Psychological Services

ISSN: 1541-1559

2023, Vol. 20, No. 1, 122–136
https://doi.org/10.1037/ser0000608

Delivery of Written Exposure Therapy for PTSD in a University Counseling Center

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Posttraumatic stress disorder (PTSD) occurs at high rates among college students, and there is an urgent need to develop brief and accessible interventions to help these at-risk students achieve academic and career success. This open-trial pilot study tested the feasibility and effectiveness of Written Exposure Therapy (WET; Sloan & Marx, 2019), a brief, five-session exposure-based treatment, when delivered in a real-world Counseling Services Center. Students who met criteria for probable PTSD were assessed at baseline, posttreatment, and 3-month follow-up using self-report assessments of PTSD and depression. Of 28 eligible college students, 22/28 (78.6%) completed at least one treatment session, and of those students, 14/22 (63.6%) completed the full five sessions, 12 of whom completed both the posttreatment assessment and the 3-month follow-up assessment. Data were analyzed using intent-to-treat ($N = 22$) and per-protocol ($n = 12$) samples. As hypothesized, in both samples, PTSD symptoms decreased from baseline to posttreatment ($\eta^2 = .60–.81$; very large effects), and these improvements were maintained at the 3-month follow-up. Similar findings were observed with respect to decreases in self-reported depression, but not with respect to decreases in educational impairment or increases in academic self-efficacy. Qualitative data indicated that both students and therapists found the treatment credible and acceptable. These findings offer preliminary support for the utility of WET for PTSD when delivered in a student counseling services center. Suggestions for adapting WET within a student counseling services environment are discussed.

Impact Statement

This study suggests that Written Exposure Therapy (WET) for college students with posttraumatic stress disorder (PTSD) resulted in significant reductions in both PTSD and depressive symptoms. WET was credible and acceptable to students and therapists and fit well within the student counseling center environment and semester-driven schedules.

Keywords: PTSD, Written Exposure Therapy, college students

This article was published Online First February 3, 2022.
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This work was supported by a San Antonio Life Sciences Institute (SALSI) Proposal Enhancement Award to Dr. Sandra B. Morissette from The University of Texas at San Antonio. The views expressed in this article are solely those of the authors and do not necessarily represent the views of or an endorsement by the United States Military, the Department of Defense, or the U.S. Government.
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An estimated half to three quarters of college students have experienced at least one potentially traumatic event, with approximately 12%–35% positively screening for posttraumatic stress disorder (PTSD; Cusack et al., 2019; Read et al., 2011; Wilkinson-Truong et al., 2020). Rates of PTSD are even higher among certain college subgroups, including student veterans. In a large national sample of 628 student veterans, nearly half (45.9%) endorsed significant symptoms of PTSD (i.e., PTSD Checklist [PCL]-Military Version score of 28 or higher; Rudd et al., 2011), and recent data indicate that 51.3% meet criteria for probable PTSD (i.e., PCL-5 score cutoff 33 or greater; Hinkson et al., 2021). Compared to the lifetime prevalence rate of PTSD diagnosis in the general population (5.7%; Kessler et al., 2012), the prevalence of PTSD symptoms among college students is of particular concern to

academic institutions given the disorder's impact on functional impairment, including educational functioning and outcomes (Boyraz et al., 2016; Morissette et al., 2019).

Compared to those who never experienced PTSD, students with PTSD (or even a history of PTSD) have a lower grade point average (GPA) and are more likely to drop out of college by the end of their freshman year (Bachrach & Read, 2012). PTSD is also associated with lower self-efficacy for learning, maladaptive academic goal orientation, and lower effort regulation (Boyraz et al., 2016; Ness et al., 2014). Further still, PTSD is often comorbid with other mental health conditions that can affect academic functioning, including depression (Ginzburg et al., 2010), which occurs at high rates among both college students and veterans (O'Malley & Johnston, 2002; Rudd et al., 2011; Widome et al., 2011). Like PTSD, depressive symptoms are associated with lower GPA (DeRoma et al., 2009). Collectively, these data point to an imperative need for college campuses to address PTSD, including co-occurring depressive symptoms, in order to help students achieve their full academic and career potential.

Based on a systematic review, Clinical Practice Guidelines published by the American Psychological Association (APA, 2017) "strongly recommend" using cognitive-behavioral therapy, cognitive processing therapy (CPT; Resick et al., 2016), cognitive therapy, and prolonged exposure (PE; Foa et al., 2019), and "suggest" the use of brief eclectic psychotherapy (BEP; Gersons et al., 2015), eye movement desensitization and reprocessing, and narrative exposure therapy for the treatment of PTSD. Recommendations were made based on a combination of the strength of the evidence, benefit versus harm, preferences of patients, and applicability of the evidence. The reader is referred to the clinical practice guidelines for details about the nature of these treatments, available outcomes data, and the process of review and decision-making (APA, 2017). Despite the availability of these guidelines, few published studies address the specific types of treatments that are typically delivered within university counseling centers to address PTSD.

In one study of 80 providers from university counseling centers across the nation, Wilkinson, Infantalino, et al. (2017) found that a majority of providers (91%) reported using evidence-based therapies. Among treatments for PTSD, cognitive-behavioral therapy (33.6%) was the most frequently reported treatment, followed by humanistic therapy (22.7%), interpersonal therapy (12.7%), and acceptance and commitment therapy (12.7%). Notably, only 5.5% reported using PE and 2% CPT. In another national sample of clinicians ($N = 69$) from university counseling centers examining treatment for sexual assault, counselors reported that they typically offer immediate crisis response (97%), acute treatment within 4 weeks of sexual assault (87%), and treatment within 1–3 months after the sexual assault (87%; Artime & Buchholz, 2016). Surveyed counselors perceived supportive counseling to be the most effective in treating clients with sexual assault. Standardized treatments, including CPT, PE, and general cognitive-behavioral interventions, were perceived as only moderately effective, which may reflect clinicians are treating sexual assault victims who may not necessarily meet criteria for PTSD and find supportive counseling sufficient for early intervention (Artime & Buchholz, 2016). However, many counselors also reported they did not use these standardized interventions and were unaware of whether these approaches were effective. Thus, in the context of limited available data, practices for treating PTSD vary widely across university counseling centers.

Several reasons could account for differences in treatments selected for use within counseling centers. Counseling center providers may perceive supportive intervention as more useful early on in the course of working with trauma survivors, work with students who do not meet full diagnostic criteria for PTSD, have varying accessibility to training and case consultation for empirically supported treatments, or have logistical challenges with implementing empirically supported treatments. Notably, very few studies have been conducted to evaluate outcomes of empirically supported PTSD treatments in university counseling centers. In one pilot study of CPT, college students ($N = 26$) experienced significant reductions in both PTSD and depressive symptoms; however, the corresponding influence of symptom reduction on academic outcomes was not reported (Wilkinson, Von Linden, et al., 2017). While there is evidence suggesting students who complete treatment in a university counseling center have significantly higher GPAs than those who do not complete treatment (Schwitzer et al., 2018), no studies have been published that address the effect of PTSD treatments on corresponding academic outcomes.

Although there is preliminary evidence of the utility of CPT in university counseling centers, there are identified barriers to implementing empirically supported PTSD treatments more broadly in a university environment (Wilkinson-Truong et al., 2020). Logistic barriers such as very heavy caseloads impose a focus on short-term counseling and limited session numbers (Center for Collegiate Mental Health, 2021) and are further compounded by college and university counseling center staff not feeling equipped to provide adequate supports and services for students with PTSD (Ness & Vroman, 2014; Salzer et al., 2008). Even when providers are well trained, some are reluctant to use CPT and PE, noting insufficient time due to high caseloads (Borah et al., 2013; Finley et al., 2015), with most providers in another study indicating that they were unable to engage in the use of either CPT or PE with high fidelity or use all critical elements (Wilk et al., 2013). Likewise, semester schedules (typically 15 weeks in length) can introduce constraints with implementing empirically supported treatments in full unless initiated near the beginning of the semester and contingent upon the availability of at least weekly appointments. These potential barriers to care among therapists are particularly meaningful in the context of student treatment-seeking barriers. Although treatment seeking for trauma-exposed college students is generally high (Artime et al., 2019), 43% of college students with a mental health problem report that they do not have time to engage in mental health treatment due to studying and managing exam schedules (Eisenberg et al., 2011). Collectively, these issues point to the need to identify additional, and preferably briefer, treatments for PTSD that can be flexibly used and disseminated within university counseling centers.

The aim of the present pilot study was to evaluate the utility of Written Exposure Therapy (WET; Sloan & Marx, 2019) for PTSD in a university counseling center. WET evolved from a series of studies that began with testing mechanisms underlying Pennebaker and Beall's (1986) expressive writing procedure and then adapting the treatment to address the needs of individuals with PTSD. Expressive writing is considered a form of exposure therapy and has been found to benefit college students' mental and physical health by reducing depression, anxiety, and stress symptoms, as well as physical health complaints (Epstein et al., 2005; Gortner et al., 2006; Sloan et al., 2008). Early work that led to the development of

the WET protocol was focused on undergraduate college students with at least moderate PTSD symptom severity (Sloan & Marx, 2004; Sloan et al., 2005, 2011, 2012). However, no studies have used the fully developed WET protocol with college students displaying PTSD symptoms or examined the implementation of WET as delivered by university counseling center providers.

Convenient for semester schedules, WET consists of five weekly sessions in which individuals are instructed to write about their traumatic experience for 30 min each session. The first 60-min session includes psychoeducation related to PTSD symptoms and introduction to WET, and therapists work with clients to identify a primary traumatic event that will be the focus of the subsequent treatment sessions. During the four subsequent 40-min sessions clients are prompted using scripted instructions to write for 30 min about their most intense thoughts and emotions related to their traumatic experience. Clients are asked to start at the beginning and to provide as many specific details as possible, including thoughts and feelings during and immediately following the trauma. Subjective units of distress ratings (0 = *totally relaxed*; 100 = *highest distress ever felt*) are taken before and after writing. After writing, therapists check in with clients to see how the writing went and gage levels of engagement in writing, but do not engage in cognitive processing. At the end of the session, clients are instructed to anticipate and allow themselves to have thoughts, images, and feelings about the trauma during the coming week. In between sessions, therapists review the client's writing and provide feedback in the next session regarding points at which the client could write more intensively about their emotions or thoughts. Full details of the treatment can be accessed via the published WET Manual (Sloan & Marx, 2019).

WET is efficacious and included as a recommended treatment approach in Departments of Veterans Affairs and Defense (VA/DoD) Clinical Practice Guidelines for the Management of PTSD (VA/DoD Clinical Practice Guideline Working Group, 2017). For instance, in a recently published noninferiority treatment study of 126 veteran and nonveteran adults, WET had equivalent reductions in PTSD symptom severity in comparison to the more time intensive CPT (Sloan et al., 2018). This study also found that WET significantly reduced depressive symptoms, with improvements lasting 60 weeks after the first session (Thompson-Hollands et al., 2018). Retention rates for WET were superior to CPT, as participants were significantly more likely to drop out within the first five sessions of CPT (31.7%) than those completing a full five-session course of WET (6.3%; Sloan et al., 2018). These data suggest WET could be a viable treatment option to be implemented in a university counseling services setting, where the need for brief approaches is high.

In the present study, the utility and acceptability of WET when delivered in a university counseling center by professional counselors were evaluated. It was hypothesized that students who completed WET would report significant reductions in PTSD symptom severity from baseline to posttreatment (Hypothesis 1a), and that posttreatment gains would be maintained at the 3-month follow-up (Hypothesis 1b). In keeping with Thompson-Hollands et al. (2018), it was also hypothesized that depressive symptoms would significantly decrease from baseline to posttreatment (Hypothesis 2a), and that post-treatment gains would be maintained at 3 months (Hypothesis 2b). Because of the university environment, an exploratory aim was to determine whether WET resulted in reduced educational impairment and increased academic self-efficacy. It was hypothesized that student participants who completed WET would report significantly less educational impairment (Hypothesis 3a) and significantly greater academic self-efficacy (Hypothesis 3b) from baseline to 3-month follow-up. Finally, in the interest of facilitating implementation and dissemination, self-report measures of acceptance of and satisfaction with the treatment were administered, and qualitative feedback was gathered from participants and therapists. Such qualitative information can inform feasibility and uptake as a complement to the quantitative outcome data.

Method

Participants

Study recruitment and enrollment took place from the March 2017 to May 2018. Participants were recruited via flyers posted on campus, social media, presentations at relevant events hosted by student organizations, referrals from campus services (e.g., counseling services, student disability, career services, etc.), and mass emails sent to students randomly selected from a list of matriculated students. Of note, the study initially recruited student veterans only, but the criteria were expanded to include civilian students in order to address the campus commitment to offer PTSD treatments to all students.

Participants were eligible if they (a) were a matriculated student at The University of Texas at San Antonio; (b) were age 18 years or older; (c) endorsed symptoms of probable PTSD (defined as experiencing a qualifying traumatic event, duration of symptoms at least 1 month; and a score of 33 or higher on the PCL-5 (Bovin et al., 2015); (d) were willing and able to engage in and complete the treatment within a period of 5–6 weeks; and (e) met pretreatment medication stabilization criteria (defined as equal to or greater than 3 months on a selective serotonin reuptake inhibitor or monoamine oxidase inhibitor; at least 1 month on an anxiolytic or beta-blocker; or at least 1 month medication discontinuation or "wash out" for all medications), if applicable. Individuals taking psychotropic medications agreed to work with their prescriber to remain on stable doses of any prescribed psychotropic medications for the duration of the intervention and through the first follow-up assessment as much as possible and as medically indicated.

Exclusion criteria were as follows: (a) current suicidal or homicidal crisis warranting immediate intervention; (b) self-reported diagnosis or symptoms of an active psychotic disorder or unstable bipolar disorder; (c) concurrent engagement in another psychosocial treatment for PTSD; (d) score of 20 or higher on the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001; Saunders et al., 1993), indicative of probable alcohol use disorder (AUD), or (e) clinical judgment that treatment should focus on an AUD or another mental health condition.

A total of 90 participants were screened via telephone by trained research assistants, and 36 were deemed initially eligible. Reasons for exclusion (not mutually exclusive) included: no probable diagnosis of PTSD (n = 42); self-reported diagnosis or symptoms of a psychotic disorder or unstable bipolar disorder (n = 4); currently receiving other psychosocial treatment for PTSD (n = 4); not enrolled at The University of Texas at San Antonio for duration

of treatment ($n = 1$); not stable on psychotropic medicines ($n = 1$); and not able to commit to treatment ($n = 1$). One additional person was ruled out for not being a veteran during the initial recruitment phase of the study when only student veterans were being enrolled. Of the 36 initially eligible, five did not attend the baseline assessment, and three were deemed ineligible at baseline because they did not meet requirements for a probable diagnosis of PTSD. Of the 28 eligible participants, 21 (21/28; 75%) completed at least one treatment session. Fourteen (14/21; 67%) of those who started treatment completed all five sessions, 12 (12/14; 86%) of whom completed both the posttreatment and 3-month assessments. Of the 14 who completed treatment, six participants opted to complete the treatment weekly, two twice per week, and six completed the treatment through a combination of weekly and biweekly sessions.

Therapists and Training

Study therapists ($N = 5$) were licensed clinicians employed with The University of Texas at San Antonio Student Counseling Services Center or Department of Psychology.

Therapists included one male and four females, who averaged 44.00 years of age ($SD = 7.11$) and had been practicing for 14.20 years ($SD = 5.26$). Therapists reported on average 10.20 years ($SD = 8.73$) of experience working with military clients, 8.60 ($SD = 6.02$) years of experience working with postsecondary student clients, and 11.60 ($SD = 6.35$) years of experience treating PTSD. Three therapists indicated that their highest degree obtained was a master's degree and two indicated their highest degree was a doctoral degree. Two therapists identified cognitive-behavioral as their primary theoretical background. Of the other three, one identified as cognitive-behavioral/psychodynamic, one as cognitive-behavioral/humanistic/experiential/eclectic, and one as eclectic with no further detail.

Prior to the start of the study, participating therapists completed a 4-hr workshop of WET delivered by the first and last authors, which was followed by weekly case consultation meetings. During each meeting, therapists received general and case-specific feedback regarding their delivery of WET to enhance competence and ensure treatment fidelity. After completing full delivery of WET (i.e., all five sessions) for at least one case, therapists were invited to participate in semistructured interviews with research staff in order to solicit their feedback and experiences with delivering WET. Therapists provided informed consent prior to completing the qualitative interview. All therapist interviews were recorded and fully transcribed by research staff to facilitate thematic analysis.

Setting

The Student Counseling Services Center is accredited by the International Association of Counseling Services and offers a wide variety of services, including group and individual therapy to address the mental health needs of students. The staff at Counseling Services is multidisciplinary and includes individuals from the professions of psychology, social work, and counseling. Although some therapists in the Center are trained in delivering CPT and PE, the modal intervention for PTSD is supportive counseling.

Procedure

All study materials and procedures were approved by the Institutional Review Board. Eligible participants were scheduled to complete an in-person baseline assessment to determine final eligibility criteria. To optimize participants' understanding of study procedures and allow participants the opportunity to contact research staff with questions prior to their in-person appointment, a copy of the consent form was emailed or mailed (based on participant preference) in advance of the appointment, although the consent form was still reviewed in detail during the baseline assessment. Graduate student research assistants administered the assessments for baseline, posttreatment, and 3-month follow-up assessments, and therapists administered weekly self-report assessments before the beginning of each session.

Participants who were deemed eligible during the baseline assessment were assigned to a study therapist based on availability. Administrative staff then scheduled the first treatment session during which WET was initiated. The protocol was administered as described in the Introduction section.

Participants completed a subset of measures included in the baseline and follow-up assessments (PCL-5, Patient Health Questionnaire-9 [PHQ-9], Depressive Symptoms Inventory—Suicidality Subscale [DSI-SS], and AUDIT) prior to each session for safety monitoring purposes and to track symptom changes during treatment. Additionally, participants were reassessed 1 month following the final treatment session (posttreatment assessment) and 3 months later. Consistent with PTSD criteria in the *Diagnostic and Statistical Manual for Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013), posttreatment PTSD symptoms were assessed using the PCL-5 1 month after the last treatment session to reflect symptom changes following treatment rather than symptom fluctuations during treatment. Participants were paid $25 for each of the assessment sessions and $10 for assessments completed during each treatment session to help defray student costs associated with travel to the session (e.g., on-campus parking).

Measures

Telephone Screen

A screen questionnaire was used to determine participants initial eligibility for the study. Questions included the student's age, psychological symptoms, current suicidal intent, and current medication and treatment use to alleviate PTSD symptoms. Potential participants were assessed for current suicidal ideation and intent by answering questions, "Have you had thoughts about ending your life?," and if so, "When did you have these thoughts, and do you have a plan to attempt suicide?" To screen for bipolar or psychotic disorder, participants were asked whether they were currently diagnosed with either disorder, and if they had experienced symptoms related to each disorder. Screening questions were drawn from the MINI International Neuropsychological Interview (Sheehan et al., 1998). Questions for bipolar disorder included "Have you ever had an extended period of time (several days or more) when you were feeling 'up' or 'high' or 'hyper' or so full of energy or full of yourself that you got into trouble, or that other people thought you were not your usual self?" Questions for psychotic disorders included "Have you ever heard things other people couldn't hear,

such as voices?" and "Have you ever had visions when you were awake or have you ever seen things other people couldn't see?"

Demographic Form

Study participants completed a demographic and military characteristics form at the baseline assessment, which measured standard demographics (race, gender, age, education, military service, etc.). Therapist participants completed a similar demographic form, including information about theoretical orientation and years of practice.

Depressive Symptoms Inventory—Suicidality Subscale

Suicidal intent was assessed using the Depressive Symptom Index—Suicidality Subscale (DSI-SS; Joiner et al., 2002) to determine final eligibility at baseline and used for safety monitoring throughout the course of treatment. The DSI-SS is a 4-item self-report measure of suicidal ideation that focuses on ideation, plans, perceived control over ideation, and impulses for suicide. Scores on each item range from 0 to 3, with higher scores reflecting greater severity of suicidal ideation. The measure has an excellent internal consistency across population-based, inpatient, and outpatient samples (von Glischinski et al., 2016). Cronbach's α for the present study was .88.

Alcohol Use Disorders Identification Test

The AUDIT (Saunders et al., 1993) was used to identify students with probable AUD at baseline per exclusion criteria. The AUDIT consists of 10 self-report items assessing alcohol consumption, drinking behavior, and alcohol-related problems; items are scored from 0 to 4 with higher scores indicating harmful alcohol use. The AUDIT demonstrated good internal consistency, sensitivity and specificity in prior studies (α = .80–.93; Reinert & Allen, 2007), and is a psychometrically sound and valid tool for identifying high-risk drinkers among college students (Kokotailo et al., 2004). Cronbach's α in the present study was .81.

History of Head Injuries

A 3-item modified version of the Defense and Veterans Brain Injury Center (DVBIC; Schwab et al., 2006, 2007) was administered by the research assistant to screen for traumatic brain injury (TBI) history at baseline. A positive screen consisted of participant endorsement of an injury and altered consciousness for the worst head injury sustained. As the screen did not originally ask about head injuries sustained outside of military deployment, an additional set of four questions were added to measure civilian head injuries. Based on these questions, the data were coded as yes/no TBI history.

Traumatic Life Events Questionnaire-Lite

The Traumatic Life Events Questionnaire-Lite (TLEQ-Lite) was administered at baseline to assist with identifying the focal traumatic event for treatment sessions. The 23-item TLEQ-Lite assesses frequency of exposure to 22 potentially traumatic events encountered within and outside of military service (Kubany et al., 2000). Each item assessed the frequency of the particular event (0 = *never* to 6 = *more than five times*), with yes/no follow-up questions probing the context of the event (e.g., injury, military-related, age at time of event, etc.). Initial studies demonstrated content validity and reliability for this measure (Clancy et al., 2006; Dedert et al., 2009).

Deployment Risk and Resilience Inventory-2 Combat Experiences

In conjunction with the TLEQ, the Deployment Risk and Resilience Inventory-2 Combat Experiences (DRRI-2-CE) was administered to veterans at baseline to assess for stressful deployment experiences and assist with identifying the focal traumatic event for treatment sessions (Vogt et al., 2013). The measure assessed the frequency of exposure to a military deployment-related experience (e.g., "I personally witnessed someone from my unit or an ally unit being seriously wounded or killed," "I was exposed to hostile incoming fire"), on a scale from 1 (*never*) to 6 (*daily or almost daily*). The DRRI-2-CE has excellent internal consistency reliability (α = .91; Vogt et al., 2013). Cronbach's α in the present study was .96.

PTSD Checklist for DSM-5

The 20-item PCL-5 (Blevins et al., 2015) was used to determine eligibility and outcomes, and was administered during each session (past week version) and every assessment point (past month version) as the primary outcome variable. The PCL-5 measures the extent to which participants were bothered by symptoms of posttraumatic stress (0 = *not at all* to 4 = *extremely*). In the present study, the PCL-5 was completed based on the focal trauma addressed within WET treatment. The PCL-5 has good test–retest reliability ($r = .82$), high internal consistency reliability (α = .94–.95), and good convergent and discriminant validity (Blevins et al., 2015). Cronbach's α in the present study was acceptable (.69).

Patient Health Questionnaire-9

The brief PHQ-9 measured the severity of depressive symptoms and was administered at all three assessment points as well as at each treatment session to monitor symptom changes (Kroenke et al., 2001). Students indicated how often they were bothered by symptoms of depression in the previous 2 weeks (e.g., "Little interest or pleasure in doing things") on a 4-point scale from 0 (*not at all*) to 3 (*nearly every day*). The PHQ-9 has good internal consistency, with αs ranging from .83 to .92 (Cameron et al., 2008) and test–retest reliability of .84. Cronbach's α in the present study was .83.

Inventory of Psychosocial Functioning-Educational Subscale

The 15-item Inventory of Psychosocial Functioning (IPF; Bovin et al., 2018) measures functional impairment across multiple life domains among individuals diagnosed with PTSD and was administered at each major assessment point. Participants rated how often they engaged in a behavior (e.g. "I arrived on time for my classes," "I got along with classmates and/or instructors") from 1 (*never*) to 7 (*always*). For easier interpretation, the appropriate items were reverse scored so that higher scores indicated greater impairment.

The Educational subscale of the IPF has excellent internal consistency (α = .86–.90). Cronbach's α in the present study was .83.

College Academic Self-Efficacy Scale

The College Academic Self-Efficacy Scale (CASES) is a 33-item measure of student academic self-efficacy and was administered at all three assessment points (Owen & Froman, 1988). Students rated their degree of confidence in performing typical academic behaviors (e.g. "Taking well organized notes during a lecture," "Answering a question in a large class") on a scale from 1 (*not at all confident*) to 5 (*very confident*). The measure has good psychometric properties, with prior studies showing excellent internal consistency (α = .90–.92; Choi, 2005; Owen & Froman, 1988) and test–retest reliability equal to .85. Cronbach's α in the present study was .95.

Credibility and Expectancy Questionnaire

The Credibility and Expectancy Questionnaire (CEQ) is a brief 6-item measure of treatment expectancy and credibility of the treatment to be received (Devilly & Borkovec, 2000), and was administered at the baseline and posttreatment assessment points. The present study utilized this measure as an indicator of participants' perceptions of WET and as a secondary exploratory implementation outcome. Three items measured credibility and were rated on a 9-point scale depending on item context (e.g., "At this point, how logical does the treatment offered to you seem?" from 1 = *not at all logical* to 9 = *very logical*). The other three items measured treatment expectancies, with one measured on a 9-point scale and two measured on an 11-point percentile scale (0 = *0%* to 11 = *100%*; e.g. "By the end of treatment, how much improvement in your functioning do you feel will occur?"). The measure has good psychometric properties across multiple prior studies, holding a stable two-factor structure (expectancy and credibility; Devilly & Borkovec, 2000; Dima et al., 2015). The CEQ has adequate to good internal consistency and test–retest reliabilities, with α = .79–.90 and r = .82 for the expectancy factor and α = .81–.85 and r = .83 for the credibility factor. Total scores on the credibility subscale range from 3 to 27, with higher scores indicating participants perceive the treatment to have greater credibility. As items are measured on two different rating scales (1–9 and 0%–100%), item scores were standardized to form a composite mean for each factor.

Client Satisfaction Questionnaire

The 8-item Client Satisfaction Questionnaire (CSQ) measured participants' satisfaction with treatment (Larsen et al., 1979) and was administered at the posttreatment assessment. Items were rated on a 4-point scale dependent on item context, with example items including "How would you rate the quality of service you received?" rated from 1 = *poor* to 4 = *excellent* and "If you were to seek help again, would you come back to our program?" rated from 1 = *No, definitely* to 4 = *Yes, definitely*. Higher scores indicate greater satisfaction, with the lowest possible score of 0 and highest possible score of 32.

Therapist Satisfaction Questionnaire

Therapists were administered a modified version of the CSQ to assess their satisfaction as treatment providers with delivering WET. Therapists completed this assessment during the implementation feedback interview. Items were rated on a 4-point scale dependent on item context, with example items including "How would you rate the quality of the treatment program?" rated from 1 = *poor* to 4 = *excellent* and "Would you use this treatment program again?" rated from 1 = *No, definitely* to 4 = *Yes, definitely*. One therapist did not treat any veterans and therefore left one item blank on the modified Therapist Satisfaction Questionnaire (TSQ), "Were you able to deliver the treatment program in such a way that it seemed to meet the veteran's need?" For this reason, mean scores were calculated so as not to artificially lower the total score with a missing value.

Qualitative Interview

Semistructured interviews were conducted one-on-one with participants by a research assistant at the posttreatment session or in one instance at the 3-month follow-up. Therapists were interviewed after they had completed at least one WET treatment case. The intent of both interviews was to assess for attitudes and perceptions toward WET, identify possible implementation facilitators and barriers for implementation, and acquire personal experiences of receiving and delivering WET within a university setting. Example questions for students include "What was your experience in receiving WET?," "Is there anything about WET itself that didn't work as well for you?," "What changes would you suggest?," and "Is there anything else you'd like us to know about your thoughts about WET, and whether it should be used in college settings in the future?" Therapists answered similar questions (i.e., "What was your experience in delivering WET?") and additional questions specific to their role as a care provider in a university counseling center. Examples of additional questions include "How well does WET fit with the way you approach treating trauma?," "What, if anything, has made it challenging to provide WET in the counseling center?," and "What is the most important thing that would need to change about your clinic (e.g., procedures, leadership attitudes, policies, etc.) in order to make it possible to provide WET to more individuals with PTSD where you work?"

Data Analytic Plan

A series of repeated-measures analysis of variances (ANOVAs) were conducted to test treatment outcome hypotheses. Nested analyses were not conducted due to a small intraclass correlation (p = .0096) and sample size. As indicated from the two-level intercept-only model, approximately 1% of the variability in posttreatment PTSD scores was associated with differences between therapists. This was anticipated given the scripted structure of WET and limited therapist contact during the writing process. In addition to no meaningful average difference among therapists on the PTSD symptoms, the small number of participants and therapists at each level limited the statistical power necessary for continuing with a hierarchical model (Tabachnick & Fidell, 2007).

To estimate an unbiased treatment effect, each hypothesis was tested using two ANOVAs, first using a modified the intent-to-treat (ITT) sample and then the per-protocol sample (Gupta, 2011). The ITT selection criterion is traditionally defined as every participant who was assigned to treatment regardless of noncompliance, protocol deviation, withdrawal, or anything else that occurs after

assignment (Fisher et al., 1990); however, in order to determine the efficacy of treatment, a modified ITT approach was used where those who did not receive any treatment were excluded (Gupta, 2011; Sainani, 2010). Last observation carried forward (LOCF) approach was used to impute outcome variables for those who had missing data in the ITT group in which the last recorded outcome variable score (e.g., PCL-5, PHQ-9, IPF-ES) was used in place for every subsequent missing data point for participants with missing data. Although LOCF can introduce bias, this was selected as a conservative approach for data imputation based on the idea that untreated PTSD tends to be stable and chronic in nature (Fink et al., 2017). This also allowed for calculation of a reliable change (RC) index and comparison with the per-protocol sample. The per-protocol sample criteria included only those participants who completed the study without protocol violations (e.g., nonadherence to treatment, missed measurements; Sainani, 2010; Sanchez & Chen, 2006).

Participant and therapist responses to questions from semistructured interviews were qualitatively evaluated. Interviews were audio recorded and then transcribed by research assistants and organized by question using Microsoft Word. An inductive approach was utilized for data analysis using grounded theory (Braun & Clarke, 2006, 2013). Three raters performed step-by-step thematic analysis of participants' and therapists' responses by organizing the raw data to form initial categories using open coding, linking the categories together with axial coding, and then selecting the core categories using selective coding. Following coding, raters met to review and define final themes based on consensus. Themes were identified by organizing codes into themes based on frequency. After consensus of themes, the authors selected quotes that they believed best exemplified the findings.

Results

Of the 28 who were eligible, six participants (21.4%) did not start treatment and were excluded from ITT and per-protocol analyses ($n = 3$ unable to contact; $n = 1$ scheduling conflict; $n = 1$ provided no reason; $n = 1$ withdrawn after collaboratively deciding with the therapist that another condition should be the focus of treatment). Among the 22 who completed at least one WET session, seven (31.8%) dropped out of WET treatment and one (4.5%) was withdrawn from WET treatment by their therapist after determining that PTSD was not the most appropriate focus of treatment. Among participants who dropped out, three were able to be contacted; two reported scheduling conflicts as the reason for drop out and one provided no reason. Thus, the total study dropout rate across all time points was 50.0% (14/28), and drop out during treatment was 33.3% (7/22) excluding the therapist-initiated withdrawal (3.6%; 1/28). There were no significant differences on demographics, baseline PTSD symptoms, or educational impairment between the full sample ($N = 28$) and per-protocol sample ($n = 12$) or between those who dropped out of or were withdrawn from treatment ($n = 8$) and those who did not drop out ($n = 14$) in the ITT sample. Of the full sample ($N = 28$), participants were primarily female ($n = 15$; 53.6%) and on average 29.68 years old ($SD = 8.50$, range: 19–51). In terms of race, the majority were White ($n = 19$; 67.9%), followed by African American ($n = 5$; 17.9%), "Other" ($n = 4$; 14.2%), with 10 (35.7%) participants identifying as Hispanic. In keeping with the initial recruitment approach, a majority (71%) indicated they had served in the military (Army, $n = 12$; Marines, $n = 5$; Air Force, $n = 3$). Four participants were freshmen, five were sophomores, three were juniors, 10 were seniors, and six were graduate (master's level) students. The most commonly endorsed focal traumatic events were combat/warfare ($n = 11$), followed by the sudden death of friend/loved one ($n = 3$), assaulted by an acquaintance/stranger ($n = 2$), being physically punished growing up ($n = 2$), and unwanted sexual contact as an adult ($n = 2$).

In keeping with inclusion criteria, the average PCL-5 score for the full sample was 51.64 ($SD = 8.72$, range = 34–67), which was well above the threshold for determining probable PTSD (Blevins et al., 2015; Murphy et al., 2017). Average PHQ-9 scores were 14.64 ($SD = 5.58$, range = 4–24), indicating moderate levels of depression on average across participants. A total of 17 participants (60.7%) endorsed at least one prior head injury ($M = 3.29$, $SD = 2.31$).

At baseline, the composite mean score for credibility on the CEQ was 20.42 ($SD = 4.69$, $N = 28$), suggesting WET had strong credibility with participants at the start of treatment, and remained high at posttreatment ($n = 13$, $M = 22.15$, $SD = 6.79$). In addition, average CSQ total scores for participants at posttreatment suggested high satisfaction ($n = 13$, $M = 27.92$, $SD = 3.90$). Average mean TSQ scores for therapists were also high ($n = 5$, $M = 3.65$, $SD = 0.20$), suggesting good to excellent levels of satisfaction with the WET treatment program.

Reliable Change

The RC index was used to ensure that changes between baseline and posttreatment could not be attributed to chance or measurement error (Jacobson & Truax, 1991). RC was calculated for the primary and secondary outcome measures (PCL-5 and PHQ-9). The RC was computed for each participant as $(x_2 - x_1)/S_{\text{diff}}$ where x_2 represented the participant's posttreatment PCL-5/PHQ-9 total scores, x_1 represented the participant's baseline PCL-5/PHQ-9 total scores, and S_{diff} represented the standard error of difference between the baseline and posttreatment test scores (Christensen & Mendoza, 1986). S_{diff} was calculated based on a SD of 8.86 for the ITT sample and 7.96 for the per-protocol sample, and a 31-day test–retest reliability for the PCL-5 of $r_{xx} = .84$ (Bovin et al., 2015). An RC with an absolute value greater than 1.96 would indicate that the baseline to posttreatment change was likely due to real change in true scores and not due to measurement error alone, with negative RCs indicating improvement in PTSD and depression symptoms (Christensen & Mendoza, 1986; Jacobson & Truax, 1991). Based on these criteria, 63.6% ($n = 14$) of the ITT sample and 91.7 % ($n = 11$) of the per-protocol sample experienced RC in PTSD symptom severity. The average RC for PCL-5 for the ITT sample was −3.92 ($SD = 3.31$) and for the per-protocol sample −6.13 ($SD = 3.15$).

The RC for depression was calculated with a S_{diff} based on a SD of 5.46 for the ITT sample and 4.98 for the per-protocol sample, and a 48-hr test–retest reliability score for the PHQ-9 of $r_{xx} = .84$ (Kroenke et al., 2001). Based on the above criteria, 23.8% ($n = 5$) in the ITT sample and 42% ($n = 5$) of the per-protocol sample experienced RC in depression symptom severity. The average RC for PHQ-9 for the ITT sample was −1.03 ($SD = 1.26$) and for the per-protocol sample −1.51 ($SD = 1.31$).

Intent-to-Treat Sample

Participants in the ITT sample completed an average number of 3.91 sessions ($SD = 1.63$), with 13.6% ($n = 3$) completing only the first session and 86.3% ($n = 19$) completing more than one session. Table 1 depicts means and standard deviations for baseline measures and outcomes across time for the ITT sample. Figure 1 shows changes in total PTSD symptoms over time, across each session and assessment point. A repeated-measures ANOVA was performed using the full ITT sample ($N = 22$) to evaluate Hypotheses 1a and 1b, respectively, that WET would result in a significant reduction in PTSD symptom severity (PCL-5) from pre- to posttreatment, and treatment gains for WET would be maintained from posttreatment to the 3-month follow-up. For the analysis, 61.9% ($n = 13$) of participants had data available across multiple assessment points (i.e., baseline, posttreatment, and/or 3-month follow-up), and 40.9% ($n = 9$) only baseline assessment (for IPF-ES and CASES total scores) and session data (for PCL-5 and PHQ-9) available; missing data were imputed using LOCF. The assumption of normality was satisfactory, although Mauchly's test indicated a violation of sphericity, $\chi^2(2) = 24.45$, $p < .001$; thus, results were interpreted using Greenhouse–Geisser correction. PTSD symptom severity significantly differed across time points, $F(1.17, 24.62) = 29.64$, $p < .001$. Planned contrasts revealed a significant reduction in PTSD symptom severity from baseline to posttreatment, $F(1, 21) = 31.19$, $p < .001$, $\eta^2 = .60$ (very large effect). This significant reduction was maintained at 3-month follow-up; specifically, 3-month follow-up scores were not statistically different from posttreatment, $F(1, 21) = 1.52$, $p = .231$, and continued to be significantly lower than baseline symptoms, $F(1, 21) = 31.42$, $p < .001$, $\eta^2 = .60$ (very large effect). With respect to probable PTSD diagnosis at posttreatment, 11 (50.0%) of the ITT sample were no longer in range of a probable PTSD diagnosis on the PCL-5 and 11 (50.0%) at 3-month follow-up.

A repeated-measures ANOVA was performed to evaluate Hypotheses 2a and 2b, that there would be significant reductions in depression (PHQ-9) from baseline to posttreatment, and that these decreases would be maintained at 3-month follow-up. Sphericity was not violated as indicated by Mauchly's test, $\chi^2(2) = 3.95$, $p = .139$. As predicted, depression severity significantly differed across time points, $F(2, 42) = 10.98$, $p < .001$. Planned contrasts revealed that depression severity significantly decreased from baseline to posttreatment, $F(1, 21) = 14.65$, $p = .001$, $\eta^2 = .41$ (large effect). This significant reduction was maintained at 3-month follow-up, as 3-month follow-up scores were not significantly different from posttreatment, $F(1, 21) = 0.95$, $p = .342$, and continued to be significantly lower than at baseline, $F(1, 21) = 13.74$, $p = .001$, $\eta^2 = .41$ (large effect).

Paired-sample t-tests were performed to test exploratory Hypotheses 3a and 3b to evaluate educational outcomes (impairment and academic self-efficacy, respectively). No differences were observed from baseline ($M = 41.54$, $SD = 10.66$) to the 3-month follow-up, $M = 38.68$, $SD = 11.53$; $t(21) = 1.72$, $p = .101$, $d = 0.37$ (small effect). Similarly, no significant differences were observed in academic self-efficacy from baseline to 3-month follow-up, $t(21) = -1.43$, $p = .168$, $d = 0.31$ (small effect).

Per-Protocol Sample

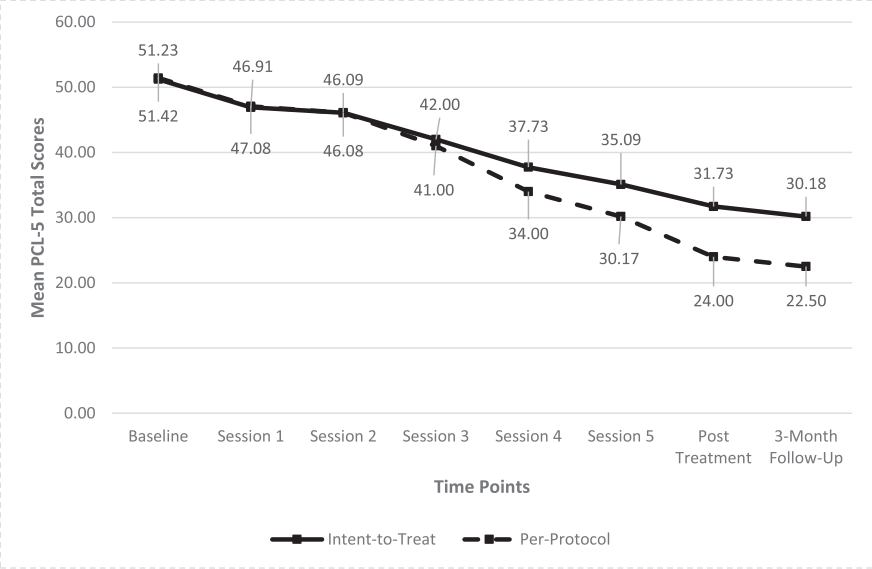
Table 2 depicts means and standard deviations for baseline measures and outcomes across time for the per-protocol sample. Figure 1 shows changes in total PTSD symptoms over time, across each session and assessment point. Repeated-measures ANOVAs were used to evaluate Hypotheses 1a and 1b. A violation of sphericity indicated by Mauchly's test, $\chi^2(2) = 7.67$, $p = .022$, led to using the Greenhouse–Geisser correction for interpretation. Mean PTSD symptom severity significantly differed across time points, $F(1.3, 14.33) = 39.72$, $p < .001$. Planned contrasts revealed that mean PTSD symptom severity decreased significantly from baseline to posttreatment, $F(1, 11) = 45.37$, $p < .001$, $\eta^2 = .81$ (very large effect). This significant reduction was maintained at 3-month follow-up, as there were no significant differences in symptoms between posttreatment and 3-month follow-up, $F(1, 11) = 0.60$, $p = .455$, and 3-month follow-up scores continued to be significantly lower than at baseline, $F(1, 11) = 42.40$, $p < .001$, $\eta^2 = .79$ (very large effect). With respect to probable PTSD diagnosis at posttreatment, nine participants (75.0%; 8/12) were no longer in the range for probable PTSD diagnosis based on the PCL-5 and eight (66.7%; 7/12) at 3-month follow-up.

Table 1
Intent-to-Treat Outcomes ($N = 22$)

Time point	Baseline		Posttreatment		3-month follow-up	
Variable	*M* (*SD*)/*n* (%)	Range[a]	*M* (*SD*)/*n* (%)	Range[a]	*M* (*SD*)/*n* (%)	Range[a]
History of TBI (yes)	15 (68.2%)					
Number of TBIs	3.53 (2.36)	1–8				
AUDIT	4.81 (5.56)	0–15				
DRRI-2-CE	45.67 (21.01)	18–85				
PCL-5	51.22 (8.86)	33–66	31.72 (17.76)***	6–63	30.18 (19.61)	1–63
PHQ-9	13.91 (5.46)	4–24	10.73 (5.77)**	1–23	10.00 (6.54)	0–23
IPF-ES	41.55 (10.67)	24–60	39.91 (14.64)	20–81	38.68 (11.53)	15–59
CASES	117.59 (21.72)	79–160	123.32 (24.22)	79–160	122.77 (24.88)	79–169

Note. TBI = traumatic brain injury; AUDIT = Alcohol Use Disorders Identification Test; DRRI-2-CE = Deployment Risk and Resiliency Inventory 2-Combat Experiences Subscale; PCL-5 = Posttraumatic Stress Disorder Checklist for *DSM-5*; PHQ-9 = Patient Health Questionnaire-9; IPF-ES = Inventory of Psychosocial Functioning-Educational Subscale; CASES = College Academic Self-Efficacy Scale; *DSM-5* = *Diagnostic and Statistical Manual for Mental Disorders*, fifth edition.
[a] Observed range.
** $p < .01$. *** $p < .001$.

Figure 1
Mean PTSD Checklist-5 (PCL-5) Total Scores Across Time by Intent-to-Treat (n = 22) and Per-Protocol (n = 12) Samples



Note. PTSD = posttraumatic stress disorder.

A repeated-measures ANOVA was performed to evaluate Hypotheses 2a and 2b for the per-protocol sample. All statistical assumption were met. Depression severity significantly differed across time points, $F(2, 22) = 9.36$, $p = .001$. Planned contrasts revealed that depression severity significantly decreased from baseline to posttreatment, $F(1, 11) = 15.87$, $p = .002$, $\eta^2 = .59$ (very large effect). This significant reduction was maintained at 3-month follow-up, $F(1, 11) = 0.82$, $p = .383$, and 3-month follow-up scores continued to be significantly lower than at baseline, $F(1, 11) = 13.18$, $p < .01$, $\eta^2 = .55$ (very large effect).

Paired-sample *t*-tests were performed to test exploratory Hypotheses 3a and 3b. No significant differences were observed in educational impairment from baseline to 3-month follow-up, $t(11) = 1.37$, $p = .198$, $d = 0.40$ (small effect). Similarly, no significant differences were observed in academic self-efficacy from baseline to 3-month follow-up, $t(11) = -1.15$, $p = .274$, $d = 0.33$ (small effect).

Qualitative Analysis of Student Interviews

A total of 13 students completed the qualitative interview after completing treatment. This included all 12 of the study completers in the per-protocol sample along with one participant from the ITT sample who completed treatment but missed the posttreatment assessment and completed the 3-month follow-up interview.

During the qualitative interviews, the majority of participants (92.3%; 12/13) indicated that participating in WET was beneficial.

Table 2
Per-Protocol Outcomes (n = 12)

Time point	Baseline		Posttreatment		3-month follow-up	
Variable	*M* (*SD*)/*n* (%)	Range[a]	*M* (*SD*)/*n* (%)	Range[a]	*M* (*SD*)/*n* (%)	Range[a]
History of TBI (yes)	8 (66.7%)					
Number of TBIs	4.00 (2.62)	1–8				
AUDIT	5.42 (5.78)	0–14				
DRRI-2-CE	47.33 (24.47)	17–84				
PCL-5	51.42 (7.96)	38–61	24.00 (16.04)***	6–62	22.50 (18.87)	1–61
PHQ-9	13.42 (4.98)	5–21	9.17 (5.34)**	1–20	7.92 (6.45)	0–21
IP-ES	40.08 (12.33)	24–60	38.88 (20.15)	20–81	36. 42 (12.7)	15–59
CASES	122.33 (16.19)	98–147	131.55 (18.01)	94–160	129.67 (22.12)	84–169

Note. TBI = traumatic brain injury; AUDIT = Alcohol Use Disorders Identification Test; DRRI-2-CE = Deployment Risk and Resiliency Inventory 2-Combat Exposure Subscale; PCL-5 = Posttraumatic Stress Disorder Checklist for *DSM-5*; PHQ-9 = Patient Health Questionnaire 9; IPF-ES = Inventory of Psychosocial Functioning-Educational Subscale; CASES = College Academic Self-Efficacy Scale; *DSM-5* = *Diagnostic and Statistical Manual for Mental Disorders*, fifth edition.
[a] Observed range.
** $p < .01$. *** $p < .001$.

Three participants mentioned that the written modality of treatment provided an easier or more comfortable method to process their traumatic experiences (e.g., "I think it's a really safe way to approach trauma. [WET's] less intimidating [. . .] than having to verbally explain yourself to another person"; "I liked it better putting it on paper [as] it was easier for me to get that anger out"). One participant expressed appreciation for the time-limited writing (i.e., 30 min/session) compared to lengthier journaling in which they felt they would get off task. However, several participants ($n = 4$) described being initially skeptical of the treatment and three mentioned the first few sessions were difficult. One participant shared:

> I think I was a little skeptical at first in the beginning, but I would say right about at [. . .] the second session I started sensing something better, because I started recalling more of the details by then.

When asked if there were particular aspects of the WET that they would change, about half (46.2%; 6/13) indicated that they would not make any changes. The other half (46.2%; 6/13) recommended specific changes. Three participants wanted more time within the therapy session to talk with the therapists (e.g., to address their emotional state; more "talk therapy"). Conversely, three stated that they wished they had more time to write in session (one of whom was experiencing memory difficulties attributed to deployment-related head injuries). One participant also expressed desire to write about previous and subsequent traumatic events, instead of solely focusing on the one identified trauma event within the sessions, as per the WET protocol. With respect to scheduling, three participants preferred scheduling sessions during breaks within the academic year (e.g., winter and summer breaks) or during the evening or weekends due to work schedules. When asked about implementing WET in the college environment, the majority (76.9%; 10/13) expressed that WET should be used in college settings in the future; the remaining three did not directly answer this question. One participant mentioned the writing aspect of WET as particularly appropriate: "For the university I think that it is especially valid because you are [. . .] in an academic environment and [. . .] you're writing as well."

Qualitative Analysis of Therapist Interviews

Qualitative analysis revealed that therapists perceived both benefits and challenges with administering WET within a student counseling center. When asked about their overall experience delivering the treatment, therapists mentioned that WET was easy to learn and administer ($n = 3$) and worked well with their training and theoretical background ($n = 4$). One counselor highlighted that the weekly case consultation received during the study was "really important" and "key" in adopting WET and building confidence, which is consistent with the training and dissemination literature (Rosen et al., 2017). In addition, two therapists mentioned that WET was ideal for those with busy schedules because they could work on other activities while students were writing, and that the format was particularly appropriate for a student population given the writing modality ($n = 3$) and short-term treatment length ($n = 5$). One therapist stated:

> I think [WET] fits within an academic setting. Because you can get [5 sessions] done in a semester. And it does not have to bleed over. Whereas if you're doing [. . .] a 12-session treatment and you start late in the semester, you're going to have to continue it over a break or continue when they come back over the following semester.

Challenges expressed by therapists were primarily related to the student counseling center setting and scheduling. Two therapists indicated it was difficult to find separate space in their counseling center for the participant to write or to find an alternative space to continue working as the participant completed the writing session alone in the therapists' office.[1] One recommended that a designated writing room would be helpful. In line with participant responses, difficulty scheduling due to participants' obligations inside and outside academia was a repeated theme for therapists ($n = 4$). Specific to veteran students, one therapist stated, "A lot of the student veterans [. . .] just have complicated life situations; they work, they have families." Finally, two therapists remarked that scheduling weekly sessions was challenging in a student counseling services environment. However, they also indicated that, while WET may cause initial strain on scheduling, the briefness of the treatment allowed for more flexibility in scheduling with future clients. Two therapists recommended staggering treatment sessions (e.g., meet with one student while the other writes) in order improve scheduling efficiency and increased access.

Discussion

Implementing and disseminating empirically supported treatments for PTSD within student counseling centers is critical to help students with PTSD and to foster their educational success. Although WET has empirical support for treating PTSD (cf. Sloan & Marx, 2019), it has never been tested with clinicians within a university counseling center environment, which has unique constraints associated with the academic calendar (e.g., exam schedules, semester timeline, and breaks). Findings from this pilot study supported the utility of WET. As predicted, participants experienced significant reductions in both PTSD and depressive symptoms from baseline to posttreatment (large to very large effect sizes) and these reductions were maintained 3 months later. These findings are in line with previous PTSD treatment outcome studies demonstrating reduction in PTSD symptoms as well as additional beneficial reductions in depressive symptoms (e.g., Hien et al., 2009; Resick et al., 2015; Sloan et al., 2018; Thompson-Hollands et al., 2018). The improvement in depressive symptoms is noteworthy because sudden improvements in depression during PTSD treatment predict better treatment outcomes (Keller et al., 2014).

Contrary to predictions, educational impairment and academic self-efficacy did not improve during the 3-month interval. Although symptoms of PTSD and depression are known to contribute to educational impairment (Boyraz et al., 2016; Morissette et al., 2019), more time may be needed before reductions in symptoms transfer to improvements in educational outcomes. That is, remission of PTSD symptoms may not necessarily immediately translate to better studying skills or getting along with classmates and/or instructors, as assessed by the IPF Educational subscale. Students may still need assistance with organization, note-taking, study skills, writing, testing, etc. to improve educational outcomes and self-efficacy. Future research with longer follow-up periods should be

[1] Although WET was originally designed to have patients write without the presence of the therapist in the room, the therapist can remain in the room (Sloan & Marx, 2019).

conducted to determine whether reductions in PTSD and depressive symptoms following treatment translate to improved educational outcomes. Further, findings raise the important question as to whether more directive interventions to target educational functioning are needed in addition to PTSD treatment.

Qualitative data paralleled the quantitative measures of high credibility and satisfaction with WET by both college students and therapists. Participants generally reported that they believed WET was beneficial and that a writing intervention was well suited to the university environment. The qualitative data also suggested potential adaptations to foster uptake within student counseling environments. First, some participants were skeptical about the efficacy of WET before initiating treatment, but acknowledged they noticed improvements after two treatment sessions. Thus, clinicians should prepare students for this possible experience, which may help set appropriate expectations and prevent dropout. In addition, although they did like the writing aspect of the treatment, half of the participants suggested changes be made to WET. Of note, three participants indicated that they would have liked more time to talk about the writing in therapy. The WET protocol is deliberately brief in this regard, with the emphasis on exposing participants to their emotions and detailed thoughts about their traumatic event through the writing. Three participants also wanted more sessions and longer time to write. Although writing for 30 min could be fatiguing for some, having extra time could be valuable for those with head injuries, and warrants further investigation, although the majority (60.7%; 17/28) of the sample endorsed having had a head injury and strong treatment effects were still observed. These findings are in keeping with data indicating that mild TBI does not interfere with CPT outcomes (Crocker et al., 2019).

Therapists likewise believed that WET was very amenable to the university counseling services setting. The brief length of the treatment sessions was a plus and they were able to accomplish other important work (e.g., documentation) while participants were writing. Although weekly/biweekly sessions were sometimes a challenge to schedule, they also indicated that the brevity of WET allowed room in their schedules to treat other patients. Therapists offered an interesting recommendation to meet the challenge of limited available treatment slots—staggering WET sessions would allow the treatment provider to care for multiple individuals within a relatively brief timeframe. This would require dedicated space for participants to write, allowing therapists to manage other work simultaneously and efficiently. Finally, student counseling therapists needed to account for the academic schedule when offering treatment. Importantly, WET can be flexibly delivered once or twice per week, which can help students manage midterms, finals, and semester breaks (e.g., scheduling two times per week during lighter studying weeks or prior to a semester break, and once a week during heavier weeks). However, although meeting twice a week could help with completion of the treatment before the semester ends, it could potentially increase the chance of dropout due to finals week being a high-pressure study time. Navigating and discussing the logistics of scheduling with student patients is critical.

A main strength of this study was its hybrid efficacy–effectiveness design in which professional university counseling center therapists received extensive training and case consultation in delivering WET according to protocol. However, several limitations should be considered when interpreting these findings. First, this was an open trial of real-world delivery of WET, and thus, there was no control comparison treatment and fidelity of therapist treatment delivery was not assessed. Second, the majority of the sample included student veterans who are considered nontraditional students and likely to be older than traditional college students (i.e., 18–22 years), which could limit generalizability. Third, as a preliminary study, the sample size was small, and thus, findings may not generalize across all students with PTSD and university counseling center settings. The small sample size is notable in the context of the observed dropout rate (50.0% total drop out across all study time points and 33.3% drop out after starting treatment), which was considerably higher than prior WET studies (6.3%–14%; Sloan et al., 2012, 2013, 2018). However, the current treatment dropout rate is consistent with other evidence-based treatments that include verbal or written accounts of a trauma, such as CPT (27%; Resick et al., 2002) and PE (32%–38%; Belleau et al., 2017; Foa et al., 2005), and such rates are typical of university counseling centers (30%; Swift et al., 2012). In addition, the pilot study utilizing CPT within a university counseling center experienced a higher study dropout rate (53.8%), albeit the number of treatment sessions were greater than WET (12 vs. 5 sessions; Wilkinson, Von Linden, et al., 2017). Observed dropout rates could be related to specific challenges associated with college settings, including that students may face multiple conflicting demands from school, work, and family (Najavits, 2015). Anecdotally, participants who enrolled in the study toward the end of the semester tended to drop out before attending treatment or during early sessions of WET. Fractured continuity in treatment scheduling (due to final exams, summer work or travel) may have made it difficult to communicate and reengage with these participants to start or come back into treatment. With that said, for some participants, starting at the end of a semester was not an obstacle, as WET allowed for flexibility with scheduling the treatment sessions (i.e., scheduling two sessions per week as opposed to one). In some instances, this enabled participants to complete the treatment within their available timeframe (e.g., before the semester ending) and prevented the possibility of dropping out of treatment due to graduation or intersession breaks. Unfortunately, despite best efforts, research therapists and staff were unable to reach many participants who did not complete the full treatment to conduct the qualitative interviews. Feedback from noncompleters and reasons for dropout would be particularly informative to guide future initiatives for outreach and treatment retention.

Another limitation of the study concerns the use of a self-report measure for PTSD rather than clinician-administered diagnostic interview, which was a deliberate choice to foster feasibility in a counseling services center. The PCL-5 was chosen because it correlates highly with the Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5; Weathers et al., 2018), yet has the advantage of not requiring a trained interviewer/clinician to administer the questionnaire. In addition, administering CAPS-5 can be time consuming (45+ min), and some university counseling centers are limited in the number of sessions they can provide to students (Artime & Buchholz, 2016). However, a trade-off to using the PCL-5 was that PTSD was not diagnosed by a clinician, and two participants (7.1%; 2/28) were withdrawn from the study by their therapist because although they met the PCL-5 cutoff score for study eligibility, it was subsequently determined that another condition should be the primary focus of treatment. Thus, if counseling centers replicate

this procedure, they should note this as a limitation when triaging students to treatment. Finally, it was unclear why the baseline PCL-5 had fairly low, albeit still acceptable, internal consistency (Cronbach's $\alpha = .69$). Closer inspection of the PCL-5 indicated that internal consistency was very high at other time points (.96 at posttreatment and .96 at 3-month follow-up), making this finding even more perplexing. Notably, participants within the ITT or per-protocol sample on average did not meet the threshold for RC on depression symptom severity, and only five participants met criteria for RC. This means even though repeated-measures analyses indicate participants experienced significant decreases in depression symptoms severity, measurement error may have biased results.

Collectively, these findings provide preliminary support for the utility of WET within student counseling centers. Future studies are needed that include fully powered, randomized control trial designs with longer follow-up periods, a broader range of academic outcomes, and which test whether addressing PTSD alone is sufficient or if additional directive interventions for educational functioning are necessary to foster academic success. In addition, understanding ways to improve treatment retention among students with PTSD who are balancing competing demands of academics, work, and health are imperative. Academic settings, and student counseling centers in particular, represent an important context for outreach to students with PTSD and to improve access to best treatment practices.

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Received November 5, 2020
Revision received November 4, 2021
Accepted November 5, 2021 ■