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Exposure Therapy Beliefs and Utilization for Treatment of PTSD: A Survey of Licensed Mental Health Providers

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Exposure-based therapies for posttraumatic stress disorder (PTSD) and anxiety disorders remain underutilized, despite their effectiveness and widescale dissemination efforts. This study surveyed a broad range of licensed providers (N = 155) to examine rates at which prolonged exposure (PE) and other interventions are used to treat PTSD and to investigate provider characteristics linked to exposure beliefs and utilization. While 92.3% of clinicians reported understanding of or training in exposure, only 55.5% of providers reported use of PE to treat PTSD. Clinicians with current cognitive behavioral therapy (CBT) orientation, CBT training orientation, a doctoral degree, and training in PE endorsed greater likelihood of exposure utilization for PTSD (ps < .001, ds = 0.82–1.98) and less negative beliefs about exposure (ps < .01, ds = 0.55–2.00). Exposure beliefs also differed based on healthcare setting (p < .001). Among providers trained in exposure (n = 106), master's degree and non-CBT current theoretical orientation were associated with high utilization yet also negative beliefs. Results suggest exposure training, accurate beliefs, and utilization still lag among some groups of providers. Additionally, negative beliefs and misunderstanding of the exposure rationale may persist even among providers who are trained and report high utilization.

Keywords: posttraumatic stress disorder; prolonged exposure therapy; dissemination and implementation

THE DISCREPANCY BETWEEN the proportion of the population requiring mental health services and those who actually receive them—known as the treatment gap (Kazdin, 2017)—is observed throughout virtually all mental health conditions (Patel et al., 2010) and reflects a clear imperative to more effectively reach and treat those in need. This includes posttraumatic stress disorder (PTSD), which, despite its prevalence and impact on individuals and broader society (Kessler et al., 2005), often goes untreated in the United States (Wang et al., 2005). Compounding this issue is evidence that among the minority of adults with PTSD who do receive treatment, the interventions that have the strongest empirical support are frequently not implemented. Exposure-based, trauma-focused interventions——such as prolonged exposure (PE; Foa et al., 2007)—are recommended as first-line interventions across all published clinical practice guidelines (Hamblen et al., 2019), yet remain underutilized (e.g., Becker et al., 2004; Lu et al., 2016; van Minnen et al., 2010). For example, a recent study documented that only 1.7% of adult patients with PTSD in a community mental health center received exposure therapy (Wolitzky-Taylor et al., 2015). Similarly, although

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utilization of PE has modestly increased in Veterans Health Administration (VHA) settings following national implementation efforts, many veterans with PTSD do not receive this treatment (e.g., Maguen et al., 2020). First-line PTSD treatments are cost-effective relative to medication (Le et al., 2014), show long-term benefit (Kline et al., 2018), and are often preferred among both civilians (e.g., Zoellner et al., 2019) and military personnel (Reger et al., 2013). Despite this, the uptake of these treatments remains a challenge in both civilian (e.g., Wolitzky-Taylor et al., 2015) and veteran (e.g., Lu et al., 2016; Maguen et al., 2020) settings, where many adults with PTSD do not receive exposure-based treatment.

Factors maintaining the science-practice gap are multifaceted, with research demonstrating that barriers to greater dissemination and implementation of evidence-based treatments occur at the patient, provider, and organizational levels (Finch et al., 2020; Foa et al., 2013; Powell et al., 2012). At the provider level, negative beliefs toward exposure (e.g., "exposure is overly distressing and potentially harmful") have consistently been linked to both lower rates of utilization and less effective implementation (Becker et al., 2004; Becker-Haimes et al., 2017; Deacon, Lickel, et al., 2013; Gunter & Whittal, 2010; Olatunji et al., 2009). Provider characteristics such as greater levels of training, cognitive behavioral therapy (CBT) theoretical orientation, younger age, doctoral degree, and familiarity with exposure-based interventions have been linked to more positive exposure beliefs and greater utilization rates (Becker-Haimes et al., 2017; Finley et al., 2015; Garcia et al., 2019; Gray et al., 2007; Harned et al., 2013; Hundt et al., 2016). However, this research has primarily examined exposure beliefs and utilization in anxiety disorders broadly (Becker-Haimes et al., 2017; Gray et al., 2007; Harned et al., 2013) or among VHA providers (Finley et al., 2015; Garcia et al., 2019; Hundt et al., 2016). Less is known about the treatment of PTSD among providers in a broader range of clinical settings, such as private practice, non-VHA hospitals, and community mental health.

In the past two decades, several important trends in treatment of PTSD support the need to examine exposure beliefs, utilization, and their determinants among providers treating PTSD across healthcare settings. First, given the efficacy of trauma-focused psychotherapy for PTSD, wide-ranging efforts have focused on increasing the dissemination and implementation of first-line PTSD treatments. In addition to systematic research programs and coordinated implementation efforts in community settings (e.g., Foa et al., 2013), a national rollout of training in PE and cognitive processing therapy (CPT; Resick et al., 2016) by the VHA was implemented in 2006 (Karlin et al., 2010). However, uptake even within VHA settings remains a target for improvement, despite large-scale training and implementation initiatives (Finley et al., 2015; Maguen et al., 2020). Another important trend in the field is the shift in doctoral training programs toward CBT and the parallel increase in providers identifying with a primarily CBT orientation (Norcross et al., 2018). However, identification with a CBT orientation is not synonymous with utilization of exposure therapy for trauma and anxiety, as therapists may report providing CBT for these conditions but primarily offer other aspects of CBT besides exposure, such as relaxation, cognitive restructuring, or mindfulness (Hipol & Deacon, 2012). Last, increasing evidence contradicts commonly held beliefs regarding contraindications for exposure therapy, which have reduced their implementation. Specifically, although comorbid conditions and diagnoses such as borderline personality disorder, psychosis, major depressive disorder, substance use, dissociation, and suicidality have often been considered as contraindicated for exposure therapy (Becker et al., 2004; Osei-Bonsu et al., 2017; van Minnen et al., 2010), patients with these co-occurring conditions frequently benefit from exposure-based treatments (e.g., van Minnen et al., 2012). Additionally, commonly held concerns regarding increased risks of symptom exacerbation or substance use worsening in exposure therapy (e.g., Becker et al., 2004; Osei-Bonsu et al., 2017; van Minnen et al., 2012) have not been supported empirically (e.g., Eftekhari et al., 2020; Foa et al., 2002; Jayawickreme et al., 2014; Larsen et al., 2016; Larsen et al., 2020; Tripp et al., 2020). However, it is unclear whether this research has, in turn, positively affected beliefs and utilization likelihood of exposure for PTSD among providers.

An updated, current understanding of the therapist factors associated with exposure beliefs and implementation for PTSD would help inform future efforts toward expanding the reach of these treatments. The overarching aim of the current study was thus to conduct a survey among a broad range of licensed clinicians to evaluate the use of interventions to treat adults with PTSD and to identify therapist characteristics associated with exposure training, beliefs, and utilization likelihood. First, we examined utilization rates of various treatments for PTSD. Given evidence that

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exposure use is often low even among CBT (Hipol & Deacon, 2012) and trauma-oriented clinicians (van Minnen et al., 2010), we also examined utilization rates of other PTSD treatments within the subgroup of clinicians that reported PE utilization. Second, we examined whether clinicians differed in exposure beliefs and utilization likelihood for PTSD based on a range of provider characteristics: gender, age, years of experience, training theoretical orientation (CBT vs. non-CBT), education (doctoral or master's degree), current theoretical orientation (CBT vs. non-CBT), and healthcare setting (community mental health, VHA clinic or hospital, other hospital settings, private practice). We also examined these characteristics among the subgroup of providers trained in exposure for PTSD and/or anxiety disorders, to investigate whether training in exposure would be robust to potential differences based on these provider characteristics. Third, to gain a better understanding of current gaps in exposure training for PTSD and/or anxiety disorders, we examined differences in provider characteristics among those trained and not trained in exposure. We hypothesized that a minority of the sample would report PE utilization (Becker et al., 2004; van Minnen et al., 2010). In line with prior research (Hundt et al., 2016), we also hypothesized that clinicians with a doctoral degree, current CBT orientation, training CBT orientation, and those practicing in a hospital-based or VHA setting would report less negative beliefs toward exposure, greater likelihood of PE utilization, and would be more likely to report training in exposure for PTSD and/or anxiety disorders.

Method

PARTICIPANTS

One hundred and ninety-three participants accessed the survey and consented to participate. Of those, 38 did not complete questionnaires and were therefore excluded from analyses, which left a total sample of $N = 155$ licensed clinicians. Characteristics of the sample are presented in Table 1. Participants were recruited through both national (i.e., American Psychological Association, International Society for Traumatic Stress Studies, Association for Behavioral and Cognitive Therapies, Anxiety and Depression Association of America) and local (i.e., Ohio Psychological Association, Cleveland Psychoanalytic Institute) professional organization list serves, as well as community mental health organizations, VHA hospitals, other hospital settings, and private practices locally and nationally. Providers also were provided the option to broadly forward the survey to colleagues. Inclusion and exclusion criteria were deliberately minimal to assess therapists across a broad range of healthcare settings, training backgrounds, and theoretical orientations. The only criterion for inclusion stipulated that participants were required to be licensed mental health professionals. Data were closely monitored for duplicate names and email address; when duplicate data were entered, the most complete line of data was retained. Prior to data downloading and cleaning, identifying information was removed.

MEASURES

Clinician Demographics Questionnaire

This questionnaire assessed a range of clinician characteristics related to providers' background, training, and clinical practice. Included were age, race, gender, years of experience, type of degree, healthcare setting, current theoretical orientation, percentage of cases with PTSD, percentage of cases with anxiety disorders, percentage of cases with mood disorders, psychotherapies utilized for treating PTSD and trauma-related concerns, and dominant orientation of training program. For utilized psychotherapies, participants selected from the following list providing yes/no responses, with space provided for "other" to describe treatments used in this category: prolonged exposure therapy, cognitive processing therapy, eye movement desensitization and reprocessing, supportive counseling, medication, mindfulness/relaxation training, cognitive therapy, other. Participants were also asked about their familiarity with exposure therapy with the following question: "*How familiar are you with exposure therapy for treating PTSD and/or anxiety disorders?*" Response options ranged from one to five: (1) I am not familiar with exposure therapy; (2) I have heard about exposure therapy; (3) I understand exposure therapy; (4) I am trained in exposure therapy but do not feel comfortable administering exposure therapy; and (5) I am trained in and feel comfortable using exposure therapy. Using this variable, a dichotomous training (responses 4 and 5 collapsed) vs. no training (responses 1-3 collapsed) variable was created.

Based on providers' reported percentage of cases seen with primary PTSD, anxiety, or mood disorders, we created three dichotomous variables. These binary variables captured whether providers reported treating >50% of cases in one particular diagnostic category (i.e., PTSD, anxiety, or mood). The distribution of clinicians with caseloads comprised of a specific diagnostic category was fairly equal in the sample, where 51 (32.9%) providers reported treating PTSD primarily (>50% of the

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Table 1
Sample Characteristics (N = 155)

Characteristic	*M* (*SD*) or %
Age	40.40 (*11.45*)
Gender (% female)	68.4
Race (% Caucasian)	91.6
Degree (% Doctoral level)	60.6
Training orientation (% cognitive behavioral therapy)	65.8
Current orientation (% cognitive behavioral therapy)	72.3
Years of experience	12.75 (*10.12*)
Treatment setting	
Private practice	37.4
Community mental health	31.6
Veterans Health Administration	9.7
Other hospital setting	20.0
Exposure familiarity	
I am not familiar with exposure therapy	0.6
I have heard about exposure therapy	7.1
I understand exposure therapy	23.9
I am trained in exposure therapy but do not feel comfortable administering exposure therapy	5.2
I am trained in exposure therapy and feel comfortable using exposure therapy	63.2
Utilization of treatments for PTSD	
Prolonged exposure	55.5
Cognitive processing therapy	47.1
Eye movement desensitization and reprocessing	11.6
Supportive counseling	38.1
Mindfulness/meditation	51.6
Cognitive therapy	49.7
Other	20.0
Therapist Beliefs About Exposure Scale, range 0-84	24.74 (*15.18*)
Likelihood of utilizing exposure therapy for PTSD, range 0-10	6.63 (3.65)

Note. PTSD = posttraumatic stress disorder.

time), 52 (33.5%) reported treating anxiety primarily, and 41 (26.5%) reported treating mood primarily. There was also a minority of providers (n = 45; 29.0%) who reported not seeing any of the three diagnostic categories >50% of time. A small group of participants (n = 27; 17.4%) reported seeing >50% of their cases from two different diagnostic categories; of these 27 clinicians, five reported >50% in both PTSD and anxiety. A total of 90 clinicians (58.1%) reported seeing >50% of their cases in PTSD, anxiety, or both PTSD and anxiety.

Therapist Beliefs About Exposure Scale (TBES; Deacon, Farrell, et al., 2013)

The TBES is a 21-item, self-report measure that was used to assess therapists' beliefs about how exposure therapy may impact their patients, including perceptions that exposure therapy is intolerable, aversive, and unethical (Deacon, Farrell, et al., 2013). Scores on the TBES range from 0 to 84, with lower scores reflective of less negative beliefs toward exposure. Items are asked on a five-point Likert scale from 0 ("disagree strongly") to 4 ("agree strongly") and include statements such as, "*Asking the client to discuss traumatic memories in exposure therapy may retraumatize the client.*" The TBES has demonstrated a single-factor structure and excellent internal consistency (a's = .90–.96) and high 6-month test-retest reliability (r = .89; Deacon, Farrell, et al., 2013).

Exposure Utilization Likelihood

Participants answered a question regarding exposure therapy in one's clinical practice, adapted from Addis and Krasnow (2000) and van Minnen et al. (2010) for the current study: "*On a scale of 0 ("not likely") to 10 ("extremely likely"), given what you know about exposure therapy, how likely would you be to administer it to a patient with PTSD in your own practice or treatment setting?*"

PROCEDURES

Data in the current study were drawn from a larger project examining potential strategies designed to enhance beliefs toward exposure therapy (Klein

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et al., 2020). Participants were sent a link via email to an IRB-approved online survey on REDCap (Harris et al., 2009). Informed consent was obtained online via the survey. Participants completed the demographics questionnaire, questions about familiarity with exposure therapy, the TBES, and rated the likelihood of utilizing exposure therapy in their own clinical work. To compensate for time, participants were entered into a raffle and 20 were randomly selected to receive $20 Amazon gift cards via e-mail.

DATA ANALYTIC PLAN

Missing data were minimal (range: 0 to 2.6%), with nearly all measures missing no data. Analyses utilized *t*-tests, chi-square tests, and ANOVA. Power was calculated using G*Power (Faul et al., 2007), with analyses well-powered to detect at least moderate effects (d = 0.50).

Results

A majority of the sample was female (68.4%) and Caucasian (91.6%) and commonly reported a doctoral degree (60.6%) and CBT orientation in both training (65.8%) and current practice (72.3%). Approximately two-thirds of the sample reported training in using exposure therapy for PTSD and/or other anxiety disorders (n = 106; 68.4%). In the total sample, several notable trends in provider characteristics emerged, where healthcare setting, practice and training orientations, and terminal degree were closely associated with one another. Specifically, setting differed by degree type (χ^2[3, N = 153] = 45.70, p < .001 phi = .55), where master's-level providers most often reported working within community mental health settings (63.3%) compared to other hospital settings (8.3%), VHA (3.3%), or private practice (25.0%) settings; most doctorate-level providers reported working in private practice (46.2%), with the remainder in other hospital settings (28.0%), VHA (14.0%) and community mental health (11.8%) settings. Master's level clinicians were also less likely to report a current CBT orientation (55.0%; χ^2[1, N=151] = 17.48, p < .001, phi = .36) or CBT training orientation (53.3%; χ^2[1, N=152] = 7.52, p = .006, phi = .24) compared to doctorate-level providers (86.8% and 76.1%, respectively).

Rates of utilization of various psychotherapy interventions for PTSD are presented in Table 1. In the total sample (N = 155), roughly half of providers (n = 86; 55.5%) reported use of PE. When asked to rate their likelihood (scale of 1–10) of implementing PE with a PTSD patient, the average response among these 86 PE utilizers was 9.01 (SD = 1.88), suggesting that many of these providers were often using PE. Put differently, 91% of providers rated this variable at a likelihood of 7 or above. Among the providers in the subgroup primarily treating anxiety and/or PTSD (n = 90), percentage of PE utilization was higher (n = 62; 68.9%) relative to the total sample. Among providers reporting training in PE (n = 106), a majority but not all (n = 84; 79.2%) reported PE utilization in current practice.

Among the 86 providers in the sample who reported use of PE, utilization of other psychotherapy interventions varied broadly; 52% reported use of CPT, 36% cognitive therapy, 35% mindfulness and meditation techniques, 17% supportive counseling, and 7% EMDR. Approximately 17% of providers also reported using "other" interventions for treatment of PTSD; examination of qualitative responses within this category included a mix of other second-wave and third-wave CBT interventions (e.g., skills training in affective and interpersonal regulation [Cloitre et al., 2002]; seeking safety [Najavits, 2002]; dialectical behavior therapy [Linehan, 2014]; acceptance and commitment therapy [Hayes et al., 2012]) and broader, often more eclectic therapies (e.g., psychoanalysis; art therapy; hypnosis; expressive arts therapy). Among providers that did not report use of PE (n = 69), 40.6% reported use of CPT, 66.7% cognitive therapy, 72.5% mindfulness and meditation techniques, 63.8% supportive counseling, 17.4% EMDR, and 11.6% medication. Approximately 23.2% of providers also reported using "other" interventions for treatment of PTSD, similar to those listed above.

As indicated in Table 2, provider characteristics were often closely associated with exposure beliefs and utilization likelihood. Providers with current CBT orientation, CBT training orientation, doctoral degree, and training in exposure reported less negative beliefs toward exposure and higher likelihood of utilization, with moderate to large effects observed. Beliefs also differed based on clinical setting F(3, 149) = 6.28, p < .001; post-hoc comparisons demonstrated that beliefs were more negative among providers in private practice compared to other hospital settings at a trend level (p = .059, d = 0.56), and that beliefs were more negative among providers in community mental health settings compared to those in VHA settings (p = .038, d = 0.94) and other hospital settings (p = .001, d = 0.99). Likelihood of exposure utilization was not associated with healthcare setting, F(3, 149) = 1.13, p = .34. Beliefs and utilization likelihood did not differ based on gender. Similarly, age was not associated with exposure beliefs (r = -.03, p = .71) or utilization likelihood

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Table 2
Exposure Beliefs and Utilization Within Entire Sample (N =155)

Characteristic	TBES			Utilization Likelihood		
	M (SD)	*F/t*	*d*	*M (SD)*	*F/t*	*d*
Gender		−0.31	0.06		0.89	0.16
Female	24.70 (*15.65*)			6.51 (*3.75*)		
Male	23.87 (*14.47*)			7.09 (*3.49*)		
Degree		7.14***	1.15		−3.41**	0.55
Doctorate	18.65 (*12.25*)			7.40 (*3.41*)		
Master's	34.13 (*14.52*)			5.43 (*3.71*)		
Training orientation		4.89***	0.82		−3.74***	0.63
CBT	20.82 (*13.42*)			7.35 (*3.37*)		
Non-CBT	32.70 (*15.34*)			5.08 (*3.83*)		
Current orientation		9.13***	1.74		−5.54***	1.00
CBT	19.33 (*12.51*)			7.54 (*3.20*)		
Non-CBT	40.00 (*11.16*)			4.13 (*3.59*)		
Setting		6.28***	–		1.13	–
Private practice	25.47 (*16.39*)			6.78 (*3.69*)		
CMH	30.20 (*13.14*)			5.88 (*3.76*)		
VHA	18.40 (*11.97*)			6.93 (*3.52*)		
Other hospital	17.06 (*13.41*)			7.32 (*3.50*)		
Training		11.63***	1.98		−11.63***	2.00
Exposure training	17.82 (*11.56*)			8.32 (*2.64*)		
No training	39.71 (*10.58*)			2.96 (*2.72*)		

Note. CBT = cognitive behavioral therapy; CMH = community mental health; TBES = Therapist Beliefs About Exposure Scale; VHA = Veterans Health Administration.
*p < .05; **p < .01; ***p < .001.

(r = .02, p = .80), nor was years of experience with either (r = -.13, p = .11 and r = .11, p = .19, respectively).

Table 3 presents links between clinician characteristics, beliefs, and utilization among providers trained in exposure (n = 106). A notable pattern emerged where clinician characteristics often remained closely associated with beliefs, but not likelihood of exposure utilization. Thus, while likelihood of utilizing exposure and TBES scores were highly correlated (r = .73), beliefs and utilization appeared to reflect distinct constructs. Specifically, trained exposure providers with doctoral degrees compared to those with master's degrees (p = .013) and current CBT orientation versus non-CBT orientation (p < .001) reported less negative beliefs toward exposure, for example, but these characteristics did not indicate differences in terms of actual reported likelihood of utilization in current practice (p = .71 and p = .78, respectively). Beliefs and utilization likelihood did not differ based on gender, training orientation, and setting among trained providers. Similarly, age was not associated with exposure beliefs (r = -.01, p = .93) or utilization likelihood (r = .15, p = .12). Years of experience demonstrated a small positive association with utilization likelihood (r = .20, p = .047), but no correlation with beliefs (r = −.14, p = .17).

Differences in provider characteristics and treatment utilization based on training in exposure are presented in Table 4. Providers with doctoral degrees (p < .001), CBT training orientation (p < .001), and current CBT orientation (p < .001) were substantially more likely to report training in exposure. Work setting was also closely tied to training (p < .001), such that a greater percentage of trained providers tended to work in hospitals or VHA settings, while a higher percentage of providers not trained in exposure reported working in community mental health. Examining rates of training in exposure within each setting, 96.8% of providers in hospital settings reported training, 86.7% in VHA settings, 65.5% in private practice, and 49.0% in community mental health. Age (p = .93), gender (p = .56), and years of experience (p = .42) were not linked to exposure training. Last, utilization rates of PTSD treatments were also closely linked to training in exposure, such that trained providers were more likely to report use of PE (p < .001) and CPT (p < .001), and less likely to report use of EMDR (p = .04), supportive counseling (p < .001), mindfulness/meditation (p < .001), and cognitive therapy (p < .001).

Discussion

Despite systematic efforts in expanding the reach of exposure-based therapies for PTSD, implemen-

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Table 3
Exposure Beliefs and Utilization Among Clinicians Trained in Exposure (n = 106)

Characteristic	TBES			Utilization Likelihood		
	M (SD)	*F/t*	*d*	*M (SD)*	*F/t*	*d*
Gender		0.75	0.15		0.05	0.01
Female	16.94 (*10.89*)			8.37 (*2.71*)		
Male	18.76 (*12.71*)			8.39 (*2.51*)		
Degree		2.51*	0.57		−0.37	0.09
Doctorate	16.25 (*11.31*)			8.38 (*2.63*)		
Master's	22.65 (*11.19*)			8.15 (*2.74*)		
Training orientation		1.89	0.43		0.08	0.02
CBT	16.77 (*11.15*)			8.30 (*2.75*)		
Non-CBT	21.87 (*12.35*)			8.35 (*2.37*)		
Current orientation		5.48***	1.91		−0.28	0.09
CBT	15.91 (*10.52*)			8.32 (*2.69*)		
Non-CBT	33.08 (*7.19*)			8.08 (*2.50*)		
Setting		1.05	–		1.93	–
Private practice	17.26 (*10.45*)			9.03 (*1.92*)		
CMH	21.25 (*11.97*)			8.33 (*2.57*)		
VHA	15.15 (*8.98*)			7.92 (*2.53*)		
Other hospital	16.70 (*13.48*)			7.53 (*3.35*)		

Note. CBT = cognitive behavioral therapy; CMH = community mental health; TBES = Therapist Beliefs About Exposure Scale; VHA = Veterans Health Administration.
*p < .05; **p < .01; ***p < .001.

Table 4
Provider Characteristics and Treatment Utilization Based on PE Training (N = 155)

Characteristic	*Trained in exposure* (n = 106) *M* (*SD*) or *n* (%)	*Not trained in exposure* (n = 49) *M* (*SD*) or *n* (%)	t/χ^2	*d*/*phi*
Age	40.46 (*9.97*)	40.27 (*14.24*)	−0.10	0.02
Gender (female)	71 (67.0)	35 (71.4)	0.34	.06
Degree (doctoral)	80 (75.5)	14 (28.6)	28.95***	.45
Training orientation (CBT)	81 (76.4)	21 (42.9)	15.82***	.34
Current orientation (CBT)	92 (86.8)	20 (40.8)	33.26***	.49
Years of experience	13.26 (*8.88*)	11.65 (*12.41*)	−0.92	0.15
Setting			22.72***	.39
Private practice	38 (35.8)	20 (40.8)		
CMH	24 (22.6)	25 (51.0)		
VHA	13 (12.3)	2 (4.1)		
Other hospital	30 (28.3)	1 (2.0)		
Current treatment utilization				
PE	84 (79.2)	2 (4.1)	73.64***	.70
CPT	63 (59.4)	10 (20.4)	18.95***	.36
EMDR	8 (7.5)	10 (20.4)	4.22*	.19
Supportive counseling	21 (19.8)	38 (77.6)	44.97***	.55
Mindfulness/meditation	41 (38.7)	39 (79.6)	20.85***	.38
Cognitive therapy	38 (35.8)	39 (79.6)	23.93***	.41
Other	18 (17.0)	13 (26.5)	1.36	.11

Note. CBT = cognitive behavior therapy; CPT = cognitive processing therapy; CMH = community mental health; EMDR = eye movement desensitization and reprocessing; PE = prolonged exposure; VHA = Veterans Health Administration.
*p < .05; **p < .01; ***p < .001.

tation of PE—while improving—appears to have increased with certain subgroups of providers and lagged with others. Specifically, doctoral-level clinicians, those endorsing a CBT orientation in their training or clinical practice, and those trained in exposure therapy for PTSD and/or anx-

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iety disorders reported less negative exposure beliefs and greater likelihood of utilization. As would be expected, training in exposure was robustly associated with the types of interventions utilized by providers; clinicians who reported training in exposure were significantly less likely to use non-trauma-focused options such as meditation/mindfulness and supportive counseling, and more likely to utilize first-line treatments for PTSD, such as CPT and PE. However, training in exposure did not necessarily map onto favorable, accurate beliefs toward exposure. Indeed, although exposure utilization and training in exposure showed a strong positive association, beliefs toward exposure remained poor among master's-level clinicians and those who did not endorse a CBT orientation, even when trained in exposure and reporting high utilization likelihood. Overall, findings provide insight into current gaps regarding the reach of exposure-based therapies to treat PTSD and also highlight possible incongruence between poor beliefs and high utilization likelihood among even trained providers.

Roughly half of providers examined in this study endorsed utilizing PE, with utilization particularly high among providers trained in exposure. Implementation of other empirically supported approaches, such as CPT and cognitive therapy, was also common. However, results reinforce that exposure therapy remains underutilized, particularly among master's-level providers or those reporting non-CBT training and orientation. Findings are in line with previous research identifying associations between clinician characteristics and exposure therapy beliefs and utilization (Deacon, Farrell, et al., 2013; Finley et al., 2015; Garcia et al., 2019; Hundt et al., 2016). Ongoing dissemination efforts, which have primarily been focused in VHA settings and CBT-focused doctoral training programs, may be disproportionately reaching certain providers over others. Importantly, underutilization among clinicians appears to be explained in large part by evidence that these providers were less likely to have been trained in exposure. Indeed, results overall suggest that *type* of training likely matters more than *level* of training in understanding exposure beliefs and utilization, as the most robust effects were observed based on practicing theoretical orientation and training in exposure. An important target to increase the broad implementation of PE therefore appears to be terminal master's graduate programs, which train a great number of mental health clinicians.

However, negative beliefs often persisted, even among trained providers, and beliefs and utilization likelihood were not always congruent with one another. Findings of the current study thus align closely with a recent meta-analysis of the effects of training clinicians to use exposure therapy, where training positively impacted knowledge, attitudes, and self-efficacy, but did not necessarily affect providers' intention to implement exposure (Trivasse et al., 2020). In the current study, among providers trained in exposure therapy, clinicians reporting a non-CBT orientation or master's-level degree endorsed no differences in utilization likelihood yet significantly more negative beliefs toward exposure. This holds important clinical implications, as more negative beliefs about exposure may lead to cautious delivery of the intervention (i.e., choosing less anxiety-provoking items for exposure tasks) and adversely impact outcomes (e.g., Farrell et al., 2013). In PE, cautious delivery of exposure is dissuaded (e.g., Foa et al., 2007; Zoellner et al., 2011), as it is likely that prematurely stopping or cautiously implementing exposures may actually reinforce trauma-related emotions and beliefs. Overall, while utilization of first-line treatments reflects one important outcome of dissemination efforts, endorsement of accurate beliefs about exposure along with a strong understanding of its rationale are also critical to monitor, even among trained providers.

Factors such as dedicated time and resources, incentives and mandates for implementation, ad hoc consultation, and support from colleagues and organizational leaders have been positively correlated with utilization of empirically supported treatments (Chard et al., 2012; Cook et al., 2015; Finley et al., 2015; Rosen et al., 2016). Personnel resources, patient case load, and organizational support vary by setting, all of which impact clinicians' bandwidth to implement exposure-based treatments. In addition to training clinicians, strategies and resources to optimize organizational climate and supports have proven crucial for the widespread training and uptake of exposure-based treatments across settings. Community mental health settings—closely correlated with master's level and non-CBT providers in this study—are often particularly constrained in terms of organization-level supports identified by clinicians necessary to implement exposure (Becker-Haimes et al., 2020). It is also important to note that master's-level providers are effective in implementing PE to treat PTSD and show strong patient outcomes (Eftekhari et al., 2013; Foa et al., 2005), further highlighting the need to address these gaps.

Results from this study complement recent findings that clinicians implementing exposure therapy

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in their practice often also utilize non-evidence-based interventions for the treatment of PTSD and anxiety disorders (Hipol & Deacon, 2012). For example, utilization of supportive counseling, meditation/mindfulness, and "other" approaches (i.e., other not classified CBT-centric techniques and more eclectic interventions) was reported by a large subset of clinicians in this sample. It is also notable that the types of interventions used by clinicians were closely connected to training in exposure. Among trained providers, there was a lower likelihood of using nonrecommended interventions such as supportive counseling, and opposite effects were observed among providers without training in exposure. This pattern of findings is consistent with other literature examining treatment for anxiety, where greater use of relaxation by providers was associated with a corresponding lower likelihood of exposure use (Becker-Haimes et al., 2017). In short, evidence suggests the likelihood of using supported and nonsupported treatment approaches is substantially lower when providers are trained in exposure.

Findings from this study should be interpreted considering several limitations. First, several characteristics of the current sample may affect the generalizability of findings. While the current sample in many facets parallels the national psychology training programs and workforce, which are principally Caucasian, female, and CBT-oriented (Lin et al., 2018; Norcross et al., 2018), it should nonetheless be noted that a large majority of the providers in this study were Caucasian. Additionally, because participants were recruited in part from professional organizations' list serves, it is possible that providers in the current sample may hold more favorable views toward exposure and its utilization relative to providers that are not members of such organizations. Despite this, it is notable that a large percentage of providers in the current study—including those identifying with CBT—reported negative beliefs toward exposure and low utilization. Additionally, while some groups are likely underrepresented (i.e., non-CBT clinicians, master's-level clinicians), these providers still reflect a meaningful subset of the sample. We also attempted to carefully parse out various provider characteristics to provide a picture of how beliefs and utilization may differ based on these characteristics. Yet, the nature of the sample should be closely considered when interpreting findings, as the convenience sampling applied in the current study may affect the generalizability of results. We also note that it was not possible to determine the number of providers who received the survey. After consideration of recruitment strategies, list serve recruitment was selected given evidence of its cost-effectiveness and wide reach (e.g., Dworkin et al., 2016). However, this approach may have attenuated sample heterogeneity and overall representativeness.

Second, we are unable to know when various PTSD interventions were used by providers. It is possible, for example, that non-first-line therapies for PTSD were utilized at times in response to a failed trial of a first-line intervention. Despite this, the current study provides an informative picture of rates of utilization for a broad range of treatments for PTSD. Third, this study principally examined likelihood of PE utilization as an outcome and thus did not include a comprehensive assessment of PE utilization (e.g., how often exposure is used relative to any other treatment method; level of fidelity to treatment protocol). It is possible that likelihood of utilization may not map closely onto actual utilization. However, methodology in the current study was intended to reduce participant burden and aligns with prior literature, as similar outcome measures have been used in prior research studying treatment implementation (e.g., Deacon, Farrell, et al., 2013; Farrell et al., 2016). Finally, the extent of training in exposure-based approaches in unclear. It is possible that some providers underwent extensive and structured training with supervision on cases, while others were not formally trained or supervised. A more nuanced understanding of the extent of training may shed light on the observed gap between beliefs about and utilization of exposure therapies. Regardless, findings from this study highlight the importance of training in the uptake of empirically supported treatments.

The current study complements a broad literature articulating that the determinants and barriers to the uptake and effective implementation of exposure-based interventions are multifaceted and relevant at multiple levels. Training clearly reflects one critical factor in increasing utilization (e.g., Cook et al., 2014; Finley et al. 2015; Hundt et al., 2016). Yet, even among trained providers, the current study suggests that beliefs and utilization are not always congruent with one another. While utilization ultimately reflects one important outcome in the dissemination of first-line treatments, potential discrepancies between beliefs and utilization warrant further consideration to ensure optimal implementation and outcomes. In addition to the development of innovative approaches to train clinicians and facilitate implementation of exposure, ensuring sustained accurate beliefs toward this therapy and strong understanding

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of its rationale may be another critical target in dissemination efforts.

Conflict of Interest Statement

The authors declare that there are no conflicts of interest.

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