
ORIGINAL RESEARCH—PSYCHOLOGY

Effects of Expressive Writing on Sexual Dysfunction, Depression, and PTSD in Women with a History of Childhood Sexual Abuse: Results from a Randomized Clinical Trial

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ABSTRACT

Introduction. Women with a history of childhood sexual abuse (CSA) have high rates of depression, posttraumatic stress disorder, and sexual problems in adulthood.

Aim. We tested an expressive writing-based intervention for its effects on psychopathology, sexual function, satisfaction, and distress in women who have a history of CSA.

Methods. Seventy women with CSA histories completed five 30-minute sessions of expressive writing, either with a trauma focus or a sexual schema focus.

Main Outcome Measures. Validated self-report measures of psychopathology and sexual function were conducted at posttreatment: 2 weeks, 1 month, and 6 months.

Results. Women in both writing interventions exhibited improved symptoms of depression and posttraumatic stress disorder (PTSD). Women who were instructed to write about the impact of the abuse on their sexual schema were significantly more likely to recover from sexual dysfunction.

Conclusions. Expressive writing may improve depressive and PTSD symptoms in women with CSA histories. Sexual schema-focused expressive writing in particular appears to improve sexual problems, especially for depressed women with CSA histories. Both treatments are accessible, cost-effective, and acceptable to patients. **Meston CM, Lorenz TA, and Stephenson KR. Effects of expressive writing on sexual dysfunction, depression, and PTSD in women with a history of childhood sexual abuse: Results from a randomized clinical trial. J Sex Med 2013;10:2177–2189.**

Key Words. Childhood Sexual Abuse; Sexual Satisfaction; Sexual Function; Expressive Writing; Depression; Sexual Dysfunction

Introduction

It is not surprising that survivors of childhood sexual abuse (CSA) report significant problems in adulthood with intimate relationships, particularly sexual relationships [1].¹ Women who report histories of CSA have significantly higher rates of sexual dysfunction than either community or clinical

samples [2,3]. Survivors of CSA also report significantly lower sexual satisfaction and higher sexual distress [4]. Beyond the impact on quality of life, sexual problems contribute to relationship distress [1] and have been implicated in the high divorce rates seen in CSA survivors [5].

What *is* surprising is that, despite the prevalence of CSA (over 66,000 reports of CSA were substantiated in 2009 [6], with many more cases that go unreported [7]), there are few treatments for sexual dysfunction that have been empirically validated for adult survivors. Treatments for sexual

¹Although both males and females may experience CSA, the vast majority of cases involves girls and, as such, the majority of research and clinical focus has been on female survivors of CSA.

problems that were developed in women *without* abuse histories have shown inconsistent results in women *with* abuse histories. For example, traditional sex therapy techniques such as sensate focus are overwhelming for many women with CSA histories [8]. Similarly, pharmacological treatments that improve sexual response in women without CSA histories, such as sildenafil, do not improve and, in some cases, may even worsen sexual problems in women with CSA histories [9]. This may be because for survivors of CSA, the sexual response can be a powerful reminder of the trauma.

It is often suggested that psychopathology such as depression or traumatic stress related to CSA should be resolved before addressing sexual problems. For example, from a prominent workbook for CSA-related therapy issues: “it is recommended that therapists address more general effects of sexual abuse, such as depression, anger, self-blame, self-destructive behaviors, and trust concerns, before doing work on sexual problems” [10]. Others have posited models in which psychopathology mediates the relationship between CSA survivorship and sexual problems [11,12], which in turn implies resolution of psychopathology would lead to a resolution of sexual problems. Considering that women with CSA histories are 1.3–2.2 times more likely to report major depression or other mood disorders and 2.1–2.6 times more likely to report posttraumatic stress disorder (PTSD) than women who have never been sexually abused [13], this seems reasonable.

However, sexual problems are often present in CSA survivors even in the absence of symptoms of depression or traumatic stress [14,15] and may persist even after resolution of psychopathology through successful treatment [16]. For example, Rieckert and Möller [15] conducted a trial of group rational emotive behavior therapy for 42 women with CSA histories. After 10 weekly sessions, the participants in the treatment group moved from the severe depression range of the Beck Depression Inventory to the normal range; this improvement was maintained at the 8-week follow-up. However, participants who received treatment did not differ from control participants on a validated measure of sexual function and satisfaction. Similarly, Classen et al. [17] studied the effects of a trauma-focused group therapy protocol in 166 CSA survivors. Intent-to-treat analyses revealed that after 24 weekly sessions, participants in the treatment condition had significantly reduced PTSD severity relative to a waitlist

control but showed no difference in sexual concerns. From these results, it is clear that sexual problems are often distinct from psychopathology and may require separate clinical focus.

To that end, there have been only three peer-reviewed reports on psychotherapy with adult survivors of CSA that have demonstrated improvements on a validated measure of sexual function. Hazzard, Rogers, and Angert [18] found that for the 102 participants who completed a full year of weekly process-oriented group therapy sessions, there was a significant decrease in sexual avoidance and sexual dysfunction as per the Sexual Symptom Checklist; however, as this study did not include a control condition, it is difficult to know the specific efficacy of the treatment. Hébert and Bergeron [19], on the other hand, did include a waitlist control in their trial of semi-structured group therapy for CSA survivors. A total of 41 women completed 15–17 weeks of 3-hour sessions that included discussion, relaxation techniques, and art therapy. Treatment completers reported significantly decreased sexual anxiety and discomfort about their sexuality as measured by the Multidimensional Sexual Self-Concept Scale, whereas participants in the control condition remained stable. Treatment effects were maintained at a 3-month follow-up. While promising, the treatment was not standardized and thus difficult to replicate. Finally, Brotto, Basson, and Luria [20] conducted an uncontrolled trial of a manualized, three-session psychoeducation intervention for sexual desire and arousal disorders in 15 women. In a post hoc analysis, they found that the eight women in the therapy group with a history of CSA improved significantly in measures of sexual function and sexual distress on the Female Sexual Distress Scale and the Female Sexual Function Index, whereas the 17 women without such a history did not show any significant change. With so few participants and an exploratory post hoc analysis, the authors cautioned that these results should be treated as preliminary. In short, while there is some evidence that psychotherapy may improve sexual problems in women with CSA histories, there is little direct evidence.

One common theme in these few studies reporting improvements in sexual function in CSA survivors is a focus on the impact of CSA on women’s thoughts, beliefs, and feelings related to sexuality. In other words, these treatments attempted, directly or indirectly, to address negative sexual schema in women with CSA histories. Sexual schemas are cognitive structures that give

meaning and order to thoughts and feelings about oneself as sexual being and sexuality in general. Sexual schemas help guide representations of memories of sexual experiences, plan sexual behavior, and interpret responses to sexual stimuli [21]. The cornerstones of schema are beliefs, which translate emotionally significant life events and social learning into organizing principles for information about the self, others, and the world [22]. These principles operate at a preconscious level, orienting attention toward or away from sexual stimuli, and at a conscious level, directing sexual attitudes and behaviors [23]. Sexual beliefs, and the corresponding schema, may be positive (e.g., "I am a passionate woman") or negative ("I am an unloving woman"). Positive sexual schemas regarding the self, or sexual self-schema (SSS), are associated with higher sexual satisfaction [24], whereas negative SSS are associated with greater sexual distress and dysfunction [25]. Negative SSS may be a diathesis or vulnerability factor for sexual dysfunction [26].

Women with CSA histories have significantly more negative SSS, which likely contribute to sexual problems [27]. At an unconscious level, women with CSA histories are less likely to associate sexual stimuli with positive emotions than women without CSA histories [23,28–30]. At a conscious level, women with CSA histories are more likely to endorse SSS that cast themselves as immoral or irresponsible [31] and less likely to endorse romantic or passionate SSS [27,32,33]. Low endorsement of positive SSS has been found to mediate negative affect during sex for CSA survivors independently of depression and anxiety symptoms [27].

One powerful yet simple way to impact schema is through writing. Constructing a written narrative about an emotional event helps to integrate that experience into existing schema and highlights the meaningful aspects of the experience to help construct new schema [34]. Writing about traumatic events has been shown to help individuals make meaning of these experiences, adopt less aversive appraisals of the event, and process the experience in a larger context [35]. Such cognitive processing through writing may help to improve implicit attitudes toward the self, and reorganize self-schema [36].

Of particular promise is expressive writing, a structured writing paradigm in which people write for a specified amount of time, generally from 15–45 minutes, during which they are encouraged to express their deepest thoughts and feelings as

freely as possible [34]. The assigned writing topic is generally a stressful, emotional, or traumatic event [34], but writing about other topics such as body image [36], adjustment to college [37], and sexual orientation [38] have also been explored. Expressive writing has been demonstrated to improve psychological and physical health in a wide variety of settings and populations. Several meta-analyses have estimated effect sizes ranging from $d = 0.15$ [39] to $d = 0.47$ [40] for positive outcomes ranging from reduced medical care usage to posttraumatic growth.

Specifically, expressive writing has been shown to improve both depression and PTSD [41]. Improvements due to writing have been linked to increased cognitive processing, above and beyond expression of emotions [42]. Writing leads to increased use of insight and causation-related words [43], which are associated with the construction of a cognitive structure [44]. Writing about traumatic experiences has been shown to be as effective as cognitive therapy in improving trauma-related beliefs, including beliefs about intimacy, in female survivors of interpersonal violence [45].

To that end, expressive writing has been tested as a treatment for the psychological sequelae of intimate violence against women, although results have been mixed. One study investigating undergraduate women with a history of sexual assault found that trauma-focused writing was not superior to writing about trivial topics in improving PTSD symptoms [46]. However, as this was not a clinical population, symptoms of PTSD were low at baseline and thus had little room for further improvement. Another study of adult survivors of CSA found that expressive writing did not improve depressive symptoms [47]. The authors noted that while their paradigm involved sessions on consecutive days, meta-analyses have shown that time between sessions moderates the benefits of expressive writing [40], and thus there may not have been sufficient time for participants to process the content of their writing between sessions. In contrast to these two studies, Koopman et al. [48] studied a writing treatment spaced out over several weeks in a nonstudent sample of women with a history of intimate partner violence. There was a significant interaction of treatment and level of depression at intake, such that women who entered the study with a high level of depression gained the most benefit in the expressive writing condition, whereas women with low levels of depression or women in the control condition did

not benefit. These results were promising and indicated that for those women with significant psychological distress related to sexual abuse, expressive writing may confer a benefit. No study has, to date, investigated the impact of expressive writing on sexual problems in any population.

In the current study, we investigated a writing-based treatment for adult survivors of CSA. Given that writing has been shown to affect SSS and that negative SSS are associated with sexual problems in women with a history of CSA, a writing intervention that specifically targets sexual schema may be particularly useful in addressing sexual difficulties in this population. To that end, we developed a treatment designed to direct participants' focus during writing to the impact that sexual abuse may have had on their sexual schema, particularly SSS. Although written and verbal disclosure appear to have similar benefits in terms of psychological and physical health outcomes [49], writing uniquely offers privacy, which may make it more acceptable for trauma survivors. Moreover, writing as a treatment is simple to administer and cost-effective [50] as it requires minimal input from skilled personnel [51].

The purpose of the present study was twofold. First, we aimed to test a treatment known to improve depression and PTSD (trauma-focused writing) for its effects on sexual problems in CSA survivors. Second, we compared the effects of this active comparator to a novel focus for expressive writing: sexual schema. We had the following hypotheses:

1. Women with CSA histories engaging in both trauma-focused and sexual schema-focused expressive writing would exhibit improved levels of depression and PTSD.
2. Both expressive writing interventions would improve sexual dysfunction in women with CSA histories, but sexual-schema focused expressive writing would improve sexual dysfunction of CSA survivors to a greater extent than would trauma-focused writing.

Method

Participants

Recruitment

We recruited participants via newspaper advertisements and posts on community websites advertising a treatment study for women who had experienced CSA. Interested women called the lab

where they were given more information about the study and screened for inclusion and exclusion criteria (see below). Following determination of eligibility for the study, participants were scheduled for an initial intake with an assessor. All study procedures were approved by the Institutional Review Board of the University of Texas at Austin from 2004 to 2013 and registered on ClinicalTrials.gov (identifier NCT01803802).

Inclusion and Exclusion Criteria

Women entering the trial had to report at least one involuntary sexual experience, defined as "unwanted oral, anal, or vaginal intercourse, penetration of the vagina or anus using objects or digits, or genital touching or fondling" before age 16 and no less than 2 years prior to enrollment. To appropriately measure sexual functioning and distress, participants were required to either be currently sexually active or be cohabiting in a potentially sexual relationship. Additionally, they had to report sexual dysfunction, distress, or low sexual satisfaction. The lower age limit was 18; there was no upper age limit.

Women were excluded if they had experienced a traumatic event in the previous 3 months, been a victim of sexual abuse in the past 2 years, or had been diagnosed with a psychotic disorder in the previous 6 months. Other psychiatric conditions were permissible so long as participant did not report significant suicidal or homicidal intent at intake. Participants could not be currently receiving psychotherapy for sexual or abuse-related concerns; however, participants could be receiving psychoactive medications if they had been stabilized on those medications for at least 3 months. Participants were excluded if they reported use of illicit drugs but were not excluded for alcohol use. Women in currently abusive relationships were also excluded.

Sample Characteristics

The final sample used in analyses included 91 women with a history of CSA (see Figure 1). About half of the participants (59%) had been abused by a family member, and the majority (92%) had at least one penetrative experience. The majority of participants was white people (64%), married or in a committed relationship (71%), and had completed at least some college education (78%). Full demographic characteristics are presented in Table 1, and more information on retention is available at <http://bit.ly/wKzXT8>.

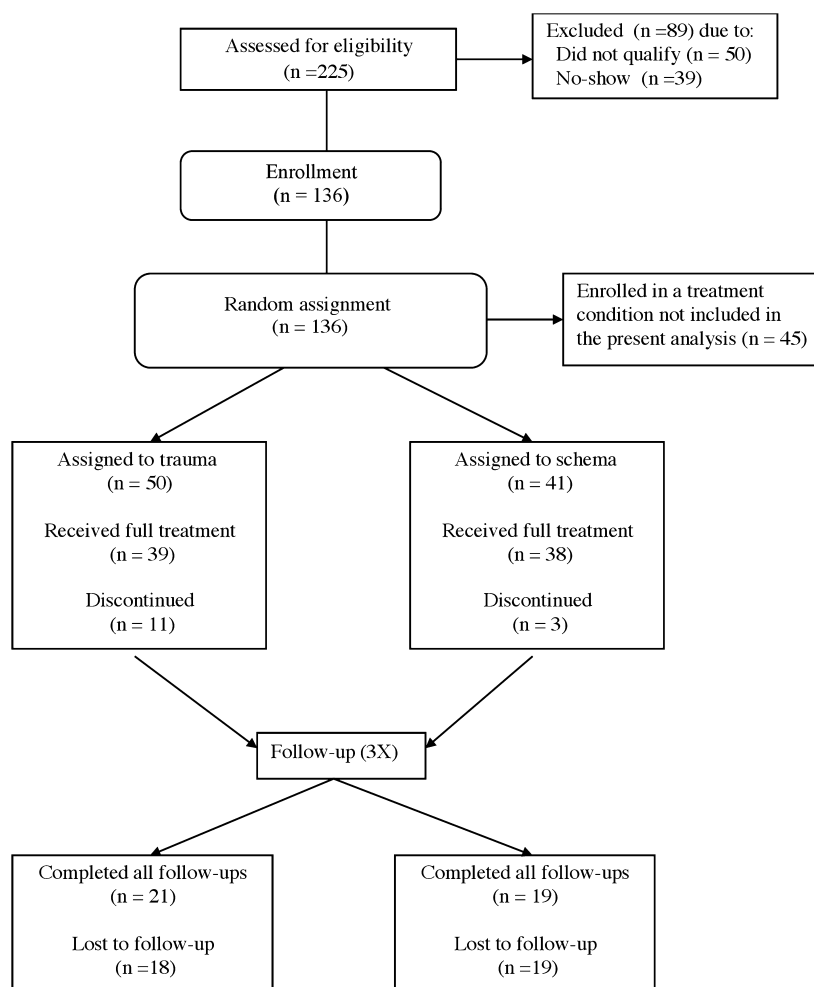


Figure 1 Participant flowchart

A detailed analysis of predictors of dropout is available elsewhere [52].

Procedure

Assessment Sessions

Participants completed five 2-hour assessment sessions: pretreatment, posttreatment, 2 weeks follow-up, 1 month follow-up, and 6 months follow-up. Participants met with the same assessor at each assessment session; there were three female assessors. At the pretreatment session, participants were oriented to study procedures and given information sufficient to provide informed consent. They then completed clinical interviews and questionnaires on sexual dysfunction, depression, and PTSD (see Measures section below). Posttreatment sessions included the same assessments as well as questions regarding perceptions of the treatment. Participants were compensated \$70 for

completing each assessment session; they were not compensated financially for attending treatment sessions.

Treatment Sessions

There were four study therapists, all women with master's degrees in psychology. Following their pretreatment assessment session, participants were scheduled to meet with a study therapist. During their first treatment session, the therapist offered a brief rationale appropriate to their condition. Each participant was informed that no one would read her writing until the study was completed. The therapist then administered a brief check-in form that asked the participant about their suicidal ideation, trauma-related distress, and use of coping resources since their last visit to the lab. After addressing any issues from the check-in form, therapists oriented the participant to the writing task for that day, reading the prompt with the

Table 1 Participant characteristics in final sample

Categorical variables	n	%
Education		
Less than high school/GED	3	3.3
Completed high school/GED	13	14.3
Some college/college degree	59	64.8
Advanced degree	12	13.2
Data missing	4	4.4
Relationship status		
Single, not dating	12	13.2
Single, dating	10	10.9
In a committed relationship	38	41.8
Married	26	28.6
Data missing	5	5.5
Ethnicity		
Caucasian	58	63.7
Hispanic/Latina	21	23.1
African-American/Black	6	6.6
Asian-American	4	4.4
Other	7	7.7
Data missing	4	4.4
Current diagnoses		
Depression		
Yes	15	16.5
Subclinical	3	3.3
No	66	72.5
Data missing	1	1.1
PTSD		
Yes	19	20.9
Subclinical	17	18.7
No	47	51.6
Data missing	2	2.2
Abuser relationship		
Family	54	59.3
Non-family	31	34.1
Data missing	6	6.6
Use of psychotropic medications		
No medication reported	65	71.4
Antidepressant(s) only	7	7.7
Antidepressant(s) and other psychoactive medications	12	13.2
Other psychoactive medication (e.g., sleep aids)	7	7.7
Continuous variables		
	M	SD
Sexual orientation	2.52	1.854
Age	33.7	10.294

Note: The sexual orientation scale is scored such that 0 indicates exclusive heterosexual attraction and behavior and 6 indicates exclusive homosexual attraction and behavior. This mean indicates most of the sample indicated predominantly heterosexual attraction but at least some homosexual experience or interest. Approximately 32% reported a 0, or exclusively heterosexual attraction and experience, whereas 2% reported a 6, or exclusively homosexual attraction and experience.

M = mean; SD = standard deviation

participant. Participants typed their essays on a computer into a word document identified by their unique code and session number.²

To ensure privacy, participants were left alone to write for 30 minutes, and they were instructed

²If uncomfortable using a computer, participants were given the option of writing by hand and putting their writing into sealed envelopes. Seven participants chose this option.

to save and close their writing before the therapist returned to the room. Furthermore, participants were given the option of deleting their writing before saving and closing it (so that the therapist would not know if they had saved text or not), or removing their data from analyses after their participation; no participant chose this option.

Following the writing assignment, the therapist briefly evaluated the participant for significantly increased psychological distress related to their writing or other signs of increased risk of harm to self or others. Safety plans were created as needed, including discussions of means of support and coping. Women were allowed to leave following this risk assessment or to spend the remainder of the hour talking with the therapist about their writing. A very small minority (approximately 5%) of women consistently chose not to stay following the risk assessment. Therapists were not permitted to conduct any other therapeutic technique (e.g., cognitive restructuring).

Each additional session followed the same format, with a check-in before and after the 30-minute writing period. Treatment was paced such that participants were scheduled for no more than two sessions per week and never on consecutive days. Most women chose to meet weekly.

At the end of the fifth treatment session, participants were scheduled for a posttreatment follow-up with the same assessor who completed their intake. Following completion of the study, all essays were examined by research assistants for content relevant to the treatment prompts (including ensuring that women in the trauma condition wrote about their index sexual trauma); however, no essay was judged to be significantly off-prompt [28,53].

Conditions

In keeping with ethical and methodological guidelines suggested for randomized clinical trials of psychotherapeutic interventions [54],³ we compared our experimental treatment (sexual schema-focused expressive writing) with a known active treatment (trauma-focused expressive writing).

Sexual Schema-Focused Condition. The schema condition prompts were developed to focus par-

³Noninferiority designs, in which an experimental treatment is compared against an active comparator, have been recommended by the Food and Drug Administration and the American Psychological Association for trials in which the safety, cost, and availability of the treatments are negligibly different.

ticipants' attention to the impact of their sexual abuse experiences on their thoughts, feelings, and beliefs about sexuality (see <http://bit.ly/wKzXT8> for full text of all prompts). The first session prompt encouraged women to write about how their sexual abuse may have affected their beliefs about themselves, sexual partners, or sexuality in general. The second session prompt expanded on the first, asking women to consider the evidence for and against their beliefs about sex and their sexuality. The third and fourth session prompts asked women to consider their reasons for maintaining their sexual beliefs and what would have to change in their lives to change their beliefs. The final session prompt encouraged women to write about their goals for their future sexual life and to focus on their progress and strength.

Trauma-Focused Condition. The trauma condition was adapted from the standard expressive writing paradigm for this population. The first treatment session prompt encouraged participants to write their deepest thoughts and feelings about a trauma that has affected them, considering how their trauma impacted safety, trust, power and control, and esteem and intimacy (beliefs commonly impacted following sexual violence [45,55]). Sessions two through four were focused on considering maladaptive beliefs related to the traumatic experience. The final session prompt directed women to consolidate what they learned during the previous sessions and to outline goals for the future.

Measures

Sexual Functioning Interview. Sexual function was assessed with a structured clinical interview following the criteria for Female Sexual Dysfunction (FSD) presented in the Diagnostic and Statistical Manual Fourth Edition, Text Revised (DSM-IV-TR [56]). This interview assessed symptoms of hypoactive sexual desire disorder (HSDD), sexual aversion disorder, female sexual arousal disorder (FSAD), female orgasm disorder (FOD), vaginismus, and dyspareunia. Each item included an assessment of presence or absence of each of the symptoms associated with the dysfunction (e.g., "Do you have a persistent or recurrent lack of sexual thoughts, fantasies, daydreams, or desire for sexual activity?"), as well as distress related to the symptom, time of onset (lifelong or acquired), and situations in which the symptom was experienced (situational or generalized). This interview has been validated and used in previous studies to

diagnose FSD [57–59]. Participants were considered "recovered" when they no longer met criteria for this disorder.

Psychopathology Measures

Clinician-Administered PTSD Scale (CAPS-1). Symptoms of PTSD within the last month were assessed with the CAPS-1 [60]. We asked about the most severe trauma experienced (as identified by the Trauma History Questionnaire). As recommended in the CAPS manual, we considered symptoms as present if the participant scored at least 1 for frequency (i.e., once or twice in the past month) and at least 2 for intensity (i.e., moderate intensity). A total severity score of 45 or more is considered indicative of clinically relevant PTSD [61]. Assessors were trained on the CAPS with the standardized training video developed by the Department of Veterans Affairs [62] and had their assessments reviewed by an experienced psychometrician. If participants did not report at least one symptom in each cluster (re-experiencing, hypervigilance, and avoidance), they were classified as "subclinical."

Structured Clinical Interview for the DSM-IV-TR. Current depression and history of major depressive episodes were assessed with the mood disorders module of the Structured Clinical Interview for the DSM-IV-TR (SCID-1) [63]. Assessors were trained according to the training sequence recommended by developers of the SCID (<http://bit.ly/XoR9G3>) and had their assessments periodically reviewed by the same psychometrician. Participants were classified as "subclinical" if they met criterion A (depressed mood or anhedonia) but not criterion B (at least five additional symptoms of depression).

Beck Depression Inventory-II (BDI-II). Symptoms of depression experienced in the past 2 weeks were assessed with the BDI-II [64], a widely used and extensively validated 21-item questionnaire. Scores on the BDI-II can reliably distinguish psychiatric patients from nondepressed controls as well as patients with dysthymia from patients with major depression [65]. Scores from 0 to 13 indicate no to minimal depression; 14–19 indicate mild depression; 20–28 indicate moderate depression; and 29–63 indicate severe depression [65].

Other Measures

Demographics. A brief demographics questionnaire assessed age, race and ethnicity, sexual orientation

Table 2 Number of participants meeting criteria for sexual dysfunction across time points

	Pretreatment	Posttreatment	2-week follow-up	1-month follow-up	6-month follow-up	Total recovered (%)
Hypoactive sexual desire disorder						
Schema	18	11	9	8	8	56
Trauma	18	15	14	14	14	22
Female sexual arousal disorder						
Schema	24	18	11	11	11	54
Trauma	23	20	20	17	17	26
Female orgasmic disorder						
Schema	29	22	21	20	20	31
Trauma	27	20	15	15	15	44

and identity, level of education and family income, and type and duration of current romantic relationship.

Analytic Methods

Dichotomous Variables (Diagnosis of Sexual Dysfunction)

To model our dichotomous outcome data, we used Cox proportional hazards regressions. The Cox proportional hazards regression tested the incidence of recovery from a sexual dysfunction diagnosis, time until recovery, and whether incidence and time of recovery differed significantly between experimental conditions.

Continuous Variables (Symptoms of Depression and PTSD)

Given the data nonindependence of residuals inherent in longitudinal data, we performed analyses on our continuous outcome variables using multilevel Growth Curve Modeling (GCM), available in the hierarchical linear modeling computer program (HLMwin v. 6.08 [66]). GCM allowed us to test (i) whether variables changed over time on average within a sample; (ii) the shape of the average growth rate; (iii) whether there was inter-individual variation in the shape, strength, or direction of growth rates; and (iv) whether experimental condition accounted for significant variance in growth rates. We tested for both quadratic and cubic rates of change to capture a number of potential patterns, including improvement from pretreatment to posttreatment with subsequent relapse (single, quadratic curve) and improvement from pretreatment to posttreatment with maintenance over follow-up (two-curved, cubic function). For more information about the construction of our models, see <http://bit.ly/wKzXT8>.

Results

Recovery from Sexual Dysfunction

We first examined the rate of recovery from clinical diagnoses of sexual dysfunction (HSDD, FSAD, and/or FOD; see Table 2). Thirty-six participants met criteria for HSDD at intake and, over the course of the study, 15 of these participants experienced recovery (no longer met criteria for HSDD as determined by a study clinician). Condition was a significant predictor of time until recovery ($z = 2.11$, $P < 0.05$; $R^2 = 0.13$). Participants in the schema condition tended to recover more quickly than participants in the trauma condition (see Figure 2).

Forty-seven participants met criteria for FSAD at intake, and 21 of these participants recovered at some point in the study. Condition was a significant predictor of time until recovery ($z = 2.00$, $P < 0.05$; $R^2 = 0.09$). Again, participants in the schema condition tended to recover more quickly than participants in the trauma condition (see Figure 3). Fifty-six participants met criteria for FOD at intake and, of these, 25 women recovered at some point in the study. Condition was not a significant predictor of time until recovery ($z = -0.56$, P value not significant).

Change in Depression and PTSD

We also tested whether depression and PTSD changed on average over time. For depression, we found significant linear and quadratic growth, indicating depression improved from pretreatment to posttreatment but that there was a slight worsening of symptoms over follow-up. Treatment condition did not significantly predict post-treatment scores or rates of change.

For PTSD symptoms, we found significant linear, quadratic, and cubic change (see Figure 4). This pattern suggests that, on average, PTSD symptoms decreased from pretreatment to

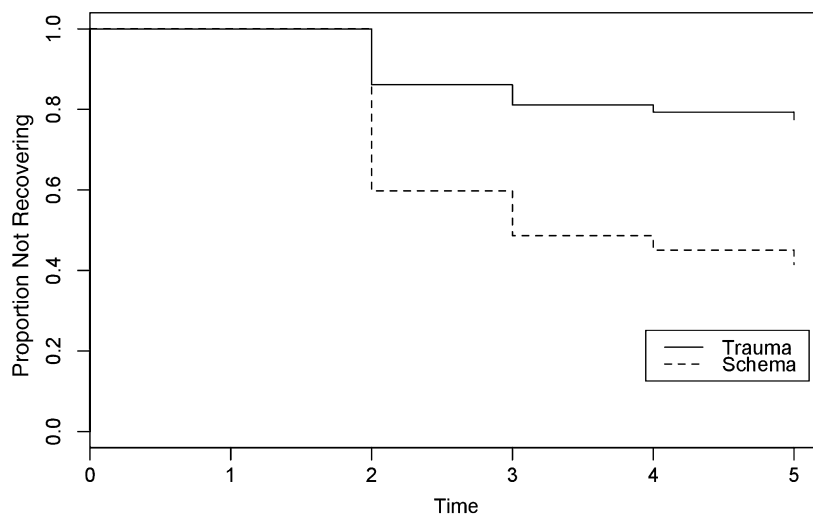


Figure 2 Proportion of participants (by condition) meeting criteria for hypoactive sexual desire disorder (HSDD) at intake not recovered

posttreatment and that this improvement was maintained over follow-up. Again, treatment condition did not significantly predict scores or rates of change.

Discussion

Findings from the present study suggest that expressive writing was effective in reducing symptoms of depression, PTSD, and sexual dysfunction in women with a history of CSA. Writing focused on sexual schema was associated with a higher likelihood of, and faster time to, recovery from HSDD and FSAD, but not FOD. Each of these findings is discussed separately below.

In contrast to the findings of Batten et al. [47], we found that five sessions of writing for 30

minutes was associated with improvements in depression in adult survivors of CSA. There are several possible explanations for this contrast. First, we spaced out sessions of writing over the course of several weeks, as opposed to daily sessions as in the protocol of Batten et al. [47]. It is likely that participants need time to process and incorporate changes in their belief systems into their daily lives, a fact that is reflected in the finding that longer time between writing sessions is associated with greater improvements [40]. We also conducted a longer term follow-up (6 months) than did Batten et al. (12 weeks); many of the improvements observed in the current study appeared or were significantly maintained during the later follow-up assessments. Finally, the participants in the Batten et al. study were not

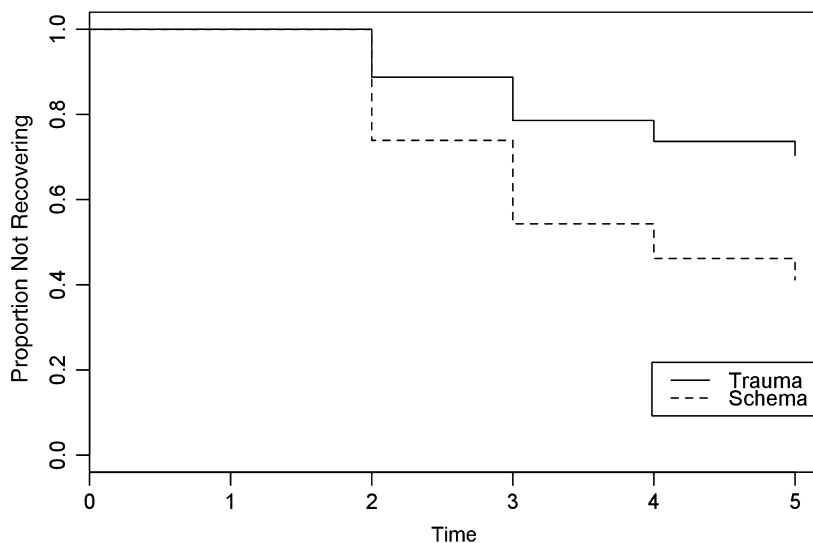


Figure 3 Proportion of participants (by condition) meeting criteria for female sexual arousal disorder (FSAD) at intake not recovered

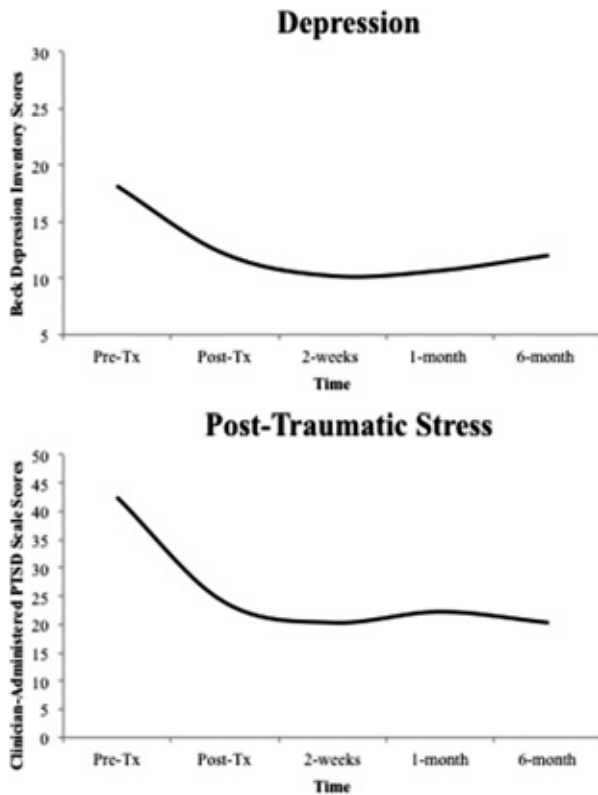


Figure 4 Change in depression symptoms (BDI) and post-traumatic stress disorder symptoms (CAPS) over time

treatment seeking, and thus may have lacked motivation for change.

As in several other trials [41], we found that expressive writing was associated with reduced PTSD symptoms. Novel to this study, we saw this improvement continue well into a long-term follow-up with a CSA population. Several studies that documented no effect of expressive writing on PTSD used undergraduate student samples, not clinical populations [67]. PTSD has been termed a “disorder of recovery” because the difference between normative and pathological responses to trauma lay not in the symptoms (e.g., hypervigilance) but in the lack of resolution of those symptoms [68]. By definition, PTSD is resistant to spontaneous improvement. On average, participants in our sample presented with subclinical PTSD. However, for the most part, these women had been experiencing significant levels of symptoms since childhood, and it is notable that such resistant symptoms were reduced to the nonclinical range and remained in remission at a 6-month follow-up.

It is possible that the key to reducing resistant symptoms lay in the unique combination of dis-

closure and privacy afforded by the expressive writing paradigm. Women in the present study were given absolute choice as to their level of disclosure to the study clinicians, which many reported made it easier to engage more fully in the treatment. Indeed, one study of expressive writing in which trauma survivors were required to read their writing to others in a group setting showed a *worsening* of PTSD symptoms [69]. Moreover, writing allowed women to have control over the pace and intensity of the treatment, a feature that is especially important to CSA survivors.

It is especially interesting that the sexual schema condition, which had an ostensibly more specialized focus, produced similar decreases in both depression and PTSD as did the trauma condition. This suggests that the impact of expressive writing on maladaptive schema generalized to schema associated with depression and PTSD, despite the constraint to focus on *sexual* schema. In other words, focusing on sexual schema may have allowed women to both process sexual issues *and* learn skills (e.g., challenging maladaptive cognitions) that then transferred to more general psychopathology. It is also possible that for this population, depression and PTSD are integrally linked to sexual schema. Focusing on sexuality, thus, may have led to changes in psychopathology. Although it has been suggested that putting constraints on the topic or directing a focus for expressive writing may distract participants from expressing themselves freely [34], certain constraints such as writing about the same trauma during each writing session rather than different traumas each time have been shown to improve long-term gains [70]. Certainly in our study, writing about sexual schema did not reduce the general mental health benefits that were also seen in the traditional trauma-focused writing but also conferred additional benefits in improving sexual function. It would be helpful to compare specific prompts to free writing in future studies.

Although both writing groups improved in sexual function, greater gains were seen in the sexual schema condition. Because their sexual trauma happened so early in life, survivors of CSA must not only resolve the traumatic memory itself, but the contingent effect on the rest of their sexual development. It is likely that women in the sexual schema condition were better able to focus on the whole of their sexual identity and belief system, *including* how the trauma impacted them, than those in the trauma condition who considered *only*

how the trauma impacted them. Also, our findings suggest that changes in sexual well-being were not entirely dependent on changes in depression and PTSD, as both treatment groups showed similar changes in psychopathology but differential changes in sexual function.

To our knowledge, only one other psychological treatment has been shown to improve sexual function in women with a history of CSA [20]. In the case of Brotto et al., post hoc follow-ups revealed that women with a history of CSA benefited more from a mindfulness-based educational group than women without such histories. Given this trend, it is possible that expressive writing may also have a lesser effect on sexual dysfunction in women without a history of CSA than that seen in the present study. However, as effects of expressive writing are stronger in physical than psychological health outcomes [39], it is possible that effects on sexual function in a population without psychological distress would be comparable.

The present study had limitations that, if addressed in future studies, may lead to an even greater understanding of the generalizability and mechanisms of action of the expressive writing treatments. We did not study men with CSA histories; however, as meta-analyses on expressive writing paradigms suggest that the beneficial effects on health are greater for men than for women [40], we would expect the effects of the treatments to be even larger for male CSA survivors. For ethical reasons, the recruitment materials for the present study explicitly stated this was a treatment study for survivors of CSA. There is some evidence that the nature of sexual problems differ for women who have experienced abusive situations but do not identify themselves as having been abused vs. those who identify as survivors [4]. As such, we do not know if the present findings would extend to a population that does not identify as abused. Similarly, the findings presented here may not apply to a different population than that studied, which was on average white, college-educated, and partnered. The present study used a therapist-guided approach, in which patients had the option of exploring what they wrote with an empathic but objective observer; it would be useful to see if writing with no therapist contact would confer the same results. If so, it would be simple to integrate expressive writing instructions into education provided to CSA survivors by primary care facilities—that is, the most common settings in which women's sexual health concerns are first addressed [71].

Expressive writing is a treatment that is very easy to conduct, easily accessible, generally acceptable and intuitive to most patients, and cost-effective as it requires minimal trained personnel to administer. The present study suggests that it may also confer unique benefits to women with a history of CSA: namely, it appears to improve sexual function in this population.

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