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FAMILY PROCESS

ORIGINAL ARTICLE

Subjective emotion trajectories in couple therapy and associations with improvement in relationship satisfaction

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Abstract

Existing couple therapies are generally effective for reducing romantic relationship distress and divorce, but therapy outcomes remain poor for many. Outcomes can be improved through greater understanding of session-by-session therapeutic processes, particularly in real-world treatment settings. Modern couple therapy models commonly emphasize the importance of emotional experiences as key change processes, yet few empirical studies have tested the merits of this focus. The present study addresses this limitation by examining trajectories of subjective emotions and their association with change in a key relationship outcome, relationship satisfaction, among military veterans and their partners at a VA Medical Center. Partners rated their relationship satisfaction prior to couple therapy sessions and subjective emotions immediately after sessions. Consistent with hypotheses, both hard (e.g., anger) and soft (e.g., sadness) negative emotions decreased significantly over the course of therapy. Those couples with greater decreases in hard negative, but not soft negative, emotions showed significantly more improvement in relationship satisfaction. Positive emotions did not significantly change across couples in general, but those couples whose positive emotions did increase also showed more improvement in relationship satisfaction. These results suggest change in subjective emotions may be one process underlying improvement in couple therapy and lend empirical support to the emphasis on emotion-based change processes underlying acceptance-based and emotion-focused couple therapies.

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KEYWORDS
couple therapy, hard and soft emotions, integrative behavioral couple therapy, subjective emotions, therapy process

Approximately 40%–45% of first marriages end in divorce (Copen et al., 2012), and one-third of intact marriages are clinically distressed (Whisman et al., 2008). Couple therapies have been shown to reduce relationship distress and divorce (e.g., Christensen & Heavey, 1999; Shadish & Baldwin, 2005), but therapy outcomes remain poor for many couples: 1/3 or more of couples fail to benefit (D. Baucom et al., 1998; Christensen et al., 2004) or show reliable change (Doss et al., 2012), and many who initially benefit later regress (Christensen & Glynn, 2019). Moreover, despite considerable theoretical advances in couple therapy over the last several decades, these advancements have not translated as clearly into improved outcomes (e.g., Fischer et al., 2016).

Current treatments can be improved and theories refined by attending to both change mechanisms and change processes (Hofmann & Hayes, 2019). Several empirically supported couple therapies emphasize the importance of emotional experiences—and mutual communication and validation of these experiences—as key change processes in couple therapy (Christensen et al., 2020; Johnson, 2020; Snyder et al., 1991). Moreover, two of five principles identified as common across all empirically supported couple therapies include eliciting avoided, private thoughts and feelings—which starts with reducing emotional avoidance—and decreasing aversive emotion-driven, dysfunctional behavior (Benson et al., 2012). However, the importance emotional experience for therapy outcomes has received little empirical attention, leaving unclear the merits of this focus. Translating theoretical advances into improved outcomes requires testing putative change processes. To address this gap, the current study tests change in subjective emotions over couple therapy and associations between change in emotions and improvement in relationship satisfaction, a key outcome in couple therapy.

Emotions can be distinguished between positive and negative dimensions (e.g., Watson et al., 1988). Experience and expression of more positive emotions during relationship interactions are associated with higher relationship satisfaction, fewer beliefs that disagreement is destructive, and more positive appraisals of the interactions (Johnson, 2002). Conversely, higher self-reported negative emotions during relationship interactions are associated with one's own lower relationship satisfaction, higher self-reported global ratings of conflict, and higher observer-coded negative communication (Sanford, 2007b).

Among negative emotions, some relationship scholars distinguish between "hard" negative emotions—such as anger, frustration, and annoyance—and "soft" negative emotions—such as sadness, disappointment, or hurt (Christensen et al., 2020; Johnson, 2020; Sanford, 2007a, 2007b). Hard negative emotions are thought to create interpersonal distance by asserting power and control and placing one partner in opposition to the other, whereas soft negative emotions can create interpersonal closeness by showing vulnerability and eliciting a nurturing response. The importance of these distinctions has been supported empirically in community couples. Sanford (2007a) found that, compared with hard emotions, higher self-reported soft emotions were associated with higher self-reported positive communication, positive conflict appraisal, and conflict resolution, and lower self-reported negative communication. A separate study found that self-reported soft emotions were associated with more self-reported expressions of vulnerability and pursuit of prosocial goals, and more observer-coded positive communication, whereas hard emotions were associated with higher self-reported power assertion and pursuit of self-centered goals (Sanford, 2007b). Additionally, relationship satisfaction was significantly and negatively associated with hard negative emotions, but was not significantly associated with soft negative emotions. A third proposed type of emotion, "flat" emotions such as boredom or disinterest, is characterized by low activation and engagement and is uniquely associated with greater self-reported withdrawal during conflict (Sanford, 2007b).

Past work provides some evidence on the valuable role of soft, or vulnerable, emotions for therapy in particular. Johnson and Greenberg (1988) compared therapy sessions from the three most

improved and the three least improved couples from a clinical trial and found that the most improved couples showed more behaviorally coded "softening" events in therapy. In a study of 25 couples, therapy sessions containing more behaviorally coded vulnerable emotion expressions were rated more positively by couples compared to less vulnerable sessions, and couples who showed more vulnerable expressions improved more in measures of trust by the end of therapy (McKinnon & Greenberg, 2013).

This literature suggests that emotional experience plays an important role in relationship functioning and improvement in couple therapy, but it is currently limited in several respects. First, studies in therapy samples focused on behaviorally coded emotional expression, which is conceptually related but distinct from subjective emotional experience (Leo et al., 2021; Scherer, 2009). Other work on emotions in couple therapy has focused on vocally-encoded emotional arousal (B. Baucom et al., 2015) or feelings of emotional closeness (Doss et al., 2015). Yet subjective emotional experience is central to therapy models. In Emotionally Focused Couple Therapy (Johnson & Greenberg, 1988), the essential theorized change mechanism is the "*accessing of emotional experiences* [emphasis added] underlying problematic and rigid interactional positions, and the resynthesizing of such experiences to create new interactions" (p. 176). Similarly, Integrative Behavioral Couple Therapy (Christensen et al., 2020) guides partners toward accessing and sharing their subjective emotional experience and then connecting over such expressions. Those studies that have focused on subjective emotions have done so in community couples, so it remains unknown what role these emotions play in clinical settings. This distinction is important, as factors that appear to distinguish happy from distressed couples are not necessarily those that are important for therapy outcomes (Karney & Bradbury, 2020). It is essential to examine putative therapeutic mechanisms and processes in a therapeutic setting.

Second, little is known about the trajectory of emotions in therapy. Prior studies on emotion in therapy typically have taken samples from one (Johnson & Greenberg, 1988) to three (B. Baucom et al., 2015; Cordova et al., 1998) points in therapy. Only one study to our knowledge (Doss et al., 2015) collected session-by-session measurements, but did not examine trajectory of emotional experiences. Understanding emotion trajectories can help optimize therapy by identifying whether there is a point in therapy at which emotions tend to reach their point of maximum change—indicating a potential point to shift toward other priorities in therapy (such as from acceptance to change strategies; Christensen et al., 2020)—or if changes in certain emotions are more strongly connected to improvement in relationship satisfaction. It is also necessary to obtain repeated measures because single measurements of mood states are often unreliable for differentiating between individuals (Cranford et al., 2006), which is necessary for explaining differential response to therapy. Finally, much of the research in couple therapy to date has focused on highly controlled efficacy studies (e.g., B. Baucom et al., 2015; Christensen et al., 2004). Treatment outcomes and mechanisms in clinical settings can differ from those in research settings (e.g., Doss et al., 2015), as can treatment length (Christensen & Glynn, 2019), so it is important to identify predictors of improvement in clinical environments.

CURRENT STUDY

The current study uses session-by-session measurements to examine the trajectory of positive, hard negative, soft negative, and flat subjective emotions during couple therapy with veterans and their partners at a Veterans Affairs Medical Center (VAMC), and tests associations between emotion changes and improvements in relationship satisfaction. We hypothesized that positive emotions will increase over the course of couple therapy while negative and flat emotions will decrease. In line with theories emphasizing the positive role of soft emotions in promoting acceptance and intimacy, and the impact of hard emotions in furthering distance and conflict between partners (Christensen et al., 2020; Johnson, 2020; Sanford, 2007a, 2007b), we predict that hard emotions will change more rapidly than

soft emotions.[1] Finally, we predict that greater increase in positive emotions and decrease in negative and flat emotions will be associated with more improvement in relationship satisfaction.

METHOD

Participants

Participants were 27 romantic couples (n = 54 individuals)[2] at a southeastern VAMC who presented for couple therapy at the Couples and Family Clinic, underwent an initial four-session assessment, and completed at least one therapy session. Thirty-seven participants self-identified as White/Anglo American, 12 as Black/African American, two as Latino/Hispanic, and three declined to answer. All but one couple was married, and 17 couples had at least one child. All couples were mixed-gender, with 45 individuals identifying as straight or heterosexual, three as bisexual, and two as pansexual. Mean age was 44.4 years old (SD = 13.0) and median income was $50,000 - $69,000. For highest education, two individuals completed some high school, seven had a high school diploma or GED, seven attended some college, 13 had an Associate's degree, 16 had a Bachelor's degree, six had an advanced degree, and three declined to answer. Five couples were dual-veteran couples. Religious affiliation was mostly Christian (n = 32), with the second most common answer (n = 11) endorsing no religion. At intake, mean relationship satisfaction on the Couples Satisfaction Index-4 (Funk & Rogge, 2007) was 8.1 (SD = 4.0), well below the relationship distress cutoff of 13.5.

Procedure

As part of clinic screening procedures, couples were excluded from couple therapy (and referred to individual treatment) if they reported moderate to severe intimate partner violence, active and untreated substance use disorders, or current ongoing infidelity. Assessment and treatment followed the Integrative Behavioral Couple Therapy (IBCT; Christensen et al., 2020) model, a behavioral couple therapy that combines emotional acceptance with traditional change strategies and was the primary modality offered in the clinic. Couples completed four assessment sessions, including the intake, one individual session with each partner, and a feedback session. The assessment phase is designed to build hope and develop a case conceptualization and treatment plan. The treatment phase began following feedback and lasted a variable number of sessions as determined by the couple on their own or jointly with the therapist. As part of treatment, couples were asked to complete a battery of questionnaires at home following the initial visit as well as several ratings at each session that are the focus of this investigation. Institutional Review Board approval was granted by the Medical University of South Carolina and the VA Research and Development Office to study de-identified clinical data for research purposes.

Couple therapists included three full-time doctoral-level psychologists, two postdoctoral fellows, and four predoctoral psychology interns. Treatment was delivered by either a psychologist, co-therapy teams consisting of a psychologist and a trainee (intern or fellow), or a trainee under the supervision of a psychologist. Training was offered by two clinic psychologists who are certified IBCT therapists and national trainers. Initial training was 2–3 days long and modeled after national IBCT trainings in

[1]It is also of theoretical interest to test whether change in hard negative emotions is differentially related to improvement in satisfaction compared with change in soft negative emotions. However, the current sample size is too small for such a test, which would involve a three-way interaction.

[2]Sample size determination: We planned to enroll all eligible couples from August 2019 to July 2020. However, due to the COVID-19 pandemic, data collection ended abruptly in March 2020 when in-person therapy services were moved to telehealth. The challenges of the transition made it no longer feasible to continue emotion ratings.

the VAMC, including didactics, reading, discussion, and role-plays. Training continued via co-therapy with an IBCT-certified psychologist in which the trainee gradually took more responsibility over time.

Measures

Emotion ratings

Immediately following each session, participants rated the extent to which they felt 12 emotions during the session on a scale from 1 (not at all) to 5 (extremely). Four emotion domains were assessed: positive (items: *happy*, *satisfied*, *content*), hard negative (*angry*, *annoyed*, *irritated*), soft negative (*sad*, *hurt*, *disappointed*), and flat (*bored*, *indifferent*, *disengaged*). Emotion words for hard negative, soft negative, and flat categories were identical to Sanford's (2007b) Couples Emotion Rating Form, with one less item per construct to minimize participant burden. These emotions and categories have shown strong evidence of validity for measuring emotions during couple interactions—for example, showing strong associations with observer-rated emotions of the same type, smaller associations with observer-rated emotions of different type, and expected associations with observed behavior (see Sanford, 2007a, 2007b, for further validity information).[3] Positive emotions were adapted from the Profile of Mood States (Cranford et al., 2006).[4] Higher scores represent higher amounts of the emotion. Cronbach alphas for three emotion scales were good (positive = 0.81; hard negative = 0.88; soft negative = 0.80). However, alpha for flat emotions (0.48) was unacceptably low, so flat emotions were dropped from the primary analyses (but are included in supplemental material for exploratory purposes).

Relationship satisfaction

Relationship satisfaction was measured by the Couples Satisfaction Index-4 item version (CSI-4; Funk & Rogge, 2007) administered at the beginning of each therapy session ($\alpha = 0.94$). The CSI-4 is a widely used and well-validated measure of relationship satisfaction. Higher scores indicate higher relationship satisfaction. Administering the relationship satisfaction measure at a separate time point from the emotion measures reduces the amount of shared variance between these two constructs that would be attributed to global feelings or biases about the relationship, a potential confound. See online supplemental material for additional discussion of this issue and the potential confound of shared method variance.

Analytic plan

Analyses followed intention-to-treat principles in that data from all eligible couples are used in analyses regardless of number of therapy sessions attended. This approach ensures the sample is most representative of couples who seek therapy in this treatment setting. Analyses were conducted in R (R Core Team, 2018) using multilevel growth models estimated in the lme4 package (Bates et al., 2015), using a Kenward-Rogers correction for small samples (Kuznetsova et al., 2017). A three-level model, with time points nested within individuals and couples, was used. Based on results of likelihood ratio tests (details of which are in the supplemental material), random effects of time were included at level

[3]The wording was slightly changed from Sanford's (2007b) scale, from agreement-based (e.g., "disagree strongly") in the original scale to quantity based (e.g., "not at all present"), to accommodate a separate study focused on change in empathic accuracy. Given the similarity of the wording and items, we do not expect this change to impact the validity of this measure.

[4]We thank Eshkol Rafaeli and Dana Atzil-Slonim for their guidance on selection of emotion constructs and items.

2 only. The basic model testing emotion trajectories used the following multilevel model, presented in series of equations format:

$$\text{Level 1}: \text{EMOTION}_{tij} = \pi_{0ij} + \pi_{1ij}{}^{*}\left(\text{SESSION}_{tij}\right) + e_{tij}.$$

$$\text{Level 2}: \pi_{0ij} = \beta_{00j} + \beta_{01j}{}^{*}\left(\text{GENDER}_{0ij}\right) + r_{0ij}.$$

$$\pi_{1ij} = \beta_{10j} + r_{1ij}$$

$$\text{Level 3}: \beta_{00j} = \gamma_{000} + \mu_{00j}.$$

$$\beta_{10j} = \gamma_{100}$$

where t represents time points, i represents individuals within a couple, and j represents couples. SESSION is session number (0 = first therapy session), and GENDER is effect-coded (male = −0.5; female = 0.5). Differences in rate of change between hard and soft negative emotions was tested using a multivariate model with dummy-coded emotion type (0 = hard, 1 = soft) as a main effect and interaction with session number. These models were conservatively estimated to have at least 0.8 power to detect population effect sizes of $d = 0.71$ and above.[5]

To test associations between change in emotion and improvement in therapy, we fit a growth model for CSI-4 scores over the course of therapy, saved empirical Bayes' estimates of change for each individual, and then computed a change score from first to last session based on these estimates. This method takes advantage of repeated measurements to obtain a more reliable estimate over simply subtracting the first from last session values (Doss et al., 2012; Rogosa & Willett, 1983). This change score, in which higher values represent more improvement, was then added to the above model as a main effect and interaction with session number.

RESULTS

Preliminary analyses

Table 1 shows descriptive statistics and correlations among main study variables. Couples had completed an average of 4.4 therapy sessions ($SD = 3.4$, range = 1 to 12) when data collection ended. Twenty-one couples had at least two therapy sessions and could therefore contribute to the estimate of change over time, while six couples (three of whom were active at the time data collection stopped due to COVID-19) completed only one therapy session and could thus only contribute to baseline estimates. The quadratic effect of time was nonsignificant for all emotions ($ps > 0.099$), suggesting changes in subjective emotion follow a linear trajectory. All hypotheses were therefore tested using a linear effect of time only.

At the first therapy session, most couples were clinically distressed (i.e., <13.5; Funk & Rogge, 2007) on the CSI-4 ($Mdn = 12.0$, $SD = 3.9$). However, they nonetheless reported more positive emotions ($B_0 = 3.0$, on a 1–5 scale) than both hard negative ($B_0 = 2.0$) and soft negative ($B_0 = 2.2$) emotions ($ps < 0.001$) in the beginning of therapy. Soft and hard negative emotions were not significantly different at the beginning of therapy ($B = 0.17$, $p = 0.161$). In sessions in which participants experienced more positive emotions, they tended to experience fewer hard negative (standardized $\beta = -0.600$, $p < 0.001$) and soft negative ($\beta = -0.632$, $p < 0.001$) emotions, which were positively

[5]Power analysis is complicated by the nested data structure combined with variable length of therapy, so a few adjustments were made. Twenty-one couples had at least two data points ($M = 5.38$ for these couples) and could therefore contribute to estimates of the change slope, so the sample size was set at 21 with five observations over time. The correlation between time points was set at 0.285 (the typical correlation between time points for each emotion rating). Power analysis was conducted using Monte Carlo simulations (2000 iterations) of the multilevel growth model with these parameters and $\alpha = 0.05$. Simulations found that a population effect size of $d = 0.71$ is needed for 0.8 power. This estimate is conservative given the average number of therapy sessions for these 21 couples was slightly higher than 5 and it excludes the partner's contribution to the estimate, but it may be useful as a floor estimate of power for the tests of emotion change.

TABLE 1 Descriptive statistics and correlations for main study variables

	Men		Women						
Variable	***M***	***SD***	***M***	***SD***	**1**	**2**	**3**	**4**	**5**
1. Session number	4.4	3.4	4.4	3.4	-	.025	−.147	−.195*	.179
2. Positive emotions	3.0	0.9	3.1	1.0	−.059	-	−.601***	−.519***	.353***
3. Hard negative emotions	1.6	0.8	1.9	1.1	−.108	−.415***	-	.679***	−.349***
4. Soft negative emotions	1.8	1.0	2.2	1.1	−.130	−.568***	.442***	-	−.325***
5. Relationship satisfaction	12.1	4.1	12	3.8	−.079	.142	−.138	−.096	-

Note: Correlations for men are below the diagonal, and for women are above the diagonal. Correlations are computed by first person-mean centering variables so that associations represent within-person associations. Correlations for uncentered variables are shown in Table A1.

*$p < 0.05$.

**$p < 0.01$.

***$p < 0.001$.

associated with each other (β = 0.641, $p < 0.001$). Both members of a couple also tended to endorse similar emotions to one another at each session (βs = 0.34 to 0.49; $ps < 0.01$).

Men and women did not significantly differ in any emotion category either at the start of therapy (*positive B* = 0.112, $p = 0.618$; *hard negative B* = 0.420, $p = 0.088$; *soft negative B* = 0.305, $p = 0.268$) or overall across all sessions (*positive B* = 0.095, $p = 0.550$; *hard negative B* = 0.201, $p = 0.267$; *soft negative B* = 0.342, $p = 0.116$). Shown in Table 1, within-session associations find that, in sessions in which women reported higher relationship satisfaction before the session, they reported significantly higher positive emotions and significantly lower hard and soft negative emotions during the session. However, men did not show significant associations between relationship satisfaction before a session and emotions reported after.

Change in emotions over therapy and associations with therapy outcomes

Consistent with hypotheses, both hard ($B = -0.079$, 95% CI = [−0.135, −0.030], $p = 0.007$) and soft ($B = -0.073$, 95% CI = [−0.120, −0.024], $p = 0.014$) negative emotions significantly decreased over therapy. However, contrary to predictions, positive emotions did not significantly change overall ($B = 0.012$, 95% CI = [−0.042, 0.070], $p = 0.671$). Additionally, we did not observe evidence that hard negative emotions decreased faster than soft negative emotions ($B = 0.012$, 95% CI = [−0.042, 0.066], $p = 0.660$). Finally, there were not significant gender differences in the degree of change for any emotion category ($ps > 0.295$).

Table 2 shows regression models testing associations between change in emotions and improvement in relationship satisfaction. Consistent with predictions, those who reported greater increase in positive emotions ($B = 0.032$, 95% CI = [0.007, 0.055], $p = 0.019$) and greater decrease in hard negative emotions ($B = -0.027$, 95% CI = [−0.050, −0.003], $p = 0.039$) over therapy showed greater improvements in relationship satisfaction. This effect was not significant for soft emotions ($B = -0.014$, 95% CI = [−0.040, 0.013], $p = 0.287$). Figure 1 visualizes these interactions, showing model-predicted emotion trajectories for each participant as a function of time and change in satisfaction. Those who improved the most in relationship satisfaction (blue to dark blue lines) tended to have steeper trajectories in positive and hard negative emotions, whereas those who did not improve or worsened (gray to red to dark red) tended to show no change or worsening in positive and hard negative emotions. Soft negative emotions, by contrast, tended to decrease over therapy regardless of change in satisfaction.

DISCUSSION

Attending to partners' subjective emotional experiences occupies a central focus of empirically supported couple therapies, but the temporal course of subjective emotions in therapy has remained unknown, as has the extent to which change in these emotions are associated with therapeutic outcomes.

TABLE 2 Multilevel regression results for association between change in satisfaction and change in emotion

	Positive			Hard negative			Soft negative		
Variable	***B***	***95% CI***	***p***	***B***	***95% CI***	***p***	***B***	***95% CI***	***p***
Intercept	2.98***	[2.71, 3.24]	<0.001	2.04***	[1.80, 2.29]	<0.001	2.21***	[1.95, 2.47]	<0.001
Gender	0.03	[−0.32, 0.37]	0.872	0.25	[−0.09, 0.60]	0.217	0.40*	[−0.00, 0.79]	0.092
Session	0.02	[−0.03, 0.08]	0.492	−0.08**	[−0.13, −0.03]	0.007	−0.08**	[−0.12, −0.03]	0.008
Δ Satisfaction	−0.12	[−0.31, 0.09]	0.289	0.12	[−0.06, 0.30]	0.221	0.04	[−0.16, 0.23]	0.713
Session * Δ satisfaction	0.03*	[0.01, 0.06]	0.019	−0.03*	[−0.05, −0.00]	0.039	−0.01	[−0.04, 0.01]	0.287

Note: Separate models shown for positive emotions, hard negative emotions, and soft negative emotions. Gender is effect-coded (−0.5 = male; 0.5 = female); Δ satisfaction = grand mean-centered change in relationship satisfaction.

*$p < 0.05$.

**$p < 0.01$.

***$p < 0.001$.

The present study sought to address these limitations in a sample of military veterans and their partners engaging in couple therapy. Results found that both self-reported hard and soft negative emotions decreased linearly over the course of couple therapy. Those whose hard negative emotions decreased more throughout therapy also showed greater improvements in satisfaction, but this pattern was not observed for soft negative emotions. Positive emotions did not significantly increase overall, but those whose positive emotions did increase showed greater improvements in relationship satisfaction.

The present study supports the theorized role of subjective emotions in couple therapy and their role in therapeutic change processes. A central focus of IBCT is to elicit partners' internal emotional experiences, validate and reflect them, and guide partners toward mutual compassionate understanding and validation, a process known as empathic joining (Christensen et al., 2020). This process leaves partners feeling understood, accepted, and more connected with each other, which may broadly reduce negative emotions over time. Additionally, by addressing relationship problems repeatedly over therapy, couples may habituate to the emotional content and learn it was less threatening after finding they could discuss heretofore emotionally painful issues without catastrophic consequences (Christensen et al., 2020), thereby reducing the negative emotions associate with such content. Such changes may also occur as problems are resolved in the relationship, reducing negative emotions in general by reducing their causes. Finally, even when problems cannot be solved, IBCT aims to foster acceptance of many differences and problems, which can make problems more tolerable and less emotionally evocative (Christensen et al., 2020).

In contrast, positive emotions did not significantly change over time. It is possible that positive emotions do not change much in couple therapy, at least in the relatively few number of sessions observed in this sample. Couples generally seek therapy because of relationship problems, and therapy often focuses on negative aspects of the relationship (Doss et al., 2004), limiting opportunities to experience more positive emotions. Perhaps positive emotions increase later in therapy once significant progress has been made on the central problems and therapy can shift to more positive aspects of the relationship. Alternatively, by focusing on negative aspects of the relationship, couple therapy could be less suited to increasing positive emotions. A similar phenomenon occurs in depression treatments, which tend to improve negative, but not positive, affect (Boumparis et al., 2016). Finally, positive emotions were surprisingly high at baseline ($M = 3.0$ on a 5-point scale), so there may have not been much room for improvement on average. Although we did not observe evidence for change in positive emotions at the group level, some partners nonetheless showed greater change in positive emotions than others, and those that did tended to experience greater increases in relationship satisfaction. It may be that learning to access positive feelings in therapy despite the relationship problems allows partners to stay invested in the discussion for longer or be more motivated to listen, understand, and validate one another's perspectives.

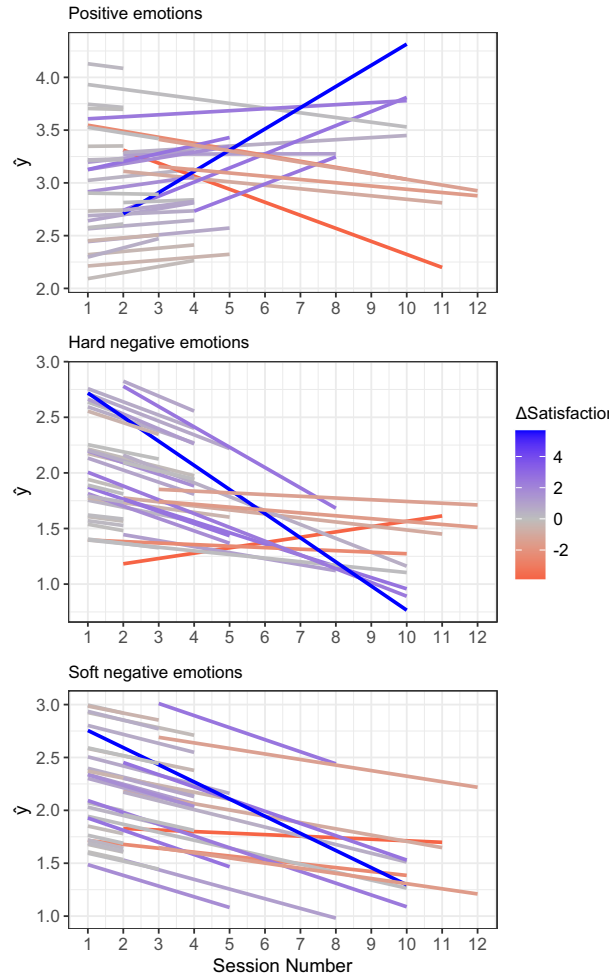

FIGURE 1 Change in positive, hard negative, and soft negative emotions for each participant over therapy as a function of change in relationship satisfaction. ŷ = model-predicted values for each emotion. ΔSatisfaction = total change in relationship satisfaction on the CSI-4 (Funk & Rogge, 2007). Those who improved more (dark blue) show steeper increases in positive emotions and decreases in negative emotions, whereas those who improved less or deteriorated (red) show either less pronounced changes or emotion worsening.

Those who improved more in relationship satisfaction also showed greater decreases in hard negative emotions. This finding is consistent with views in IBCT (Christensen et al., 2020) and EFCT (Johnson, 2020) that hard negative emotions are often detrimental to relationships, and that decreasing or reconstituting them as soft emotions is a key task in effective couple therapy (Benson et al., 2012). Anger and other hard emotions are not always problematic, and may be relationship-promoting in certain cases, particularly when they match the interaction context and are situationally appropriate (McNulty & Russell, 2010; Sanford, 2007b). However, distressed couples often relate to one another overwhelmingly through hard, compared with soft, expressions (Sanford, 2007a), often the result of a cycle of increasing vilification and behavioral polarization (B. Baucom & Atkins, 2013). Hard negative emotions function to exert power and control over another (Sanford, 2007b), which may elicit hard emotions in kind (e.g., Heyman, 2001). When couple therapy can successfully reduce hard emotions, the door is opened for more vulnerable emotions and other joining behaviors that allow partners to see themselves as a team working together rather than in opposition to one another.

This pattern was not observed for soft negative emotions, although the effect was in the predicted direction. A nonsignificant result is difficult to interpret, especially with the modest sample size in the present study. However, it is possible that soft negative emotions were not inherently detrimental and may at times be relationship promoting. Indeed, rather than aiming to decrease all negative emotions, IBCT actively encourages soft disclosures to facilitate empathic joining. Measures of soft negative emotions may therefore capture two types of variance that work in opposition to one another. Couples may improve in therapy when it helps them reduce negative affect in general (resulting in a negative association between change in satisfaction and change in soft negative emotions). They may also improve when therapy helps them route negative affect through soft emotions in place of hard emotions (resulting in a positive association between change in satisfaction and change in soft negative emotions).

However, we did not observe the hypothesized distinction between trajectories of soft and hard emotions, at least in terms of rate of change over therapy. This result stands in contrast to several past investigations showing a distinction between these dimensions in married and romantic partners (Johnson, 2002; Sanford, 2007a, 2007b; Waldinger et al., 2004), and is noteworthy given the emphasis in IBCT on expressing negative emotions through soft expressions, rather than hard. Perhaps the distinction between experience and expression of emotions (e.g., Leo et al., 2021) is relevant, in that partners may learn to convert their expression of hard emotions to soft expressions in IBCT, but parallel change in emotional experience may not occur or may not occur as quickly. The role of hard and soft negative emotions in relationships is also almost certainly context specific. For example, negative behaviors such as blame are widely known to be harmful when occurring frequently, but may be relationship-promoting when they match the situational context (Overall, 2020). Hard negative emotions may function similarly, signaling relationship problems when occurring frequently, but may be relationship-promoting in some circumstances if, for example, they motivate change-seeking behaviors in the presence of relationship-threatening problems. Emotions also serve communicative functions that may be relationship promoting, even when negative, for example, by alerting partners to salient relationship material they may otherwise miss (Overall et al., 2019). Future work would benefit from examining emotion dynamics both within and across therapy sessions and attending to the specific context in which emotions occur in therapy.

It is important to highlight that this null finding may also be a result of measurement factors and sample size. Hard and soft negative emotions were highly correlated with one another, leaving little remaining variance to test differential associations with rate of change. Partners may have also had difficulty distinguishing between these two dimensions and simply rated all negative emotions similarly. Additionally, we lacked statistical power to test whether change in hard versus soft negative emotions was differentially related to improvement in satisfaction, so these results cannot speak to the relative importance of decreasing hard versus soft negative emotions. Doing so would be a valuable avenue for future research.

One unexpected pattern was that only women's, not men's, relationship satisfaction before each session was significantly associated with emotions reported after. This finding suggests that how women feel about the relationship before a therapy session may influence the emotions they experience during the session, while men may compartmentalize their impression of the relationship overall from experiences in session. This finding is in line with other research that find's men's relationship satisfaction is often unrelated to or less strongly associated with behavior or experiences in specific interactions (e.g., Heavey et al., 1993). Women are also more likely engage in change-seeking behaviors when experiencing dissatisfaction in relationships—and may upregulate negative emotions in the process (Leo et al., 2021)—whereas men engage in change efforts less often and often avoid such interactions (see Crenshaw et al., 2021). It is important to note that such within-session associations between variables would not necessarily translate to patterns of change over time. However, this finding raises an important question of whether change in emotions over therapy is differentially associated with improvement in relationship satisfaction for men and women. Perhaps improvement in relationship satisfaction over therapy is more strongly tied to change in emotions for women than men. The present study is underpowered to test the three-way interaction necessary to test this possibility, but it is an important question that warrants further study.

In addition to understanding the role of subjective emotions in couple therapy generally, it is especially important to understand these associations in veteran populations. Not only are couple (and family) difficulties common in veterans, they also drive veteran referrals for mental health care (e.g., Meis et al., 2013). Additionally, between 2001–2010, divorce rates among veterans increased 38% (Defense Manpower Data Center, 2010), with combat veterans with PTSD being at particularly increased risk for relationship problems (Taft et al., 2011). Moreover, veterans who engage in couple therapy also appear to drop out of treatment at greater rates than the general population. A large national VA dataset study of 10,196 veterans who attended either couple or family therapy found a mean of 6.02 therapy sessions attended (McKee et al., 2022), while another study of 97,302 veterans found a mean of 4.32 sessions (McKee et al., 2021). For couple therapy specifically, of 692 veterans who received IBCT in one study, the mean number of therapy sessions was 5 (Christensen & Glynn, 2019). These factors highlight the importance of understanding therapeutic processes in veteran couples in particular.

There are several limitations to the current study. First, although repeated observations and the focus on within-subjects tests improve statistical power, power was nonetheless limited due to the small sample size, particularly for hypotheses about change in relationship satisfaction. The small sample size also limited power to detect potential moderators of interest, such as gender, and prevented testing or modeling therapist effects, which would have been preferred. Second, with an average of 4.4 sessions for each couple, the course of therapy was considerably shorter than for controlled trials (e.g., Christensen et al., 2004). While this number is attributable in part to COVID-19 interruption of data collection, it is in line with other studies with veteran populations (Christensen & Glynn, 2019; McKee et al., 2021, 2022), suggesting the length of therapy observed in our sample is representative of what typically occurs in VAMCs. Third, this was an observational study without a control group, so causal conclusions cannot be made. Fourth, only self-reported emotion ratings were used in the present sample. Emotions are multifaceted, and these results cannot be assumed to apply to other facets of emotion, such as observer-coded emotions, emotional expression, physiology, or action urges (Scherer, 2009), and within-session emotional dynamics are unknown. Fifth, in contrast to past work (e.g., Sanford, 2007b), flat emotions showed poor internal consistency in measurement, and therefore results for flat emotions may be unreliable. Future research should further investigate this scale to discern causes of measurement problems. Finally, although not by design, our sample included only mixed-gender couples and was majority White or African American, limiting our ability to generalize to same-gender couples and those of other racial or ethnic groups.

CONCLUSION

Identifying therapeutic processes and mechanisms of change are essential steps for improving existing couple therapies. The present study found that self-reported negative emotions decreased linearly over therapy, and changes in positive and hard negative emotions predicted better outcomes in therapy. Replication is needed, but these results provide support for the emphasis on subjective emotional experience in modern couple therapies, as well as highlighting subjective emotions as potential mechanisms of change.

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