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Effectiveness of Seeking Safety for Co-Occurring Posttraumatic Stress Disorder and Substance Use

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Abstract

The authors evaluated the Seeking Safety program's effectiveness for treating posttraumatic stress disorder (PTSD) and substance use symptoms across 12 between-groups studies (N = 1,997 participants). Separate meta-analytic procedures for studies implementing wait list/no treatment (n = 1,042) or alternative treatments (n =

1,801) yielded medium effect sizes for Seeking Safety for decreasing symptoms of PTSD and modest effects for decreasing symptoms of substance use. Limitations of the findings and implications for counselors are discussed.

Keyword:

Seeking Safety; posttraumatic stress disorder; substance use; research

Posttraumatic stress disorder (PTSD) is a stressor- and trauma-related disorder that can occur at any point within a person's life span (American Psychiatric Association [APA], 2013). Although differential diagnostic criteria are implemented for individuals who are above or below age 6 (APA, 2013), PTSD is generally the result of experiencing, witnessing, or learning about a traumatic event. The resulting symptoms of intrusive thoughts, psychological distress, physiological reactions, dissociation, and negative beliefs about oneself and the world are estimated to affect 7.7 million adults in the United States and are more likely to develop in women than in men (Kessler, Chiu, Demler, & Walters, [28] ; Kilpatrick et al., [29]). Because of the significant impact that PTSD can have on client functioning and well-being, counselors have a responsibility to select efficacious treatments that are culturally responsive and developmentally appropriate.

Treatment for clients with PTSD can be complicated by the incidence of co-occurring substance use disorders (Ullman, Relyea, Peter-Hagene, & Vasquez, [41] ; Walsh et al., [43]). Boden et al. (2011) detected that as many as 35% to 50% of individuals diagnosed with PTSD also meet the criteria for a substance use disorder. Boden and colleagues also reported that individuals with co-occurring PTSD and substance use disorders tend to have more severe substance use and poorer treatment outcomes than do individuals with PTSD or substance use disorders alone. Additionally, there are higher dropout rates within substance use treatment programs among individuals with a history of traumatic experiences (Amaro, Chernoff, Brown, Arevalo, & Gatz, [1]). These findings are alarming when considering that, without effective treatment, individuals with co-occurring PTSD and substance use disorders are at notable risk for academic dropout (Breslau, Miller, Chung, & Schweitzer, [9]), unemployment (Henkel, [25]), incarceration (Nowotny, Belknap, Lynch, & DeHart, [37]), homelessness (Palepu et al., [38]) and divorce (Breslau et al., [10]).

To mitigate these outcomes, researchers (Cox, Lenz, & James, [16] ; Donovan, Padin-Rivera, & Kowaliw, [18] ; Triffleman, Carroll, & Kellogg, [40]) have proposed several counseling approaches based on integrating a variety of interventions within a cognitive behavior therapy (CBT) framework. Across all approaches, there is an emphasis on identifying the triggers of PTSD symptoms, learning adaptive coping skills, and preventing relapse. Although many approaches purport to be effective at remediating PTSD and substance use symptoms, counselors are compelled to use those approaches that are supported by robust empirical findings when compared with wait list/no treatment or alternative treatments (American Counseling Association, 2014; Wampold, Lichentenberg, & Waehler, [44]).

Seeking Safety

Seeking Safety (Najavits, [34]) is a manualized therapy program designed for the treatment of individuals with co-occurring PTSD and substance use symptoms. Seeking Safety has been associated with a substantial empirical base identifying treatment results with multiple populations, including people with disabilities (Anderson & Najavits, [5]), military veterans (Boden et al., 2011; Desai, Harpaz-Rotem, Najavits, & Rosenheck, 2008), adult survivors of childhood sexual abuse (Ghee, Bolling, & Johnson, 2009), incarcerated women (Lynch, Heath, Mathews, & Cepeda, 2012), and adolescent girls (Najavits, Gallop, & Weiss, 2006). Seeking Safety is based on cognitive behavior principles and incorporates psychoeducation modules to educate clients about the link between trauma, substance use, and coping skills (Najavits, [34]).

The Seeking Safety program is designed to be integrated with other treatments and can be implemented in an individual or a group format across various settings (Najavits, [34]). A fundamental tenet of the program is the belief that integrated treatment for co-occurring PTSD and substance use disorders is more effective and yields better results compared with treating each disorder separately (Najavits et al., 2006). Several studies have supported the increased effectiveness of an integrated approach based on retention and attendance in treatment (Amaro et al., [1] Boden et al., 2011), reduction of PTSD symptoms (Anderson & Najavits, [5] ; Boden et al., 2011; Cocozza et al., [12] and reduction in substance use (Cocozza et al., [12] The core concepts of this treatment include (a) staying safe, (b) self-respect, (c) using coping skills to replace substance use, (d) making the future better than the present, (e) trust, (f) active self-care, (g) identifying safe people who can be helpful, (h) becoming substance free while healing from PTSD, (i) trying something different, and (j) persistence in the face of adversity (Najavits, [34]).

The program manual consists of 25 present-focused sessions that do not need to be followed in a specific order, thereby allowing flexibility for counselors. Although the content of the manual can be adapted based on the context where it is used, there are guidelines outlined for the preparation and process of the sessions. When counselors have less than 25 sessions to provide treatment, Najavits ([34]) encouraged including one or more of the following essential topics: (a) safety, (b) PTSD: taking back your power, (c) when substances control you, (d) detaching from emotional pain, and (e) asking for help. It is recommended that counselors attend a 12-step-based program at least once, seek out personal support, and apply the skills to their personal lives as a way to understand the material and become familiar with personal issues.

Clients control the direction that each session takes with guidance and support from the counselor. Sessions begin with a check-in, when clients identify if they have engaged in any unsafe behavior. During the check-in, clients also identify a good coping skill they used, describe their present feeling state, and provide an update on progress with past commitments and use of community resources. Clients then read a quote intended as the inspiration for session content and transitional point into the topic. Each client is provided with handouts related to session topics and a safe coping sheet to explore positive coping options. What the client considers most relevant within session topics is identified so that it can be addressed during the session. The content of handouts is processed with the counselor, who draws on his or her clinical expertise and familiarity with the client. At the end of each session, clients are asked to do a checkout, during which they identify one thing that they learned or state any problem with the session. Clients then indicate their new commitment and a community resource to contact.

During treatment, clients are supported in making their personal safety the first priority principle while concurrently addressing PTSD and substance use concerns. This construct of safety can include making life changes such as abstinence from substances, addressing suicidal ideations and self-harm, lowering the risk of HIV exposure, and leaving dangerous relationships. The second principle emphasizes the importance of integrated treatment for PTSD and substance use in this model. Treatment for both disorders occurs simultaneously, and there is a focus on helping clients understand these disorders, how they interact, and how they are affecting the present experiences. Integrated treatment is psychoeducational, and detailed discussions about past trauma are specifically prohibited in the Seeking Safety program. The third principle, a focus on ideals, is integrated into each session to offer clients hope and motivation by addressing the demoralization and loss of ideals that are often associated with trauma. The fourth principle is addressed through a combination of CBT, interpersonal topics, and ongoing case management that begins from the first day of treatment. The fifth principle of Seeking Safety is the attention placed on the process of the counselor. The counselor's characteristics are a vital component of the treatment process, and features to address this are built into each session.

When developing the Seeking Safety program, Najavits ([34]) placed a premium on measurable outcomes and functional recovery for clients who have contributed to a large research base. As a result, a burgeoning body of empirical studies has indicated the promising but differential effects of Seeking Safety for treating PTSD and substance use symptoms compared with wait-list control and alternative treatments (Najavits & Hien, [36]). Wampold et al. [44] suggested that although broad-level knowledge yielded from statistical hypothesis testing provides some important information, researchers have an obligation to examine scientific evidence in its entirety and aggregated appropriately to provide even-handed estimates of the treatment effect across individual studies. Wampold et al. also indicated that depictions of treatment effect are not complete without evaluation design and sample characteristics that may influence the degree of treatment effect. Given the relatively neophyte nature of Seeking Safety as a treatment modality, aggregated estimates of Seeking Safety treatment effect and information regarding the relationship between study design and sample characteristics are unavailable for counselors to consider. Fortunately, contemporary scholars (Garg, Hackam, & Tonelli, [21] ; Valentine, Pigott, & Rothstein, [42]) have attributed a greater importance to including studies with meritorious internal validity and the use of prudent statistical methods when synthesizing the results of individual studies, instead of adhering to an unwritten tradition emphasizing large amounts of primary studies ($k > 30$).

Purpose of the Study and Research Questions

The purpose of this study was to evaluate the effectiveness of the Seeking Safety program for individuals receiving treatment for co-occurring PTSD and substance use symptoms. Additionally, we intended to identify visually apparent associations between sample age, ethnic identity, and type of trauma as aggregated effect size. To accomplish this, we completed a meta-analysis of identifiable, between-groups outcome studies published between 2000 and 2014 to answer three research questions: (a) To what degree is Seeking Safety effective for decreasing the primary symptoms of PTSD? (b) To what degree is Seeking Safety effective for treating the symptoms of co-occurring substance use among individuals with PTSD? and (c) What are the relationships between mean sample age, ethnic identity, and reported trauma-type moderators and aggregated effect size?

Method

We identified published and unpublished quantitative studies that evaluated the effectiveness of Seeking Safety for treating the symptoms of PTSD and co-occurring substance use among individuals diagnosed with PTSD. We coded, combined, and aggregated data from studies that met our criteria for inclusion while controlling for the influence of sample size and study quality, which resulted in an overall estimate of treatment effect for target symptoms.

Inclusion and Exclusion Criteria

Inclusion of studies within this meta-analysis was contingent on the following criteria:

- Studies reported results of a between-groups quantitative research design
- Studies were published in peer-reviewed journals, dissertations, theses, or book chapters
- Participants received treatment for PTSD symptoms consistent with the Diagnostic and Statistical Manual of Mental Disorders (4th ed., Text Revision; APA, 2000)
- Eligibility for study participation was completed by a trained mental health practitioner
- Seeking Safety was the primary therapeutic strategy reported in the study
- Participants completed standardized assessments prior to treatment (pretest) and termination (posttest)
- Mean and standard deviation data for pretest and posttest measures allowed calculation of standardized mean difference effect sizes

- Studies were published in English

Studies were excluded from our analysis if they reported single-group, single-case, intent-to-treat analyses, or correlational research design data; excluded pretest data; and did not report participant demographic information. Data reported across multiple publications were not included. We established these standards a priori to promote the inclusion of quality studies and reduce vulnerability to publication bias within our findings when estimating treatment effect. We recognize that implementing these standards likely reduced the number of studies included in our analyses; however, we regard this as a prudent strategy for reducing the “garbage in, garbage out” effect that inclusion of studies with lesser rigor may have on our findings.

Search Strategies

We implemented five search strategies to detect and include all appropriate empirical studies that reported PTSD symptom and substance use outcomes following participation in the Seeking Safety program: (a) searching electronic database, (b) conducting journal-specific searches, (c) identifying studies through seekingsafety.org, (d) reviewing reference lists, and (e) contacting primary authors to identify additional studies. The first author and a university-based library scientist independently searched PsycINFO, PubMed, Academic OneFile, Web of Science, PsycARTICLES, Google Scholar, and ProQuest Dissertations and Theses databases from 2000 to 2014. The keywords Seeking Safety were used to identify the intervention, and trauma, posttraumatic, PTSD, substance use, alcohol use, and drug use were used to identify the target population. All database searches except Google Scholar and ProQuest Dissertations and Theses were screened through the databases’ peer-reviewed function to yield relevant document abstracts.

We completed journal-specific searches to identify eligible studies included within relevant publication sources, including *Behavior Therapy; Counseling Outcome Research and Evaluation; Journal of Addictions & Offender Counseling; Journal of Aggression, Maltreatment, and Trauma; Journal of Consulting and Clinical Psychology; Journal of Counseling & Development; Journal of Mental Health Counseling; Journal of Trauma Practice; Journal of Traumatic Stress; Psychological Trauma: Theory, Research, Practice, and Policy; and The Counseling Psychologist*. Once eligible articles were identified, reference lists were reviewed to identify additional studies with potential for inclusion. Finally, primary authors of peer-reviewed articles were contacted via e-mail and solicited for any unpublished studies or other authored studies that may not have been identified during the search. All relevant articles, dissertations, theses, and abstracts that met inclusion criteria were combined using the RefWorks database software program (www.refworks.com), and redundancies among references were removed using the check duplicates function.

Coding Procedure

The first author coded article information related to study features, examined sample characteristics, and contrasted between-groups gain scores according to Cooper, Hedges, and Valentine's ([15]) guidelines. To promote accuracy, the first author developed a coding guide a priori, subjected to peer review, to verify that target variables would be included within the resulting database and implemented throughout recording data.

Outcome Measures

The dependent variables were severity of PTSD and amount of alcohol and other substance use. Effects sizes estimating magnitude of therapeutic change among PTSD symptoms were based on scores yielded from the Clinician-Administered PTSD Scale (Blake et al., [6] n = 5), PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, [45] ; n = 4), PTSD Symptoms Scale (Foa, Riggs, Dancu, & Rothbaum, [20] ; n = 1), Trauma Symptom Checklist for Children (Briere, [11] ; n = 1), and Coping Responses Inventory (Moos, [33] ; n = 1). Among studies reporting substance use findings (n = 8 of 12), effect sizes estimating the degree of therapeutic change for alcohol and drug use were based mostly on scores from the Addiction Severity Index (McLellan, Luborsky, &

Woody, [32] ; n = 5), whereas others were associated with self-reported use (n = 2) or a composite score from multiple inventories (n = 1). For studies reporting separate metrics for alcohol use and drug use, these values were aggregated to represent a combined effect size.

Statistical Methods

We completed the statistical analyses using the Comprehensive Meta-Analysis Version 2.0 software program. Specifically, standardized mean difference was computed using the unbiased effect-size metric Hedge's *g* to account for the influence of sample and sampling error within studies (Erford, Savin-Murphy, & Butler, [19]). Additionally, we controlled for differences in sample size across studies and the degree to which larger studies influence mean effect size by using the weighted invariance effect-size procedure (Lipsey & Wilson, [30]). Null hypotheses were evaluated across all effect sizes by computing confidence intervals (CIs) at the 95% level. Larger effect sizes indicated greater effectiveness of Seeking Safety in favor of alternative treatment or control group comparisons and were evaluated using the suggestions submitted by Cohen ([13]) for describing magnitudes of effect sizes as small ($\geq .20$), medium ($\geq .50$), and large ($\geq .80$).

To assess publication bias, we evaluated funnel plots and computed fail-safe *N*. Funnel plots with symmetrical distributions of effect sizes across study sample sizes indicate judicious reporting, and those that are skewed indicate reporting bias. The fail-safe *N* metric reflects the number of unpublished studies reporting no treatment effect needed to negate findings and has been regarded as a routine metric of publication bias (Erford et al., [19] Lipsey & Wilson, [30]). When the fail-safe *N* is strikingly low, it is plausible that reported mean effect sizes are biased and not characteristic of actual treatment effectiveness. Although Valentine et al. [42] suggested a required minimum of two studies to aggregate treatment effects, publication bias estimations (i.e., funnel plots and fail-safe *N*) require a minimum of three studies; therefore, in the absence of at least three studies, subgroup analysis were not computed.

Analysis of homogeneity. The homogeneity of effect-size distributions was analyzed by evaluating the Cochran's *Q* and inconsistency index (I^2). When the *Q* values are significant (i.e., $p < .05$) and I^2 is greater than 0.50, heterogeneity is assumed and moderator variables should be evaluated (Erford et al., [19] Lipsey & Wilson, [30]).

Moderator analysis. Evaluation of moderator variables in large-sample meta-analyses generally relies on meta-regression (Borenstein, Hedges, Higgins, & Rothstein, [8]), but within smaller subsamples of studies, visual scrutiny of differences between study attributes that may contribute to differences between individual effect sizes may be warranted. When a small sample of studies is available for inspection, we submit that the intent of moderator analyses is descriptive rather than based on statistically based predictive inferences. Of interest within this study were the apparent associations between participants' age, ethnic composition, and reported type of trauma within heterogeneous samples of effect sizes. To complete these analyses, we plotted effect sizes on graphs with the magnitude represented on the y-axis and categorical values of moderating variables (age, ethnic identity, and type of trauma) represented on the x-axis. Additionally, subgroup means were computed for each outcome variable.

Results

Our search strategy yielded 47 candidate articles, dissertations, and theses that warranted further inspection. After scrutinizing each of these using inclusion and exclusion criteria, we selected 12 (10 peer-reviewed publications, two doctoral dissertations) for inclusion in our analysis (see Table [NaN]). The total number of participants across studies was 1,997; of this total, 846 participants received Seeking Safety as a primary treatment, 955 received an alternative treatment modality, and 196 received no treatment or were assigned to a wait-list condition. Participants were predominantly adults (n = 1,965, 98%) who were ethnic minorities (n =

1,174, 59%) and were receiving treatment for symptoms related to multiple types of traumatic experiences (n = 1,763, 88%). All studies implemented a manualized Seeking Safety approach within the treatment condition, and seven of the 12 studies (58%) reflected data collected from studies conducted in community-based settings. Of the 12 studies included within our analyses, seven implemented alternative treatment comparisons, three used a wait-list/no-treatment condition, and two implemented an alternative treatment and wait-list/no-treatment condition. Between treatment comparison types, analyses that compared Seeking Safety with a wait-list group were based on five studies reflecting the data of 1,042 participants; analyses that compared Seeking Safety with alternative treatments were based on nine studies and reflected the data of 1,801 participants.

Table 1. Characteristics of Individual Studies Used in Meta-Analysis

Study and Summary	M Age (in Years)	Sample	Ethnicity	Type of Trauma	Type of Comparison
Boden et al. (2011, N = 98)	53.00	Men who were veterans	Black (n = 59), White (n = 19), Hispanic (n = 7), and other (n = 7)	Abuse/neglect	TAU
Compared a 24-session SS group treatment to TAU in a community setting					
Cohen & Hien (2006, N = 107)	36.17	Women with PTSD and substance abuse	Black (n = 45), White (n = 34), Latina (n = 21), and other (n = 7)	Multiple traumas	No treatment
Compared a 12-session SS and a control group over a 12-week course in a community setting					
Desai et al. (2008, N = 450)	43.30	Homeless women who were veterans	Black (n = 233), White (n = 158), Hispanic (n = 31), and other (n = 28)	Multiple traumas	TAU
Examined the effectiveness of 25 sessions of SS in a community setting					
Gatz et al. (2007, N = 402)	33.21	Women with history of trauma and co-occurring disorder diagnoses	Black (n = 91), White (n = 149), Latina (n = 106), American Indian (n = 47), and other (n = 9)	Multiple traumas	TAU
Evaluated effectiveness of 31 group SS sessions in a residential treatment center					
Ghee et al. (2009, N = 86)	34.70	Women in residential substance abuse treatment with histories of childhood sexual abuse	Black (n = 40), White (n = 44), and other (n = 2)	Sexual assault	TAU
Evaluated a condensed, 6-session version of SS compared					

to standard treatment in a residential setting					
Heath (2009, N = 90)	34.96	Women who were incarcerated	White (n = 60), Hispanic (n = 11), Native American (n = 11), African American (n = 2), and other (n = 6)	Multiple traumas	Wait list
Examined a 22-week SS treatment compared to wait list within a correctional facility					
Hien et al. (2004, N = 107)	37.23	Women with co-occurring substance abuse and PTSD	Black (n = 45), White (n = 40), Latina (n = 21), and other (n = 1)	Multiple traumas	Alternative treatment and no treatment
Compared 12 sessions of SS to relapse prevention and community care					
Hien et al. (2009, N = 353)	39.20	Women with comorbid PTSD and substance abuse	Black (n = 120), White (n = 161), Latina (n = 25), and other (n = 47)	Multiple traumas	Alternative treatment
Compared the effectiveness of 12 sessions of SS to Women's Health Education					
Lynch et al. (2012, N = 114)	34.17	Incarcerated women with histories of trauma and substance abuse	Black (n = 14), White (n = 96), and other (n = 4)	Multiple traumas	Wait list
Evaluated the effectiveness of biweekly SS groups with incarcerated women over 12 weeks					
Najavits et al. (2006, N = 33)	16.06	Adolescent females with comorbid PTSD and substance abuse	Black (n = 1), White (n = 26), Asian (n = 4), Hispanic (n = 1), and other (n = 1)	Sexual assault	TAU
Compared 25 sessions of SS to TAU in an outpatient setting					
Stiffler (2005, N = 108)	37.27	Women with comorbid PTSD and substance abuse	Black (n = 45), White (n = 34), Hispanic (n = 21), and other (n = 8)	Multiple traumas	Alternative treatment and no treatment
Compared biweekly individual sessions of SS to relapse prevention and no treatment over 12 weeks					

Zlotnick et al. (2009, N = 49)	34.60	Incarcerated women with comorbid PTSD and substance abuse	Black (n = 16), White (n = 23), Latina (n = 7), and other (n = 3)	Multiple traumas	TAU
Compared SS group and individual treatment to TAU over a 6- to 8-week period within a correctional facility					

1 Note. SS = Seeking Safety; TAU = treatment as usual; PTSD = posttraumatic stress disorder.

Is Seeking Safety Effective for Decreasing the Severity of PTSD Symptoms?

Analyses of the effectiveness of Seeking Safety for decreasing the severity of PTSD symptoms were based on 12 studies, yielding a total of 14 effect sizes (see Figures [NaN] and [NaN]).

Seeking Safety versus wait list. The five studies included in the analysis of Seeking Safety versus wait-list or no-treatment comparison (n = 458) yielded a mean effect size of -0.56 (95% CI $[-0.75, -0.37]$; see Figure [NaN] , upper panel), indicative of a medium effect size and suggesting that the null hypothesis can be rejected. The effect sizes within the distribution of studies were homogeneous, $Q(4) = 0.72$, $p = .94$ and $I^2 < 1.00$, indicating that less than 1% of the total variability was due to between-studies heterogeneity, and no exploration of moderating variables was warranted. This sample yielded a fail-safe N of 38, indicating that 38 unpublished studies with an effect size of zero would be needed to negate our findings.

Seeking Safety versus alternative treatments. The nine studies included in the analysis of Seeking Safety versus alternative treatments (n = 1,572) yielded a mean effect size of -0.47 (95% CI $[-1.27, 0.34]$; see Figure [NaN] , lower panel), indicative of a medium effect size. This detected CI suggests that the null hypothesis regarding treatment effect cannot be rejected. The effect sizes within the distribution of studies were substantially heterogeneous, $Q(8) = 379.49$, $p < .01$ and $I^2 = 97.98$, indicating that approximately 98% of the total variability was due to between-studies heterogeneity. Scrutiny of moderating variables of interest revealed no notable differences between studies in association with mean participant age. Inspection of the relationship between sample ethnic identity and magnitude of effect size revealed that studies with predominantly White/Caucasian samples yielded larger treatment effects ($g = -0.87$) when compared with those with predominantly minority ($g = -0.66$) or ethnically equivalent ($g = 0.36$) samples. Evaluation of effect sizes in relation to type of trauma for which participants were receiving treatment revealed that studies with participants receiving treatment for multiple types of trauma yielded notably larger treatment effects ($g = -0.62$) when compared with studies with participants receiving treatment related to sexual assault ($g = -0.17$) or war/combat-related ($g = -0.07$) traumas. This sample yielded a fail-safe N of 140, indicating that 140 unpublished studies with an effect size of zero would be needed to negate our findings.

Is Seeking Safety Effective for Decreasing the Frequency of Substance Use?

Analyses of the effectiveness of Seeking Safety for decreasing the severity of substance use were based on seven studies (see Figure [NaN]), yielding a total of 11 effects sizes related to drug use (n = 7) and alcohol consumption (n = 4) that were combined to yield seven estimations of treatment effect for decreasing substance use.

Seeking Safety versus wait list. Given that only two studies reported outcomes related to substances, aggregated effect size and moderation analyses were not computed.

Seeking Safety versus alternative treatments. The seven studies included in the analysis of Seeking Safety versus alternative treatments for decreasing substance use (n = 1,492) yielded a mean effect size of -0.19 (95% CI $[-0.52, 0.14]$; see Figure [NaN]), indicative of a small effect size and a scenario in which the null hypothesis

cannot be rejected. The effect sizes within the distribution of studies were heterogeneous, $Q(6) = 45.19$, $p < .01$ and $I^2 < 86.70$, indicating that approximately 87% of the total variability was due to between-studies heterogeneity and exploration of moderating variables was warranted. Scrutiny of moderating variables of interest revealed no notable differences between studies in association with mean participant age. However, the one study reporting treatment outcomes with adolescents (Najavits et al., 2006) yielded a much larger treatment effect ($g = -1.57$) than the aggregate of studies completed with adults ($g = -0.06$). Inspection of the relationship between sample ethnic identity and magnitude of effect size revealed that the study with a predominantly White/Caucasian sample yielded larger treatment effects ($g = -1.57$) when compared with studies with predominantly minority ($g = -0.06$) or ethnically equivalent ($g = -0.04$) samples. Evaluation of effect sizes in relation to type of trauma for which participants were receiving treatment revealed that the study reporting treatment of participants who had experienced sexual assault yielded notably larger treatment effects ($g = -1.57$) when compared with studies of participants receiving treatment related to abuse/neglect ($g = -0.20$) or multiple types of traumas ($g = -0.03$). This sample yielded a fail-safe N of 10, indicating that 10 unpublished studies with an effect size of zero would be needed to negate our findings.

Discussion

This meta-analysis of studies evaluating the effectiveness of Seeking Safety for reducing the severity of PTSD and co-occurring substance use symptoms yielded mixed, yet promising findings. Among the 12 studies identified, mean effect sizes related to PTSD symptom reduction were robust across comparison group types (i.e., wait list or alternative treatments). This is promising when considering the physical and psychosocial disparities noted by individuals with prolonged experiences of PTSD symptoms. Although our findings related to wait-list comparisons are regarded as unequivocal, the mean effect-size CIs associated with comparisons to alternative treatments did allow for rejection of the null hypothesis. On a programmatic level, one explanation for this finding is that Seeking Safety guidelines encourage development of coping skills for symptom prevention and management but dissuade in-depth processing of past traumatic experiences. It is plausible that the alternative treatments implemented within our study sample may have provided an environment that addressed clients' core issues that trigger PTSD symptoms to a greater degree.

On a client level, we conjecture that despite Seeking Safety's demonstration as promising across study types, aspects of client background may mediate treatment effects when compared with alternative treatments. Although moderator analyses revealed no differences associated with mean sample age, the same was not true for ethnic identity or type of trauma reported within studies. Within these subgroup analyses, the highest treatment effects were noted among study samples that were either predominantly Caucasian/White or composed of minorities, rather than equally represented. One possible explanation may be that without individual client culture specifically accounted for within group settings, interpretation of session materials by clients may trend toward a general application that does not resonate with some clientele. Furthermore, studies that reported the findings of individuals reporting multiple types of traumas tended to yield larger effect sizes when compared with studies that were intended to reduce PTSD symptoms exclusively associated with sexual assault (Ghee et al., 2009; Najavits et al., 2006) or war/combat (Boden et al., 2011). It is plausible that without in-depth processing of traumatic events, clients reporting long-term trauma exposure, such as sexual abuse over a lifetime or multiple military deployments, do not demonstrate maximum benefits from present-focused interventions. Therefore, counselors may want to account for cultural differences between clients within group settings and consider adjunctive services for clients with severe trauma dynamics that provide processing of core issues that limit the degree of symptom remediation.

Evaluation of mean effect sizes for Seeking Safety interventions for decreasing frequency of substance use yielded nondefensible estimations of treatment effect. For alternative treatment comparison groups, Seeking

Safety was slightly more effective than other interventions; however, we could not reject the null hypothesis related to this effect. Given the deleterious associations of co-occurring PTSD and substance use with academic dropout (Breslau et al., [9] unemployment (Henkel, [25]), incarceration (Nowotny et al., [37] homelessness (Palepu et al., [38] and divorce (Breslau et al., [10] it is possible that treatment effectiveness may be maximized for clients through additional supports.

On a programmatic level, one explanation may be that through promoting emotional regulation, an emphasis on abstinence may not be overtly expressed across sessions. This reasoning may be sensible when we consider that not all of the 25 Seeking Safety sessions explicitly address substance use. On a client level, moderator analyses revealed that samples composed of younger individuals showed greater treatment effects for substance use. This finding may be attributable to the developmental period of younger participants who, unlike their older counterparts, may not have established a lifestyle characterized by substance use. Furthermore, differential findings across the predominant ethnic identity of samples indicated that the largely Caucasian/White sample decreased substance use to a greater degree than other groups, yet predominantly ethnic minority or evenly represented groups tended to decrease consumption to a similar degree. We submit that rather than being attributed to cultural values associated with ethnic identity, these findings may best be explained through examining the type of adjunctive services provided to participants and what types of treatment goals were included. Consistent with Najavits's ([34]) suggestion, Seeking Safety treatment effects may be maximized by integrating adjunctive services such as Alcoholic Anonymous or Narcotics Anonymous for those clients with substantially complex substance use issues.

Limitations and Recommendations for Future Research

Although this meta-analysis yielded some preliminary findings for consideration, there are several caveats related to the sample of studies retrieved and the measurement. First, although we are confident that our criteria for internal validity standards assured the required rigor to make causal inferences, our overall sample of studies was modest ($k = 12$), and a larger sample ($k = 30$) may have yielded alternative estimates of aggregated treatment effect. Additionally, a greater sample size would promote the use of meta-regression and interpretation of associated point estimates for exploring moderator variables rather than descriptive review of means between categories of study characteristics. This problem was particularly relevant to the inspection of substance use outcomes, which tended to be reported to a smaller degree than PTSD symptomatology. Next, our search yielded two studies that did not include sufficient statistical data for inclusion in our analysis, and we were unable to retrieve the information when we contacted the primary authors. For this reason, we encourage future researchers to report specific demographic frequencies, means and standard deviations for scores rather than ranges, and details regarding treatment interventions that assist in the aggregation of treatment outcomes across studies. As more between-groups studies become available, a reanalysis of mean effect sizes is certainly warranted. Finally, among the 12 studies included in our analysis, 11 of the samples were composed entirely of women. Therefore, it is prudent to suggest that our findings do not generalize to men, and we encourage future researchers to implement programs with men to identify the degree that Seeking Safety is a supportive resource for them. Increased representation of men within the empirical literature will allow for comparisons of treatment effect between biological sexes and explorations of intervention characteristics that promote optimal outcomes.

The studies included in our meta-analysis evaluated comparisons of treatment gain from pretreatment to termination. Although these measurement intervals are useful information for counselors, studies that provide follow-up measures at meaningful intervals may demonstrate the degree that treatment effects are retained and support causal inferences. Furthermore, implementing single-case research designs and studies evaluating dosage intervals may provide a greater understanding of the course of improvement within programming. In each of these quantitative research scenarios, it will be prudent for researchers to begin evaluating treatment

effects using newer assessments affiliated with the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (APA, 2013) criteria for PTSD. It is plausible that the magnitude of treatment effects may be influenced by the emphasis on how an individual experienced a traumatic event and the added dimension of persistent negative cognitions to the previous criteria. Finally, the perspectives regarding evidence-based practice for implementing Seeking Safety may be developed through qualitative accounts that describe client cultural variables that promote responsiveness to treatment and counselor perspectives related to clinical decision making.

Implications for Counselors

The Seeking Safety program provides counselors with a descriptive and flexible approach for treating the complexities of co-occurring PTSD and substance use symptoms that has a substantial base of empirical support. We offer some general suggestions to counselors considering whether to use this program. First, most of the empirical evidence is associated with women. We do not suggest that the treatment effect may not be noted with men but that expectations should be contextualized appropriately. Second, a strength of the Seeking Safety program is that counselors can adapt the content to meet emerging needs that are present in a client's life. Thus, it is important for counselors to be mindful of their own biases when making modifications to the materials or deciding what topic is relevant for a particular session. Third, given that PTSD symptoms may have a differential effect on client functioning, some materials may seem incongruent to the experiences of clients with lesser expressions of the disorder. Finally, because the program features a case management component, counselors implementing this program should be familiar with community resources and be able to provide the linking and referral services that will best support clients with more marked symptoms of PTSD and substance use.

Conclusion

The Seeking Safety program provides counselors with a flexible, manualized treatment option for teaching coping skills to individuals experiencing co-occurring PTSD and substance use symptoms (Najavits, [34]). The results of our meta-analysis indicate that this intervention is more efficacious for treating PTSD symptoms than no treatment or many alternative treatments. However, assumptions about this program's efficacy when compared with alternative treatments are guarded until additional studies confirming our findings emerge. We also detected that Seeking Safety was highly associated with decreased drug use but that adjunctive services may be appropriate for clients whose treatment plans include abstinence from alcohol consumption. We regard our findings as preliminary and suggest that more research is needed to examine treatment effects related to men, dosage, and moderating variables.

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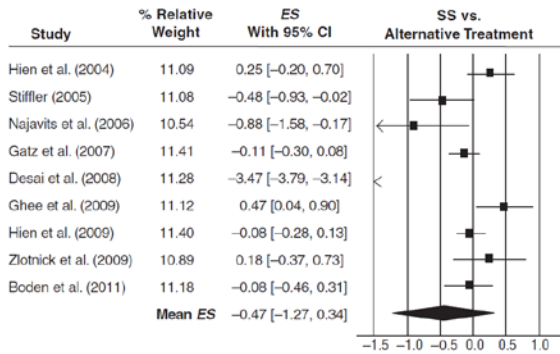
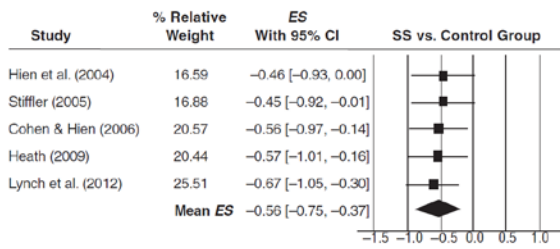


Figure 1. Effect Size (ES) and 95% Confidence Interval (CI) Values for Studies Evaluating Seeking Safety (SS) Effectiveness for Decreasing Posttraumatic Stress Disorder (PTSD) Symptom Severity Using Control and Alternative Treatment Groups Note. Negative ES values indicate that treatment outcomes favor the SS program; positive ES values indicate that treatment outcomes favor no treatment/wait-list controls or alternative treatments.

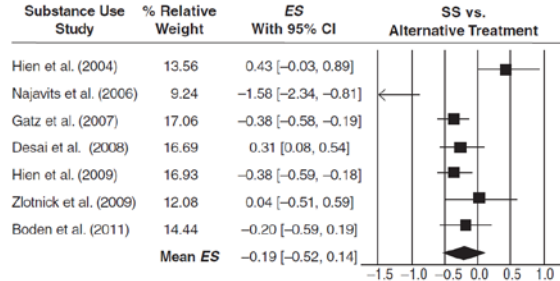


Figure 2: Effect Size (ES) and 95% Confidence Interval (CI) Values for Studies Evaluating Seeking Safety (SS) Effectiveness for Decreasing Substance Use Using Alternative Treatment Groups Note. Negative ES values indicate that treatment outcomes favor the SS program; positive ES values indicate that treatment outcomes favor no treatment/wait-list controls or alternative treatments.