

Research Article

AN EXAMINATION OF THE INFLUENCE OF A SEQUENTIAL TREATMENT ON THE COURSE AND IMPACT OF DISSOCIATION AMONG WOMEN WITH PTSD RELATED TO CHILDHOOD ABUSE

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Background: *It has been proposed that posttraumatic stress disorder (PTSD) patients who experience significant dissociation upon exposure to traumatic reminders may do less well in trauma-focused therapies. We explored whether a sequenced two-component treatment in which an emotion regulation skills training module preceding exposure would improve outcomes for those with significant dissociation.* **Methods:** *Analyses were conducted on data from an RCT in which 104 women with PTSD related to childhood abuse were assigned to one of three treatment conditions: Skills Training in Affective and Interpersonal Regulation (STAIR) followed by Narrative Story Telling (NST; STAIR/NST), STAIR followed by supportive counseling (SC; STAIR/SC), or SC followed by NST (SC/NST).* **Results:** *Baseline dissociation was associated with differential outcome such that at low levels of dissociation the three treatments were equally effective but at higher levels STAIR/NST resulted in greater reductions in dissociative symptoms. Level of baseline dissociation did not moderate the effect of the treatments on PTSD outcome. At all levels of baseline dissociation, STAIR/NST produced better PTSD outcome. At posttreatment, however, participants with high dissociation treated with STAIR/NST continued to improve during follow-up, those treated with STAIR/SC maintained gains, and those treated with SC/NST experienced loss of posttreatment PTSD symptom gains.* **Conclusions:** *The differential results observed among the treatments depending on severity of dissociation at baseline and at posttreatment suggest the potential clinical utility of identifying a dissociative subtype of PTSD and of the benefits of sequenced, phase-oriented treatment approaches.* *Depression and Anxiety 00:1–9, 2012. © 2012 Wiley Periodicals, Inc.*

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INTRODUCTION

“Psychological trauma” describes a situation in which a potentially damaging event overwhelms an individual’s cognitive, emotional, and behavioral capacities to effectively respond to the event’s impact. Some have proposed

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that “the helplessness engendered by traumatic experiences can create sudden challenges to normal ways of processing perception, cognition and affect.”^[1] Individuals can encounter a loss of capacity to fully attend to and organize the various aspects of the event as it is happening, a slowing down of responses, an experiential detachment from the event, and a feeling of being unreal. These phenomena are examples of dissociative experiences at the moment of trauma and may recur when the individual is exposed to similar events or feelings of threat after the event. Dissociation, broadly conceived, has been defined as an alteration in consciousness, which includes changes in perception, memory, sense of agency or will, and relationship to the environment.^[2] Recovery from trauma is assumed to involve the reorganization and integration of the memory and perceptions of the event as well as the individual’s sense of self and relationship to the environment. Viewed in this way, recovery from psychological trauma requires recovery from dissociative experiencing.

Posttraumatic stress disorder (PTSD) is one of the more well-recognized consequences of psychological trauma. A defining or signature feature of PTSD is the presence of fragmented memories of the trauma as reflected in reexperiencing symptoms such as intrusive memories of the trauma, nightmares, and flashbacks. Accordingly, therapeutic techniques for the treatment of PTSD have emphasized the importance of recollection of the traumatic event for the purposes of creating an organized and coherent memory. In addition, many psychotherapies include an appraisal of the meaning of the event to facilitate an adaptive reorganization of the individual’s view of him or herself. It is proposed that a therapeutic aspect of this process is that during the narration of the trauma, the individual has a much different subjective experience than that which occurred during the event. The therapeutic recounting involves full and sustained attention to various aspects of the event as it transpired, but in the context of an actual and subjectively experienced safe environment. The therapeutic benefit of the process arises from patient’s capacity to maintain emotional engagement with distressing memories simultaneous with feeling both physically and psychologically intact. Consequently, feelings of helplessness and defeat engendered by the event are modified by a sense of mastery over the memory. The sense of mastery over the traumatic memory along with a reevaluation of the meaning of the event can provide an emotionally corrective experience that supports the evolution of a sense of agency, the integration of the traumatic memory into a more acceptable self-identity, and a more positive and sustained connection to the social and emotional environment.

It has been proposed that patients who tend to experience significant dissociation upon exposure to traumatic reminders may do less well in exposure or trauma-focused therapies.^[3-6] Foa and colleagues^[7,8] proposed that dissociation can reduce the effectiveness of exposure therapy by preventing sustained emotional engage-

ment with trauma-related information. The beneficial effects of more cognitively oriented therapies may also be reduced by dissociation, as experiences of depersonalization and derealization may interfere with recovery by impeding the adaptive reappraisal of the trauma memory and its integration into autobiographical memory.^[3]

To date, there are very few studies that have evaluated the impact of dissociation on the effectiveness of PTSD treatments. Drawing from two randomized controlled trials of participants with PTSD related primarily to motor vehicle accidents, Speckens et al.^[9] found that baseline dissociation did not predict degree of change in intrusive memories during the imaginal reliving sessions of a cognitive therapy protocol. Hageraars et al. reported that in an open trial study of prolonged exposure for patients with PTSD related to mixed trauma, baseline dissociation did not predict rate of change in PTSD symptoms.^[10] However, individuals who were high as compared to low on baseline dissociation were more likely to maintain their diagnosis of PTSD at the end of treatment, with 69% of the high dissociators retaining their PTSD diagnosis as compared to 10% of the low dissociators.^[10] Although the exposure treatment produced equal amount of change in both high and low dissociators and no group-by-time interaction effect was observed, the high dissociators began treatment with more severe PTSD, such that, in absolute terms, at end of treatment, the high dissociators were significantly and clinically still worse off than low dissociators.

Results such as these suggest that researchers and clinicians consider ways to revise current treatments in order to improve PTSD outcomes for those with high levels of dissociation. There are a variety of adaptations that might be considered. Among the most commonly proposed is the use of a sequenced or stage-based approach where an initial or preparatory phase is introduced to focus on reducing symptom severity and dissociation before engaging in trauma memory by strengthening skills related to self-soothing and connection to the social and physical environment.^[1,2,5] This approach would yield two potential benefits: (1) reduction of dissociative experiencing through skills training in emotion regulation and (2) more effective use of exposure therapy by reducing dissociative responses during memory processing.

In this article, we analyzed data from a published randomized controlled trial^[11] of a sequenced treatment, “Skills Training in Affective and Interpersonal Regulation followed by Narrative Story Telling” (STAIR/NST) to assess the impact and course of dissociation as compared to two conditions, where in each condition one of the modules was eliminated and replaced with supportive counseling (SC), (i.e. STAIR/SC and SC/NST). Dissociation was assessed at baseline, throughout treatment and at 3- and 6-month follow-up for all three treatment conditions. The results reported in this article provide information about (1) the course of dissociation through treatment and its dependence on baseline levels of dissociation, (2) the impact of baseline, midtreatment, and posttreatment dissociation on PTSD

outcome, and (3) the relative differences in the course and impact of dissociation in STAIR/NST as compared to the two control conditions. To date, there are few studies that have assessed dissociative symptoms across the course of treatment. We were able to explore not only the impact of baseline dissociation on PTSD outcome but also track changes in the severity of dissociation across the course of treatment and assess its influence on PTSD at different points in the therapy.

METHODS

PARTICIPANTS AND PROCEDURE

The treatment trial included 104 women with a primary diagnosis of DSM-IV-defined PTSD related to childhood sexual and/or physical abuse by a caretaker or person in authority over them before the age of 18 years. Exclusion from the trial included current psychosis, unmedicated bipolar disorder, acute suicidality or severe depression requiring immediate treatment or hospitalization, and substance dependence (but not substance abuse). The presence of a dissociative disorder was not an exclusion criterion.

Participants were randomly assigned to one of three treatment conditions: STAIR/NST, STAIR/SC, and SC/NST. Dissociation was assessed at 11 points in time: pretreatment, sessions 2, 4, 6, 8 (midtreatment), 10, 12, 14, 16 (posttreatment), 3-month follow-up, and 6-month follow-up. PTSD symptoms as measured by the Clinician-Administered PTSD Scale (CAPS) were assessed at four points in time: pretreatment, posttreatment, 3-month follow-up, and 6-month follow-up. STAIR/NST is a 16-session individual therapy in which each module is comprised of eight sessions. The sessions are of 60 min and provided weekly. The STAIR sessions focus on improving emotional awareness and emotion regulation capacities, on the identification of emotionally charged trauma-generated interpersonal schemas that shape relationship expectations, and on improving interpersonal functioning through revision of and enhanced flexibility in interpersonal expectation and behaviors. NST is a modified version of prolonged exposure, which integrates and emphasizes the identification and appraisal of the interpersonal schemas embedded in the narrative. Trauma-related schemas emerging from the narrative are then contrasted with alternative formulations proposed in STAIR, which are reinforced by skills training that continues in this module. A detailed description of the STAIR/NST can be found in previous publications.^[11,12]

MEASURES

The Trauma Symptom Inventory Dissociation Subscale (TSI-DIS)^[13] contains 14 items that identify three dimensions of dissociation: four items concern depersonalization (e.g. “feeling disconnected from yourself”), five items concern derealization (e.g. “a feeling of being far away”), and five items concern amnesia or memory prob-

lems (e.g. “periods of memory loss,” “forgetfulness”). The measure assesses how much each of the symptoms bothered the participant in the past week with ratings anchored on a 5-point Likert scale ranging from 0 = not at all to 4 = extremely. The TSI-DIS score is the average of the items. A TSI-DIS score of 1.8 or higher has been identified as an indicator of risk for a dissociative disorder.^[13] The psychometric properties of this subscale in clinical samples are good to excellent.^[14] Coefficient α on the TSI-DIS for this sample was .83.

Clinician-Administered PTSD Scale (CAPS)^[15]: The CAPS is a clinician administered semistructured interview that evaluates the frequency and the intensity of each of the 17 symptoms of PTSD, on a 0–4 scale. The CAPS score is the sum of the frequency and intensity scores and can range from 0–136. The final section of the CAPS, which includes three “yes/no” questions concerning the presence of dissociation (derealization, depersonalization, and amnesia), was not administered. All queries referred to the traumas of childhood sexual and/or physical abuse.

STATISTICAL ANALYSIS

The outcome variables (TSI-DIS, CAPS) were assessed for normality of the distribution and for outliers at all time points: no deviations from the required parametric assumptions were observed. All analyses were performed on the intent to treat sample, that is, all randomized subjects, using all available data, with treatment groups defined as per the randomization. The main analyses were based on mixed effects models for longitudinal data, which provide valid inference under the missing at random mechanism. The outcomes at postrandomization time points were modeled as functions of time, treatment, and their interactions. All models adjusted for the baseline levels of the respective outcome. Statistical significance was judged at $\alpha = .05$. The models were fit using PROC MIXED SAS[®] software Version 9.2.

Dissociation as Outcome. Dissociation was assessed at baseline, every 2 weeks during treatment, at immediately posttreatment, and at 3- and 6-month follow-up. The effect of time on dissociation was assumed linear within each of the three time intervals: (a) phase 1 of treatment (8 weeks), (b) phase 2 of treatment (8 weeks), and (c) follow-up (6 months after treatment end). Piecewise linear regression for time was used consisting of three pieces: (a) from week 2 to week 8, (b) from week 8 to week 16, and (c) from posttreatment (week 16) to 6 months posttreatment. The moderating effect of baseline dissociation of the treatment effects over time was investigated by testing for significance of the interactions between baseline dissociation, treatment, and time for each of the three time intervals, and separate tests for significance of these three-way interaction terms were conducted using likelihood ratio tests. In consideration of their potential clinical utility, additional analyses on the moderating effect of baseline dissociation were conducted using a dichotomized version of the TSI-DIS

TABLE 1. Sociodemographic, trauma history, and diagnostic information of study participants categorized by low versus high dissociation ($n = 104$)

| Variable | Low dissociation (<1.8) ($n = 76$) | High dissociation (≥ 1.8) ($n = 28$) |
|--|---|--|
| Sociodemographic | | |
| <i>M (SD)</i> Age | 36.3 (9.7) | 36.7 (8.6) |
| Percentage of employed (full or parttime) | 65% | 64% |
| Percentage of married or living with someone | 36% | 39% |
| Trauma history (%) | | |
| Childhood sexual abuse ^a | 66 | 82 |
| Childhood physical abuse | 80 | 82 |
| Childhood sexual assault | 18 | 32 |
| Adulthood domestic violence | 57 | 68 |
| Adulthood sexual assault | 53 | 61 |
| Adulthood physical assault | 20 | 32 |
| Severity of PTSD | | |
| <i>M (SD)</i> on CAPS2 ^b | 58.3 (15.91) | 76.2 (19.39) |
| Current axis I comorbidities (%) | | |
| Major depressive disorder | 34 | 43 |
| Dysthymia | 18 | 32 |
| Generalized anxiety disorder | 36 | 50 |
| Panic disorder (W/Wo agoraphobia) ^c | 16 | 36 |
| Social phobia ^d | 20 | 46 |
| Specific phobia | 22 | 36 |
| Eating disorder (bulimia/anorexia/binge)* | 4 | 7 |
| Pain/somatiform/somatization/hypochondriasis disorder* | 1 | 0 |

Note: Axis I diagnosis obtained by SCID interview. Childhood and adulthood trauma history were obtained with the Child Maltreatment Interview Schedule^[16] and the Sexual Assault and Additional Interpersonal Violence Schedule.^[17]

*Combine frequencies for these Axis I disorders.

^a P -value for difference between high and low baseline dissociation groups is $P = .06$.

^b P -value for difference between high and low baseline dissociation groups is $P < .001$.

^c P -value for difference between high and low baseline dissociation groups is $P = .05$.

^d P -value for difference between high and low baseline dissociation groups is $P = .01$.

(<1.8 versus ≥ 1.8), defining low- and high-dissociative groups, respectively.

CAPS as Outcome. The CAPS was assessed at baseline, immediately posttreatment, 3- and 6-month follow-up, and the course of CAPS was considered linear over the period from immediately posttreatment to 6-month follow-up. To evaluate the potential moderating effect of baseline dissociation or mediating effects of midtreatment and posttreatment dissociation on the course of CAPS symptoms at follow-up, mixed effects models for longitudinal data, similar to those described above, were employed.

All models included random effects for the subjects' intercepts and slopes (three slopes for the dissociation outcome and one slope for the CAPS outcome).

RESULTS

SAMPLE CHARACTERISTICS

The mean baseline TSI dissociation score for the entire sample was 1.33 ($SD = 0.93$). Mean CAPS baseline score was 63.08 ($SD = 18.61$). The correlation between dissociation and CAPS scores at baseline was $r = .47$ ($P \leq .001$). Table 1 presents sociodemographic, trauma history, and diagnostic characteristics for the sample dichotomized into low- versus high-dissociation (TSI-DIS

<1.8 versus ≥ 1.8) subgroups. No differences in trauma history were observed except for childhood sexual abuse, which was marginally higher ($P = .06$) in the high-dissociative group. CAPS total score and presence of diagnoses of panic disorder (with or without agoraphobia) and social phobia were higher in the high-dissociation group.

COURSE OF DISSOCIATION DURING TREATMENT AND FOLLOW-UP

Continuous Measure of Dissociation. There was a main effect of baseline dissociation such that elevated baseline levels were associated with higher dissociation over the course of treatment including at treatment end and follow-up. However, this effect was modified by three-way interactions of baseline dissociation, treatment condition, and time ($P = .004$). Overall, at lower levels of dissociation (baseline dissociation = 0 or 1), there was little difference in the course of dissociative symptoms between the treatments; however, at higher levels (baseline dissociation = 2 through 4), STAIR/NST provided faster and greater reduction in dissociative symptoms across the course of treatment than either STAIR/SC or SC/NST (see Fig. 1).

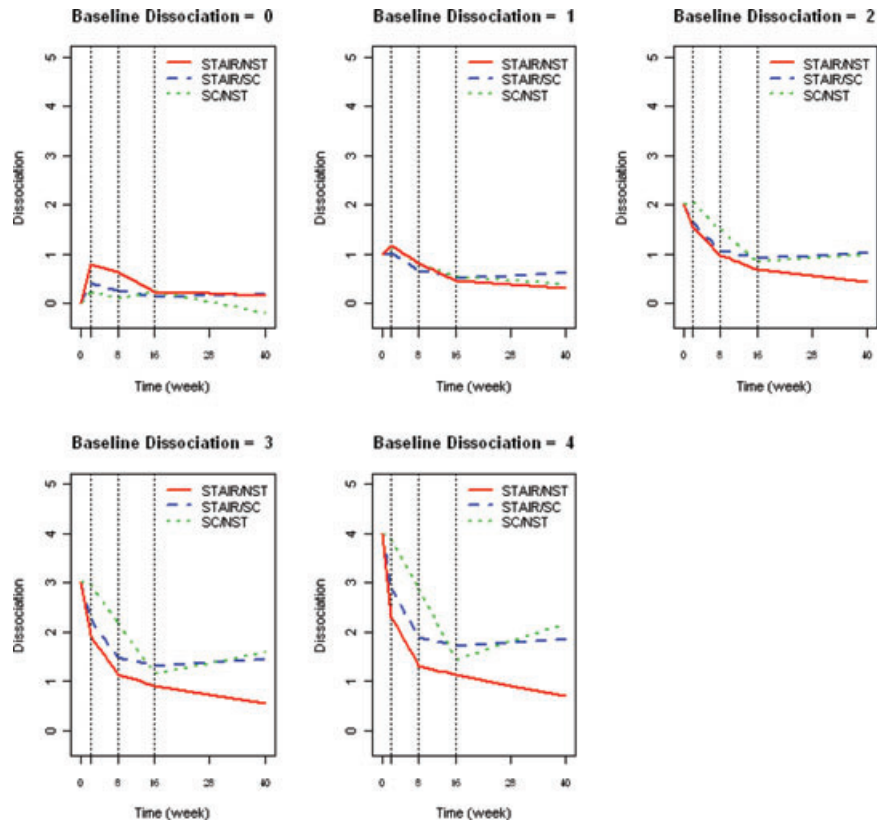


Figure 1. Course of dissociative symptoms measured by the Trauma Symptom Inventory Dissociation Subscale (TSI-DIS) for different levels of baseline dissociation severity.

Table 2 reports the model-based estimates of mean dissociation at midtreatment, immediately posttreatment, and at 6-month follow-up under each of the three treatment conditions for participants with the whole range of dissociation severity at baseline from 0 to 4. Inspection of the means at the final assessment point (6-month follow-up) for each level of baseline severity revealed the nature of the growing differential treatment effect. As baseline dissociation increased, the benefits of STAIR/NST remained relatively constant, whereas the benefits of the other two treatments were reduced as observed by the increasingly greater severity of dissociation symptoms at follow-up.

The results of the piecewise linear regression model are as follows. During phase 1, participants with higher baseline dissociation (levels 2 and higher) who were randomized to the treatment conditions that began with STAIR (STAIR/NST and STAIR/SC) improved more than those randomized to the treatment that began with supportive counseling (SC/NST). This differential improvement occurred by week 2 and was maintained until the end of phase 1 (session 8). This difference in means was significant for values of baseline dissociation higher than 2 (P -values ranged from $\leq .05$ to $\leq .0001$).

During phase 2, high-dissociative participants (those with values of baseline dissociation at levels of 2 or higher) showed rapid reduction during the NST mod-

ule of SC/NST (P -values ranged from $\leq .05$ to $\leq .001$). Those in STAIR/NST and STAIR/SC did not show any change but rather maintained the reduction in dissociative symptoms achieved during phase 1. At the end of phase 2 (week 16), there were no significant differences in mean dissociation scores across the three treatment conditions.

During the follow-up period, however, participants who began treatment with dissociation levels of 2 or more and who were randomized to STAIR/NST showed a trajectory of continued improvement over the 6-month follow-up, those randomized to STAIR/SC maintained the same level of improvement, and those randomized to SC/NST showed significant deterioration from post-treatment. At the 6-month follow-up, at baseline dissociation levels of 2, 3, and 4, mean scores during follow-up for STAIR/NST had significantly improved (P -values ranged from $\leq .05$ to $\leq .001$), those for STAIR/SC stayed the same, those for SC/NST has significantly worsened (P -values ranged from $\leq .05$ to $\leq .001$). At the 6-month follow-up, participants in STAIR/NST had lower dissociation scores than those in either of the two conditions; this difference was significant for values of baseline dissociation higher than 2.

Cutoff Measure of Dissociation. Similar results were observed when a dichotomized version of dissociation was used in the model (TSI-DIS < 1.8 versus

TABLE 2. Model-based means and standard errors for dissociation at midtreatment, posttreatment, and 6-month follow-up for each treatment condition by level of baseline dissociation

| | STAIR/NST | | STAIR/SC | | SC/NST | |
|---------------------------|-----------|-----|----------|-----|--------|-----|
| | Mean | SE | Mean | SE | Mean | SE |
| Midtreatment | | | | | | |
| Baseline dissociation = 0 | 0.75 | .18 | 0.35 | .17 | 0.19 | .17 |
| Baseline dissociation = 1 | 1.05 | .11 | 0.90 | .11 | 1.03 | .11 |
| Baseline dissociation = 2 | 1.36 | .13 | 1.45 | .11 | 1.87 | .13 |
| Baseline dissociation = 3 | 1.67 | .23 | 2.00 | .17 | 2.85 | .22 |
| Baseline dissociation = 4 | 1.98 | .34 | 2.55 | .25 | 3.56 | .32 |
| Posttreatment | | | | | | |
| Baseline Dissociation = 0 | 0.24 | .21 | 0.12 | .19 | 0.24 | .23 |
| Baseline dissociation = 1 | 0.46 | .12 | 0.52 | .12 | 0.54 | .14 |
| Baseline dissociation = 2 | 0.68 | .14 | 0.92 | .12 | 0.84 | .13 |
| Baseline dissociation = 3 | 0.90 | .25 | 1.32 | .19 | 1.15 | .23 |
| Baseline dissociation = 4 | 1.13 | .38 | 1.72 | .28 | 1.45 | .35 |
| 6-month follow-up | | | | | | |
| Baseline dissociation = 0 | .17 | .30 | .19 | .26 | 0.20 | .33 |
| Baseline dissociation = 1 | .30 | .17 | .60 | .16 | 0.39 | .20 |
| Baseline dissociation = 2 | .43 | .20 | 1.02 | .17 | 0.99 | .19 |
| Baseline dissociation = 3 | .56 | .35 | 1.43 | .27 | 1.58 | .30 |
| Baseline dissociation = 4 | .69 | .53 | 1.85 | .40 | 2.18 | .46 |

≥1.8). Below 1.8, the course and outcome for dissociation did not differ by treatment condition. However, at or above 1.8, the following was observed: (a) by week 2 of phase 1, the dissociative symptoms scores for STAIR/NST and STAIR/SC were reduced more than for SC/NST and this difference remained during the entire phase 1 treatment, (b) during phase 2, dissociative symptoms scores for SC/NST reduced more rapidly than for the other two treatments, (c) during the follow-up phase, the STAIR/NST trajectory showed continuing reductions in dissociation, STAIR/SC showed no change from posttreatment, and the SC/NST trajectory showed a loss of improvement from posttreatment.

EFFECT OF DISSOCIATION ON THE COURSE OF PTSD SYMPTOMS

Baseline Dissociation. There was a treatment × time effect ($P = .001$) where the three treatments differed with respect to trajectories of PTSD symptoms such that (1) participants randomized STAIR/NST and STAIR/SC had lower mean CAPS scores at posttreatment than those randomized to treatment SC/NST and (2) during follow-up, participants in STAIR/NST continued to improve, those randomized to STAIR/SC did not change, and those randomized to SC/NST showed a worsening of symptoms. Different baseline levels of dissociation did not change this pattern. STAIR/NST uniformly provided greater benefits than the other two treatments at high as well as low baseline levels of dissociation. Figure 2 depicts the course and outcome of PTSD for the three treatment conditions at each level of baseline dissociation (0 through 4). At every level of baseline dissociation, participants in STAIR/NST com-

plete treatment with CAPS scores lower than those in the other two treatments.

Midtreatment and Posttreatment Dissociation. We explored whether dissociation scores at midtreatment or posttreatment affected PTSD outcome. No interaction effects were obtained with midtreatment dissociation as a predictor of PTSD at post through follow-up. For posttreatment analyses, there were no dissociation scores higher than 2.5, thus we estimated means and slopes only for dissociation levels 0 through 2. The models for CAPS at 3- and 6-month follow-up (adjusting for immediately posttreatment CAPS), conditional on posttreatment dissociation, revealed a significant treatment-by-dissociation interaction (see Fig. 3) ($\chi^2 = 8.03$, $df = 2$, $P = .01$). At levels of posttreatment dissociation 1 and 2, STAIR/NST and STAIR/SC were significantly better than SC/NST (P -values $\leq .03$), and STAIR/NST was superior to STAIR/SC (P -values $\leq .03$). As depicted in Figure 3 during the posttreatment period, PTSD CAPS score improved for STAIR/NST, stayed the same for STAIR/SC, and got worse for SC/NST.

EFFECT OF DISSOCIATION ON TREATMENT DROPOUT

A logistic regression analysis was conducted to evaluate whether treatment condition, level of baseline dissociation, defined categorically (1.8 versus ≥ 1.8), and their interaction were predictive of treatment dropout. Consistent with a previous report,^[11] treatment condition was associated with dropout ($\chi^2 = 7.80$, $df = 2$, $P = .02$) such that the proportion of dropouts was smaller in STAIR/NST (15%) as compared to SC/NST (39%) and that for STAIR/SC (26%) fell in the middle. Baseline dissociation was also associated with dropout ($\chi^2 = 4.50$, $df = 1$, $P = .02$) such that those with *high* as

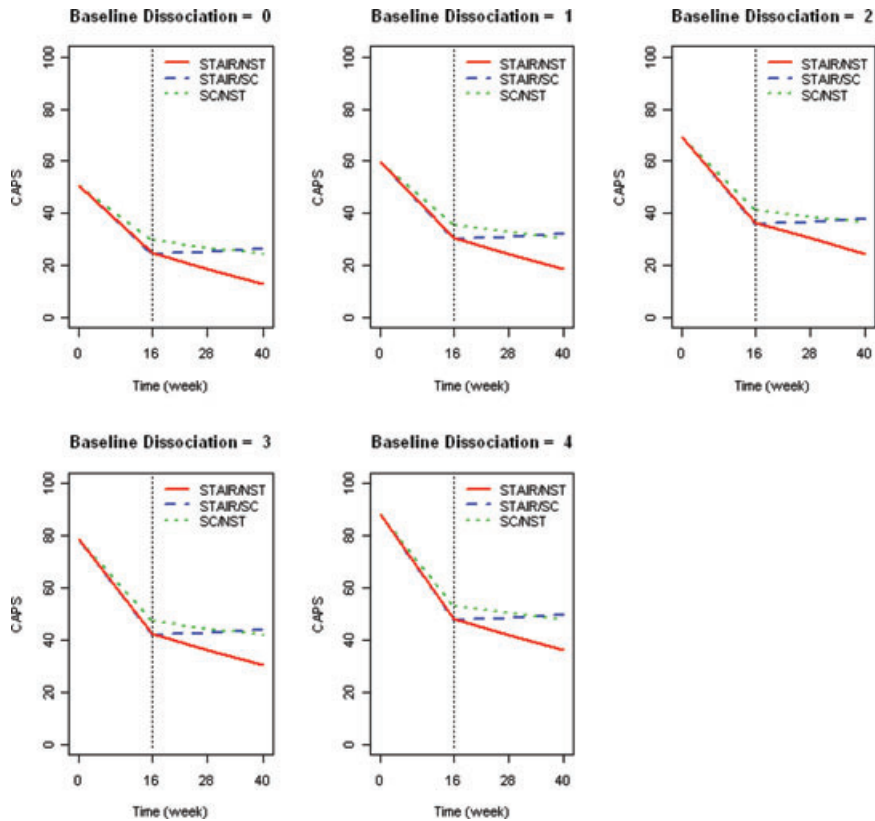


Figure 2. Course of posttraumatic stress disorder (PTSD) symptoms measured by Clinician-Administered PTSD Scale (CAPS) for different levels of baseline dissociation severity.

compared to low dissociation were *less* likely to dropout. The interaction of treatment condition and dissociation was not significant (8% versus 20%).

DISCUSSION

Level of dissociation was differentially predictive of treatment outcome for both dissociative and PTSD symptoms. Among participants with high levels of dissociation, STAIR/NST was associated with better outcomes regarding dissociative symptoms as compared to the other two treatment conditions whereas among participants with low dissociation, the three treatment conditions produced equally good outcome. In regard to PTSD symptom outcomes, STAIR/NST provided uniformly superior results across all levels of baseline dissociation. However, posttreatment dissociation was a differential predictor of outcome such that among participants ending treatment with high dissociation, STAIR/NST continued to provide positive change during the follow-up period while this was not the case for the other two treatment conditions. The pattern of differences in the trajectory of posttreatment symptoms observed among participants with high dissociation across the three conditions was the same for both dissociation and PTSD symptoms. Specifically, from posttreat-

ment through follow-up, STAIR/NST was associated with continued reduction of symptoms posttreatment, STAIR/SC with maintenance of gains, and SC/NST with deterioration of gains.

Analyses of piecewise changes in slope may provide some insight into these differential effects and the psychological mechanisms underlying the changing course of dissociation across the different treatments and their components. The biweekly session data on dissociative symptoms indicate that among high dissociators, phase 1 STAIR treatment (in STAIR/NST and STAIR/SC) produced significant symptom reduction while phase 1 of SC/NST did not. In contrast, phase 2 of SC/NST was characterized by a significant and steep reduction in symptoms but no changes occurred in phase 2 the other two conditions. Thus, by the end of treatment, the dissociation scores among the high-dissociative participants were essentially equivalent across the three conditions, suggesting that the therapies were of equal effectiveness. However, as noted above, striking differences occurred during the follow-up phase. The reduction in dissociation during the skills training in STAIR/SC was maintained during the second phase of treatment and follow-up suggesting that the skills training provided a reduction in dissociation that was relatively stable. The reduction obtained in dissociation during the narrative

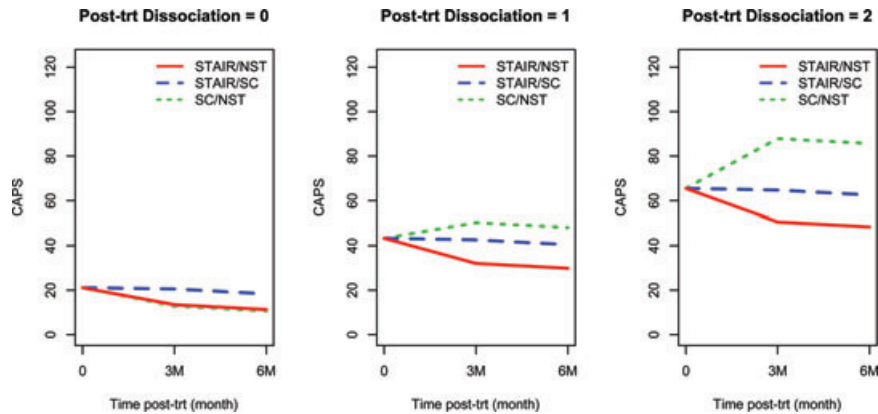


Figure 3. Posttreatment dissociation as a predictor of PTSD symptoms during follow-up: each panel corresponds to different levels of baseline dissociation.

work in the SC/NST was rapid and steep but it was not stable or enduring, as demonstrated in the loss of gains in the follow-up period. STAIR/NST provided benefits in the follow-up period that exceed those observed STAIR/SC, suggesting that the present of NST was contributing factor.

We speculate, consistent with theory, that the reduction of dissociative symptoms preceding the narrative work in STAIR/NST may allow for more effective engagement of the cognitive and affective processes assumed to be involved in the reorganization and reappraisal of trauma memories, yielding changes in the trauma memory that are more stable and enduring. In addition, the effective management of trauma symptoms learnt from the skills training and a revised view about self and the world derived from the narrative work may provide mutual positive reinforcement. That is, a dynamic may be at play where the effective use of skills reinforce changed beliefs and, conversely, changed beliefs support use of skills, leading to continued improvement posttreatment. In contrast, SC/NST did not provide skills training, potentially leaving vulnerable individuals at greater risk for experiencing difficulties in managing ongoing stressful life circumstances. This, in addition to a potentially less well-elaborated and stable revision of the trauma memory, could result in a reversion to old beliefs and a downward symptom spiral during times of distress.

Certain questions about the results of the study bear consideration. It is notable that in regard to PTSD, participants with both high and low baseline dissociation had better outcomes in STAIR/NST as compared to the other two treatment conditions. It may be that in addition to dissociation, there are other significant symptoms and problems that interfere with PTSD reduction, which STAIR/NST addresses. Nevertheless, results indicate that individuals with high levels of dissociation fare better in regard to their dissociative symptoms in STAIR/NST. In addition, it appears that level of dissociation at posttreatment may be predictive of how individuals fare in regard to PTSD during follow-up and

that there are differential outcomes depending on the type of treatment that has been completed. It is also interesting to note that individuals with high as compared to low dissociation were less likely to dropout of treatment. We surmise that the presence of a clinical research environment in which program staff are knowledgeable about dissociation, where individuals with dissociation are welcome, and where the treatments include focus on these problems, may engage dissociative trauma patients for whom few alternative services may be available.

Some study limitations and cautions are noted. The study sample size is relatively small. Although the significance of the results generated in the estimating techniques used in this study take into account sample size, replication with a larger sample is important to evaluate the reliability of the findings. The study concerns individuals with a primary disorder of PTSD and the dissociation measured in this study refers to derealization, depersonalization, and amnesia. Thus, generalizations about the effectiveness of the above treatment for patients with more severe or different forms of dissociation (such as dissociative identity disorder and dissociative disorders not otherwise specified) cannot be made.

More research is necessary to provide a better understanding of dissociation and optimal treatments for the full spectrum of trauma-related dissociative disturbances. Future research directions might include the use of dissociation measures that assess symptoms such as the identity disturbances seen in the most severely dissociative patients, the development and empirical evaluation of phase-based therapies or other types of therapies that address the core disturbances in these populations, and the monitoring of symptoms during treatment and follow-up to assess the course and durability of symptom improvement.

This study makes a contribution to the dissociation and trauma therapy literature. The differential results observed among the treatments depending on dissociation at baseline as well as at posttreatment suggest the potential clinical utility of identifying a dissociative subtype of PTSD and the potential benefits of

providing sequenced or phase-oriented treatment approaches to these individuals. The availability of the bi-weekly session data on dissociation has provided some insight into the change processes that occur during the course of therapy. Lastly, the models predicting outcome using dissociation in a dichotomous fashion produced the same pattern of results, suggesting the potential utility of this or other types of cutoff scores in clinical settings.

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