treatment of psychopathology in married couples, as well as for therapy primarily focused on the marital relationship. Our results suggest that different forms of concordance for psychopathology may have distinct consequences regarding marital functioning—both the gender of the spouse who onsets first and the type of spousal psychopathology should be considered in case formulations. Our results suggest that when clinicians encounter females with substance abuse concerns who also present with co-occurring partner/marital distress, a couples-based or family-systems based treatment approach could be considered. Behavioral Couples Therapy (BCT)(O’Farrell & Fals-Stewart, 2006) has been shown to be effective in the treatment of SUDs and also increases marital functioning and reduces both domestic violence and risk of divorce (O’Farrell & Fals-Stewart, 2000). The foundation of this treatment is a conceptualization of the relationship between substance abuse and marital discord as a reciprocal one that creates a “vicious cycle”(O’Farrell & Fals-Stewart, 2006). Our results, while not directly testing this model, suggest that intervening early with females with substance abuse concerns using BCT could halt a particularly pernicious cycle and prevent onset of SUDs in husbands. Similarly, BCT has been shown to be effective in the treatment of MDD that co-occurs with marital distress and produces increases in marital functioning as well as decreases in depression (for a review, see Gupta, Coyne, & Beach, 2003). Our results suggest that BCT may be especially useful for men presenting with depression and marital discord as a means of treating the depression, improving marital functioning, and preventing onset of MDD in wives. Our results also suggest that couples in which one partner had an atypically early onset of a mental disorder compared to his/her gender (i.e., MDD for men or SUD for women), could benefit from a preventive intervention even before marital distress occurs, as these couples may be at increased risk. One such preventive program, the Prevention and Relationship Enhancement Program (PREP) has been shown to have positive effects on marital functioning, including improved communication and reduced marital violence, up to five years after completion of this five session psychoeducational program (Markman, Renick, Floyd, Stanley, & Clements, 1993). These clinical suggestions are hypotheses generated from our findings and should be used as just that – hypotheses guiding the development of case formulations and treatment selection. Finally, research could investigate whether therapies for couples concordant for MDD that target relational distance and therapies for couples concordant for SUDs that target relational turmoil are more effective than therapies with other targets.

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Figure 1. Marital satisfaction involving (lack of) distance and (lack of) turmoil as reported by husbands and wives in couples concordant for substance use disorders

Note: SUD = substance use disorder; H-onset = Husband onset first with the SUD; W-onset = wife onset first with the SUD. Asterisks indicate statistically significant differences.

Figure 2. Marital satisfaction involving (lack of) distance and (lack of) turmoil as reported by husbands and wives in couples concordant for MDD

Note: MDD = substance use disorder; H-onset = Husband onset first with the MDD; W-onset = wife onset first with the MDD. Asterisks indicate statistically significant differences.