



# Sharing the Blues: Longitudinal Influences of Depression within Couples

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## Abstract

Although mental health is a major factor in couple relations, little is known on how depression might be transmitted within couples over long periods of time. This study sought to examine mutual influences of depressive symptoms across 23 years between women with clinical depression and their partners. A longitudinal, observational design employed a sample of 69 mixed-gender couples consisting of women with depression and their partners. Each partner's depressive symptoms were estimated using cross-lagged path models across 10- and 23-year follow-ups, adjusting for income, education, and changes in couple status. Among women with depression at baseline, more depressive symptoms at 10-year follow-up predicted more depressive symptoms in their partners 13 years later, and those partners' depressive symptoms at baseline predicted more depressive symptoms 23 years later among women with baseline depression. These findings demonstrate long-term associations between women with depression and their partners over time, highlighting the importance of accounting for couple context in depression assessment and treatment.

**Keywords** Depression · Couples · Gender · Cross-lagged models

Although depression is often characterized as an internalized disorder, social context can influence depression course (Bodenmann & Randall, 2013). Coyne's, (1976, 1999) interactional theory of depression posits that individuals with depression generate negative affect in others, a term referred to as "depression contagion" (Joiner & Katz, 1999). This generation can occur through expressions of guilt and assurance-seeking behaviors that elicit negative feelings of

interactive burden, emotional exhaustion, or hostility on the part of the partner. Such dynamics can lead to a persistent interpersonal cycle of depressive symptoms. This theory is empirically well-supported among couples (Goodman & Shippy, 2002; Johnson et al., 2017; Siegel et al., 2004) and provides a framework for understanding depression within the couple context. Prior studies have shown that individuals with depression experience fewer positive and more negative interactions with their partners than individuals suffering from substance use disorders, anxiety disorders, and schizophrenia (Zlotnick et al., 2000). What remains unclear is the extent to which these interactions might influence the partner's depressive symptoms and the potential for feedback loops whereby depression might be enhanced within a couple context over long periods of time. The current study sought to apply Coyne's interactional theory to determine how depressive symptoms among partners might mutually influence one another in the long run.

Previous literature has identified several potential mechanisms whereby depression contagion may occur. These include cognitive (e.g., negative evaluations), behavioral (e.g., modeling), and interpersonal (e.g., dependency, excessive reassurance-seeking) processes (Joiner & Katz, 1999), which are not mutually exclusive. Co-rumination

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and commiseration between partners can also increase depression severity (Ames-Sikora et al., 2017), as can perceived burden of having a depressed partner (Coyne, 1987). Such interactions and feelings in turn decrease marital satisfaction (Whisman et al., 2004), and relationship quality (Bodenmann & Randall, 2013). And while the immediate impact of these processes is clear, the longitudinal risk that they might present to both partners is less understood.

Much of the research on the interdependence of depressive symptoms between couples has been limited to cross-sectional or short-term follow-up designs. For instance, a 1-year follow-up study (1987), using the same sample as the current study, found that difficulties among spouses of patients with non-remitting depression were somewhat more severe compared to those of spouses of patients in remission. In a 10-year longitudinal study of older couples, Stafford et al., (2019) reported that greater increases over time in depressive symptoms were seen in those with less positive support. The two studies that span multiple decades revealed bidirectional influences between depression and marital quality (Najman et al., 2014) as well as between depression and family arguments (Wong et al., 2020). Such long-term designs can help shed light on the mutual influences between depressed patients and depressive symptoms of their partners and contribute to evidence in support of potential long-term depression contagion suggested by Coyne's interactional theory (Coyne, 1976, 1999; Hammen, 1991).

Women have been found to be particularly susceptible to transmission of depressive symptoms from partners (Das, 2020; Revenson et al., 2016) and women's depression has been strongly predicted by partner support and marital satisfaction (Kendler & Gardner, 2014). Newlywed women with more severe depressive symptoms at baseline experience greater marital stress and depressive symptoms one year later. Moreover, lower support from partners is associated with more severe depressive symptoms among women (Davila et al., 1997). Conversely, a study of couples during the perinatal period found that women's depressive symptoms in late pregnancy predicted elevated depressive symptoms in their partners 6 weeks after birth, but that partners' depressive symptoms did not predict women's depressive symptoms during the perinatal period (Fredriksen et al., 2019). While most research on relationship dynamics is based on community samples, less is known about depression contagion in the context of clinical depression among women.

The present study, based on Coyne's interactional theory, examines (1) the extent to which symptoms among women with depression influence their partner's depressive symptoms and (2) whether women with depression and their partners influence each other's depressive symptoms over the course of 23 years. Based on prior findings, we hypothesized

that women with depression would influence and be influenced by their partners' depressive symptoms.

## Methods

### Sample Selection and Characteristics

Women with depression were drawn from a larger sample of 424 individuals who entered treatment for depression (see Cronkite et al., (1998) for details). Inclusion criteria were: diagnosis of unipolar depression through clinical interview based on the Research Diagnostic Criteria (Spitzer et al., 1979), depressive symptoms not due to neuropsychological/metabolic disorder, no recent manic symptoms or significant substance use problems, and age  $\geq 18$ . Of those eligible, 91.7% agreed to participate. Among those, 69 women with depression (based on self-reported gender identity) and their partners participated, forming this study's final sample. Participants provided informed consent and the study was approved by the [information redacted for blind review]. Rigorous efforts to maintain updated contact information, systematic follow-up, and payment for participation yielded retention rates of 81% and 73% at 10- and 23-year follow-ups, respectively (Bi et al., 2015). At all waves, each partner separately completed survey questionnaires.

Average age at baseline was 36.8 ( $SD = 11.9$ ) years for women, and 40.5 ( $SD = 13.9$ ) for their partners. At baseline, 53.6% of the couples had at least one child living in the home. Women and their partners primarily identified as White (89.9% and 88.4%, respectively) with a median baseline annual household income in the range of \$60,000–78,000 (adjusted to 2022 dollars), which is consistent with the U.S. population. Median educational attainment level was two years of college.

### Measures

Descriptive statistics of measures and their intercorrelations are reported in Table 1 and Supplemental Table 1, respectively.

*Depressive symptoms* were measured by self-report on the Health and Daily Living Form (Moos, 1992), a structured assessment that includes a summed 18-item scale based on the Research Diagnostic Criteria (Spitzer et al., 1979). Seven items assess depressive mood symptoms (e.g., felt sad or blue, feeling inadequate) and 11 items assess behavioral symptoms (e.g., loss of energy, loss of interest in usual activities). Item responses ranged from 0 (never) to 4 (often); higher scores reflect more severe depressive symptoms. This depression measure has demonstrated strong reliability (Cronbach's  $\alpha = 0.92$  at baseline), a high correlation with the Beck Depression Inventory (Beck et al., 1987) and

**Table 1** Descriptive statistics of study variables (N=69 couples)

Variable	Mean	SD	Min	Max	Alpha
Women's depressive symptoms (baseline)	43.98	15.03	3.00	72.00	.92
Women's depressive symptoms (10-year follow-up)	27.06	13.87	0.00	64.00	.93
Women's depressive symptoms (23-year follow-up)	29.13	15.59	0.00	66.00	.93
Partners' depressive symptoms (baseline)	26.64	15.84	0.00	69.00	.94
Partners' depressive symptoms (10-year follow-up)	19.53	13.05	0.00	68.00	.93
Partners' depressive symptoms (23-year follow-up)	17.91	14.67	0.00	61.00	.94
Income (baseline)	5.07	2.27	1.00	8.00	–
Education (baseline)	13.26	2.29	8.00	17.00	–

Descriptive statistics are based on estimates using Full Information Maximum Likelihood (employs the full study sample)

is predictably associated with other measures of functioning such as physical symptoms, self-concept, and engagement in social activities (Cronkite et al., 1998; Moos, 1992).

*Income* was measured by self-reported annual household income at baseline (1 = less than \$15,500 to 8 = at least \$89,000), adjusted to 2022 dollars.

*Education* was measured by self-report at baseline in years, ranging from 8 ( $\leq 8$  years) to 17 ( $\geq 5$  years of post-high school/college education).

*Couple status* at each follow-up was measured by self-report (1 = intact, still married/cohabiting with same partner as at baseline, 0 = separated/divorced/no longer cohabiting with partner). At 10-year and 23-year follow-up, 38% ( $n=26$ ) and 36% ( $n=25$ ) of the couples remained intact, respectively.

*Relationship quality* was used in post hoc analysis and was measured by a 6-item scale with a 5-point response scale (Spanier, 1976). The items capture interpersonal communication and emotional responses within the couple. Sample items include “calmly discuss something together” and “have a good time together.”

## Analysis

We estimated a structural equation model (SEM) of the cross-lagged associations between women's and their partners' depressive symptoms over time. SEM is a validated approach to estimating dyadic models, particularly with distinguishable and non-interchangeable dyads (Olsen & Kenny, 2006). This model was selected over a dyadic-focused model given the current study's focus on reciprocal influences between partners' depressive symptoms over time, rather than concordance in depressive symptoms between partners within time points. The current model included auto-correlations between depressive symptoms over time within women and partners. Income, education, and couple status were covariates for all predictive pathways, based on evidence that they influence depressive symptoms (Luhmann et al., 2012; Ross, 2000; Rotermann, 2007; Wang

et al., 2010). All within-time point covariances were estimated. We conducted all analyses in Mplus (Muthén & Muthén, 2012) using Full Information Maximum Likelihood (FIML) to account for missing data and retained the full baseline sample ( $n=69$  couples) in analyses. Specifically, FIML imputes missing data based on variables included in the model to retain the full sample and prevent biases related to listwise or pairwise deletion.

## Results

Our SEM model (Fig. 1) showed adequate fit to the data (RMSEA = 0.058; SRMR = 0.05; CFI = 0.96; TLI = 0.73;  $\chi^2(4) = 4.94$ ,  $p = 0.29$ ). R-squares for predicting depressive symptoms for women and partners at all follow-ups were within the large effect size range, including 0.20 for women's depressive symptoms at 10-year follow-up, 0.49 for women's depressive symptoms at 23-year follow-up, 0.21 for partner's depressive symptoms at 10-year follow-up, and 0.32 for partner's depressive symptoms at 23-year follow-up.

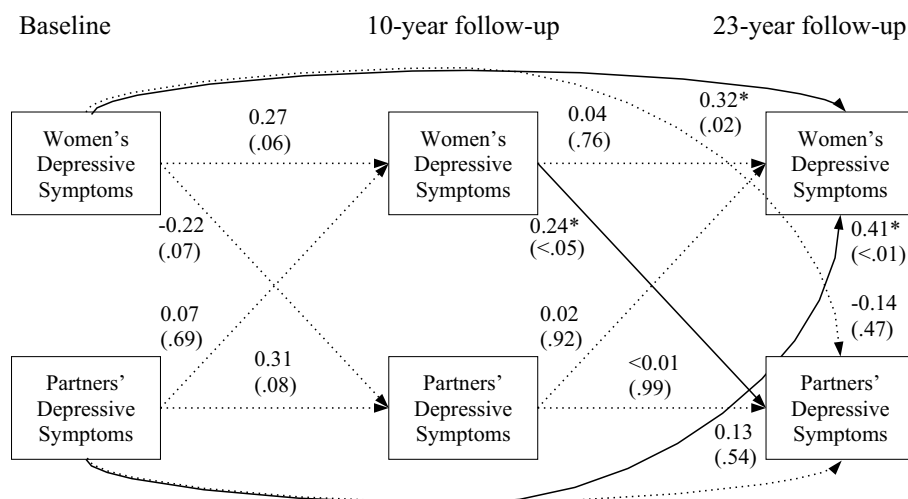
## Autocorrelations

For women with depression, baseline depressive symptoms predicted depressive symptoms at 23-year follow-up ( $\beta = 0.34$ ,  $p = 0.02$ ). Their partners showed no significant auto-correlations of depressive symptoms over any time intervals.

## Covariate Effects

Lower income significantly predicted more depressive symptoms at 10-year follow-up for partners ( $\beta = -0.28$ ,  $p = 0.02$ ). Intact couple status significantly predicted more depressive symptoms among partners of women with depression at 23-year follow-up ( $\beta = 0.36$ ,  $p = 0.02$ ). Lower education predicted more depressive symptoms at 23-year follow-up among women ( $\beta = -0.37$ ,  $p < 0.01$ ). Post hoc analyses

**Fig. 1** Cross-lagged associations of couples' depressive symptoms over 23 years. Note. Standardized coefficients and p-values reported. Solid paths/\* = significant ( $p < .05$ ). Dotted paths = NS ( $p \geq .05$ ). Covariances of within-time point measures and covariate effects not shown



yielded nonsignificant effects of relationship quality on the model.

### Cross-Lagged Associations

Baseline depressive symptoms among partners significantly predicted women's depressive symptoms at 23-year follow-up ( $\beta = 0.41$ ,  $p < 0.01$ ). Women's depressive symptoms at 10-year follow-up predicted their partners' depressive symptoms at 23-year follow-up ( $\beta = 0.24$ ,  $p < 0.05$ ).

### Discussion

Coyne's, (1976) interactional theory proposed that individuals with depression generate negative affect in those around them, also known as "depression contagion." The current findings expand this theory to indicate that women with depression and their partners both exhibit long-term mutual associations with one another's depressive symptoms. In other words, Coyne's theory extends to partners, who may not be clinically depressed, but may influence their partner's symptoms as well as be influenced by their depressed partner's depressive symptoms over the course of 23 years. Together, these findings highlight that the negative spread of depressive symptoms between partners, as described by Coyne, can extend across decades.

Our finding that women's depression was predicted by their partners' depressive symptoms is consistent with results from nationally representative (non-clinical) samples (Das, 2020; Revenson et al., 2016). This pattern reflects theoretical models of women as being relationally interdependent with socially based self-construals that influence their psychosocial functioning (Cross & Madson, 1997). In this way, clinicians may benefit from routinely assessing the social factors surrounding women struggling with

depression and identifying the extent to which those factors are modifiable versus non-modifiable in their treatment planning. For instance, therapists can help to uncover the mechanisms, such as criticism or withdrawal, that might link a partner's prior depressive symptoms to the other partner's current emotions. The therapist can then identify strategies to mitigate the impact of those mechanisms, such as cognitive restructuring and/or setting interpersonal boundaries within relationships. Prior short-term studies suggest that a couple's supportive dyadic coping and each partner's individual self-esteem levels can serve to protect against depression contagion in the short-term (Johnson et al., 2017), something for therapists to consider. Helping women understand how and why a partner's influence may persist can highlight therapeutic targets and enhance self-awareness and empowerment.

Our finding that depressed women's depressive symptoms predicted their partners' depressive symptoms contrasts with some prior findings (Das, 2020; Kouros & Cummings, 2010; Revenson et al., 2016). Given that the current study included a sample of women with clinical depression who were followed over an extended duration, this discrepancy between findings might reflect an underlying lingering effect that may only be detected across prolonged periods (e.g., over 10 years) and/or only exist in the context of clinical depression and its recurrent episodes. Indeed, husbands of women diagnosed with chronic depression have been found to experience less attachment security than husbands of women diagnosed with discrete depressive episodes (Whiffen et al., 2001). For this reason, providers might not only consider the duration and severity of depression in women who are currently depressed but also assess these factors when working with families that include a member who has struggled with depression over time. It may also be helpful to openly discuss how one partner/family member's depression might impact those around them in a way that is constructive, thus

giving those close to that person a chance to work with the provider to prevent depression contagion within their family system. Specifically, a therapist might explore how thought, behavior, and relationship patterns related to depression are perceived by their partner and the extent to which that partner might internalize such patterns. For instance, if one person in the couple is irritable, expresses insecurity, or withdraws, their partner might misperceive these as signs of rejection or potential inadequacies as a partner. A therapist is in a powerful position to provide guidance and insight on how to attribute and respond to a partner's depressive symptoms. Doing so can protect both partners within a couple from future declines in mood.

Interestingly, reciprocal influences in depressive symptoms were found across all couples despite only about a third of the couples remaining intact at follow-ups. This suggests that interactions between couples may have lasting influence on the extent to which one another's depressive symptoms persist despite separations. For this reason, assessing a client's mental health history to include previous partners and family members, in addition to the current family setting, can provide unique insight about contextual factors that contribute to current mental health challenges. Although some couples and families may hesitate to discuss their past, the current findings suggest that the past can have a staying power well into the future. Further, the covariate effect of intact couple status predicting more depressive symptoms among partners over time further supports Coyne's interactional theory. That is, remaining with a partner who is clinically depressed enhances risk of increased depressive symptoms. This effect is likely aligned with many couple and family therapists' observations and provides an opportunity to prevent depression risk for mental health issues in both partners as well as problematic transferences within the relationship.

There was a high separation rate among couples in the current study. This finding likely reflects the elevated divorce rates among individuals with mental health conditions compared to the general population (Merikangas, 1984; Mojtabai et al., 2017), likely explained by the exacerbating influences of depressive symptoms on family arguments over time (Wong et al., 2020). Further research on specific mechanisms of relationship satisfaction and stress, separation timing, and the frequency and nature of interactions would enhance understanding of this topic.

The current findings support the use of empirically-supported couples-based interventions for depression, which provide the added benefits of improving relationship functioning (Baucom et al., 2017; Fischer et al., 2015) and preventing depression contagion (Cohen et al., 2014). Integrating couple-focused approaches into depression assessment and treatment also aligns with evidence that relationships more strongly influence mental health than vice versa

(Braithwaite & Holt-Lunstad, 2017). In addition, couple and family therapists may consider seeing depressive symptoms or diagnosis in one partner as an opportunity to closely examine the potential transmission of symptoms through couple interactions as a method to both prevent and/or treat depressive symptoms in both partners. Further, given the long duration between time points in the current study as well as the endurance of effects regardless of couple status over time, therapists may consider exploring dynamics from past and previous relationships that might contribute to current and future risk for depression.

## Limitations

The sample consisted of predominantly White individuals located in [redacted for masked review] who were diagnosed with depression and entered depression treatment, which limits generalizability of findings and provides a restricted, selective representation of depression contagion. Second, the couples in our sample were mixed-gender, limiting potential generalizability of results to non-mixed-gender couples. Third, although relationship quality was not found to be a significant factor nor did its inclusion impact primary findings, our study did not include other mechanisms that potentially underlie the observed depressive influences within couples, such as relational uncertainty and interference from partners (Knobloch & Delaney, 2012), burdens experienced by partners (Coyne, 1987), cultural scripts of masculinity and femininity (Thomeer et al., 2013), and shared life events or stressors. Fourth, income and education were included as fixed rather than time-varying covariates. Fifth, while our sample of couples is not large compared to cross-sectional studies and, thus, all clinical implications should be interpreted with caution due to the small sample size, the strength of this study is that they were successfully followed at multiple time points over 23 years. Sixth, although not all couples remained intact over the 23-year time frame, we still observed lasting effects on depressive symptoms that might be even stronger if we had had a large enough sample of intact couples to estimate a separate model for them. Lastly, while the study's longitudinal observational design is a methodological strength, we are limited in the extent to which we can infer causality. Nevertheless, the significance of associations across long intervals, and the reasonable assumption that couples interact on an ongoing basis, suggest evidence in favor of depression contagion within couples. Since the women in the sample had been diagnosed with depression at baseline, it is possible that any awareness of this diagnosis on the part of the partner may have had a confounding effect on the partner's own depressive symptoms. For example, the perceived burden of having a spouse diagnosed with depression may have a separate influence on the partner's depressive symptoms. Although

we do not have data on whether partners were aware of their spouse's diagnosis, unraveling such a potentially confounding effect is worth pursuing in future research.

## Conclusion

Overall, our findings support persistence of depression contagion between women with depression and their partners over decades and even potential changes in couple status. Assessing and monitoring depressive symptoms in both women struggling with depression and their partners, as well as probing for experience with a depressed partner in prior relationships, may help clinicians enhance depression treatment outcomes and help prevent depression contagion among partners.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s10591-023-09664-x>.

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**Data Availability** The dataset generated during the current study is not publicly available. Please contact the corresponding author regarding access to these data.

## Declarations

**Competing Interests** The authors report no competing interests.

**Ethical Approval** There were no potential conflicts of interest related to this study or manuscript. This research involved human participants, who provided informed consent to participate, and all study procedures were approved by a local institutional review board.

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