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Reexamining the Evidence-Based Practice Attitude Scale-36 (EBPAS-36) in a U.S. sample of trauma-focused treatment providers



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Abstract

Background Mental health providers' attitudes toward evidence-based practice are likely to influence what interventions they learn, implement, and sustain over time. A 36-item version of the Evidence-Based Practice Attitude Scale (EBPAS) was recently developed to assess provider attitudes in 12 domains. Research suggests the EBPAS-36 is a promising tool, though inconsistencies across studies signal the need to reexamine its validity and reliability along with the correlates of provider attitudes.

Methods This study assessed the factorial structure of the EBPAS-36, the intercorrelations and reliabilities of its subscales, and correlates of practice attitudes in a U.S. sample of 445 practitioners who received training in traumafocused cognitive behavioral therapy.

Results A confirmatory factor analysis (CFA) verified that the EBPAS-36 fits a 12-factor model representing each of its subscales. Reinforcing prior results, the subscales of the EBPAS-36 were weakly to moderately correlated, indicating that the 12 domains are related yet distinct. A hypothesized second-order CFA model with three overarching latent factors was not validated, but an alternative second-order model with two factors fit the data adequately. Most sub-scales demonstrated good-to-excellent internal consistency, though values for certain subscales ranged from marginally acceptable to poor. Provider attitudes varied by gender, professional experience, and discipline. Practitioners who more frequently assessed client trauma symptoms reported more positive EBP attitudes, and those who expressed greater concerns that trauma assessments may cause harm reported more negative attitudes.

Conclusions Taken together with previous findings, the results show the EBPAS-36 performs well overall, though some subscales may benefit from refinement. Further validation tests of the EBPAS-36 in diverse samples are warranted.

Keywords EBPAS, Evidence-based practice, Attitudes, Mental health, Trauma

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Contributions to the literature

- Further research is needed to examine the performance of the 36-item Evidence-Based Practice Attitude Scale (EBPAS-36).
- We found the EBPAS-36 fits a 12-factor model representing its subscales and a second-order latent model with two overarching factors. Most subscales demonstrated good-to-excellent internal consistency, though certain subscales had questionable reliabilities.
- Provider attitudes varied by gender, years of experience, professional discipline, and trauma assessment attitudes and behaviors.
- The EBPAS-36 is a promising tool for comprehensively assessing attitudes toward evidence-based practice, though further measurement development may strengthen its validity and reliability.

Background

Access to pediatric mental health care in the United States (U.S.) is limited and unequal. To illustrate, by one recent estimate, roughly half of the 7.7 million children and adolescents in the U.S. with an indicated disorder do not receive treatment from a mental health provider [1]. Compared to their more advantaged peers, children from low-income backgrounds and marginalized groups are more likely to experience psychiatric disturbances due partly to their more frequent exposure to adverse and traumatic experiences [2-4]. These disparities are compounded by systemic and structural barriers to screening, referral, and treatment, including shortages of clinical providers and gaps in insurance coverage [5–10]. Service uptake is also affected by public stigma toward mental health care, discrimination against persons who need care, and client attitudes toward mental health, treatment providers, and help seeking [11–14].

Further exacerbating these barriers to care, some clinicians express ambivalence toward evidence-based practices (EBP) despite their association with better client outcomes. Attitudes toward EBP have been shown to vary by provider factors such as age and educational attainment as well as institutional factors such as organizational culture and climate [15, 16]. Even after accounting for individual and contextual differences, provider attitudes toward EBP are correlated with the likelihood of being trained in an evidence-based intervention, implementing treatment with fidelity, and sustaining validated protocols over time [17–19].

Evidence-based practice attitudes

Much of what we know scientifically about EBP attitudes of mental health practitioners comes from research on the 15-item Evidence-Based Practice Attitude Scale (EBPAS-15). This brief assessment measures practitioner attitudes in four domains: (1) intuitive *appeal* of EBPs, (2) willingness to adopt new practices given organizational *requirements* to do so, (3) *openness* toward novel practices, and (4) perceived *divergence* of usual practice from empirically validated practices. Following an initial validation study by Aarons et al. [20], the EBPAS-15 has been revalidated several times in U.S. and international samples [17, 21–28].

Aarons and colleagues also developed a more comprehensive 50-item version of the EBPAS, which, in addition to the four domains captured by the EPBAS-15, measures eight new domains: (1) perceived limitations of EBPs, (2) concerns about whether EBPs fit with a clinician's circumstances, (3) negative beliefs regarding supervisor monitoring, (4) extent to which therapy involves a balance between art and science, (5) burden associated with learning EBPs, (6) extent to which EBPs increase job security, (7) organizational support of EBPs, and (8) positive perceptions of receiving *feedback* on performance [28]. Subsequently, Aarons collaborated with Rye and colleagues to develop a more concise version of the EBPAS-50 in a sample of 838 psychologists and psychology students in Norway and a second sample of 418 clinicians in San Diego County, California [29]. The resulting 36-item tool retained the same subscales as the EBPAS-50; initial results suggested that the data fit the 12-factor structure adequately and that the subscales showed signs of acceptable discriminant validity.

Rye et al. (2019) conducted a follow-up study of the EBPAS-36 in a sample of 671 psychologists and 121 psychiatric nurses in Norway [30]. A CFA showed that the measure fit a 12-factor structure, and a principal component analysis (PCA) indicated the 12 scales loaded on three second-order attitudinal factors: (1) professional concerns (i.e., perceived limitations of EBPs), (2) work conditions and requirements (i.e., burden of learning new practices), and (3) fit and preferences (i.e., willingness to use new practices based on provider and client preferences). In a later study of 599 German psychotherapists, Szota and colleagues (2021) [31] used exploratory and confirmatory factor analysis to retest the models reported by Rye et al. (2019) along with an alternative second-order solution of four factors. Results showed that the second-order models fit the data better than the first-order model, though none of the models met conventional standards for good model fit [32, 33]. Another PCA of data collected from 114 Norwegian social work

and child welfare students indicated that the 12-factor model did not fit the data well [34].

Rationale for further study

The above findings suggest that the EBPAS-36 shows some promise, though only one study has tested the measure in a U.S. sample, and there are lingering questions about its underlying structure. Plus, some EBPAS-36 subscales have demonstrated fair-to-poor internal consistency. For instance, Rye et al. (2017) [29] found that the divergence scale had a Cronbach alpha of 0.60 and 0.68 in the two respective samples, while the fit ($\alpha \ge 0.62$) and balance ($\alpha \ge 0.64$) subscales also fell below common standards for good reliability (i.e., $\alpha \ge 0.70$). Other studies also have found that the appeal, balance, divergence, and fit subscales have questionable internal consistency [30, 31, 35]. Additionally, multiple versions of the EBPAS have been tested in samples of mental health providers, but few studies have focused on professionals who have opted to receive training in an evidence-based intervention [19, 36]. Further, many studies have identified demographic correlates of provider attitudes, but less is known about the extent to which global EBP attitudes are associated with specific attitudes and behaviors in everyday practice. Further knowledge along these lines may inform efforts to increase EBP uptake and fidelity.

Study aims

The current study addresses the aforementioned gaps in research on the EBPAS-36 by analyzing data from a statewide implementation project that aimed to increase access to trauma-responsive child mental health services. Surveys were administered to professionals prior to a training workshop in trauma-focused cognitive behavioral therapy. Extending prior work, the primary aims are to explore the structure of the EBPAS-36 along with the internal consistency and intercorrelations of its subscales. Potential correlates of provider EBP attitudes are also examined, including experiences with and attitudes toward specific EBP practices.

Methods

Sample and design

Study data derived from the Trauma and Recovery Project, a statewide implementation project in Wisconsin that was designed to increase access to trauma-responsive mental health services [37]. Supported by the Substance Abuse and Mental Health Services Administration and the National Child Traumatic Stress Initiative, the five-year project enabled providers across the state to receive training in one of three evidence-based interventions: (1) trauma-focused cognitive behavioral therapy (TF-CBT), (2) parent–child interaction therapy, or (3) child parent psychotherapy. The current analysis focuses on participants in TF-CBT workshops given that they comprised nearly 90% of all providers who received training during the project.

From October 2018 to August 2022, 449 child mental health providers who enrolled in one of eight TF-CBT training courses completed a pre-training survey. The practitioners represented 47 out of 72 Wisconsin counties and were from diverse disciplinary backgrounds, including professional counseling, clinical social work, and marriage and family therapy. Study procedures were approved by an institutional review board at the University of Wisconsin-Milwaukee prior to engaging human subjects, all of whom completed a written informed consent procedure before completing the survey.

Measures

As described above, providers' attitudes toward evidence-based practice were assessed using the EBPAS-36, which asks respondents to indicate their level of agreement with 5-point Likert scale items that range from not at all (0) to a very great extent (4). The EBPAS-36 produces 12 three-item subscales along with a sum score for the full measure. The baseline survey also asked a set of questions related to provider demographics. Participant gender included options for man, woman, or other. Race and ethnicity was assessed as a single item that incorporated the following response categories: African American or Black; American Indian or Alaska Native; Asian or Pacific Islander; Caucasian or White; Hispanic or Latino; Other race/ethnicity. Participants also reported their age in years and their amount of experience as a mental health service provider in years and months. Professional discipline was coded according to the licensure of each participant, as follows: (1) licensed professional counselor (LPC); (2) licensed clinical social worker (LCSW); (3) licensed marriage and family therapist (LMFT); (4) other license (e.g., clinical substance abuse counselor; registered art therapist); (5) no license.

The provider survey included three items that gauged participants' experience with and attitudes toward implementing specific practices. It was hypothesized that global attitudes toward EBP would be positively correlated with responses to the following items: (1) In my current practice, I use a standardized assessment to measure client progress over time; and (2) In my current practice, I assess clients for trauma symptoms. Response options to the preceding items ranged from never (1) to always (5). It was also hypothesized that EBP attitudes would be negatively correlated with an item indicating participants' concern that asking clients about trauma may cause harm, with responses ranging from 1 (not at all concerned) to 10 (extremely concerned).

Analysis plan

A descriptive analysis was performed using IBM SPSS 28.0 to describe the sample characteristics. Internal consistency of the EBPAS-36 total scale and each of the 12 subscales were assessed by Cronbach alpha correlations; bivariate Pearson correlations among the subscales were also conducted to assess the magnitude of their association.

Confirmatory factor analysis was conducted using *Mplus* 8.8 to test the hypothesized models described by Rye and colleagues [29, 30]. First, as a prerequisite step, 12 separate one-factor CFAs were conducted to determine if the variables representing the 12 subscales of the EBPAS-36 loaded on the 12 latent factors as expected. Subsequently, a first-order CFA was performed with all 12 factors entered in the model simultaneously.

Contingent on the model fit of the first-order CFA model, a second-order CFA was conducted with three higher-order latent factors overarching the 12 first-order factors. In other words, the first-order factors were nested below the second-order factors in a hierarchical structure. Robust maximum likelihood estimation (MLR) was applied to adjust for violations of normality among indicators. Minimal requirements of model fit were based on established conventions, including a comparative fit index (CFI) and Tucker-Lewis index (TLI) at 0.90 or above along with a root mean square error of approximation (RMSEA) at 0.06 or below and a standardized root mean square residual (SRMR) at 0.08 or below [38]. In instances where the original model fit indices did not indicate a minimally acceptable fit, error messages and model modification indices were carefully evaluated to determine if it was appropriate to adjust the model specifications. Modifications were made while following the principle of parsimony by specifying the simplest model possible with the fewest parameters (e.g., cross-loadings and error term correlations) [39].

Linear regressions using MLR estimation were conducted via structural equation modeling in *Mplus* 8.8 to test hypothesized correlates of provider attitudes. This analytic approach effectively compensates for violations of multivariate normality [40]. Using a stepwise approach, an initial regression model examined associations between provider demographic characteristics and EBPAS-36 total scores (Model 1). The analysis was then repeated after adding three variables related to participants' experience with and attitudes toward implementing specific practices (Model 2).

Missing data

Four of the 449 respondents did not answer roughly 20% or more EPBAS-36 items (i.e., \geq 7) and were excluded from the analysis. Among the remaining 445 participants, 6.5% (n = 29) were missing one item and 1.4% (n = 6) missed 2 to 6 items. These participants were included in CFAs, with missing data handled using full information maximum likelihood (FIML). In stepwise linear regression analyses, listwise deletion was applied if a participant was missing data for model covariates, predictors, or more than one EPBAS-36 item.

Results

Sample characteristics are described in Table 1. A large majority of the 445 providers identified as women (89.2%) and non-Hispanic White (88.7%). The mean age of participants was 36.0 years, and they averaged 7.0 years of experience as mental health service providers. All but 6.5% of the sample was professionally licensed; 45.8% were LPCs, 34.4% were LCSWs, 10.1% were LMFTs, and 6.7% held another professional credential.

Table 2 describes the EBPAS-36 items and factor loadings from a first-order CFA with 12 factors (i.e., model 1),

Table 1	Sample	description
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Variable Name	% or M(SD)
Gender	
Female	89.2%
Male	10.6%
Other	0.2%
Race/ethnicity	
Non-Hispanic White	88.7%
Non-Hispanic Black	4.3%
Hispanic	3.8%
Other race/ethnicity	3.2%
Age (range=23–68)	36.0 (9.4)
< 30	36.4%
31 to 40	35.7%
41 to 50	17.3%
51 to 60	8.8%
>60	1.8%
Provider experience, years (range=0-40)	7.0 (7.3)
Licensure	
LPC	45.8%
LCSW	34.4%
LMFT	10.1%
Other	6.7%
None	6.5%

LPC Licensed professional counselor, LCSW Licensed clinical social worker, LMFT Licensed marriage and family therapist

Table 2 Confirmatory factor analysis solutions for the EBPAS-36 from the current study and from Rye et al. (2017) [29]

Item Description (item number in EPBAS-36)	Item Mean (S	Factor Loadings				
	WI	CA	NO	WI ^a	CA	NO
Limitations						
EBP is not useful for clients with multiple problems (16)	0.39 (0.72)	1.15 (1.06)	0.89 (1.09)	0.71 (0.68)	0.79	0.74
EBP is not individualized treatment (17)	0.58 (0.82)	1.35 (1.13)	1.21 (1.18)	0.82 (0.88)	0.92	0.80
EBP is too narrowly focused (18)	0.63 (0.74)	1.42 (1.11)	1.08 (1.05)	0.79 (0.75)	0.89	0.89
Diveraence						
Research based interventions are not clinically useful (4)	0.38 (0.89)	0.70 (0.93)	0.37 (0.72)	0.66 (0.60)	0.59	0.61
Clinical experience is more important(5)	1.79 (0.83)	2.22 (1.00)	1.76 (1.18)	0.55 (0.48)	0.47	0.66
I would not use manualized therapy/interventions (6)	0.49 (0.83)	0.82 (0.93)	0.70 (1.07)	0.72 (0.83)	0.67	0.76
Balance						
A positive outcome in therapy is an art more than a science (22)	1 42 (0 93)	1 35 (1 20)	0.84 (0.99)	0.66 (0.50)	0.73	0.60
Therapy is both an art and a science (23)	3.03 (0.85)	2 19 (1 37)	2 20 (1 31)	0.28 (0.33)	0.59	0.62
My overall competence as a theranist is more important (24)	2 22 (0.96)	1.23 (1.20)	2.07 (1.15)	0.52 (0.67)	0.76	0.61
Monitorina	2.22 (0.90)	1.25 (1.20)	2.07 (1.15)	0.52 (0.07)	0.70	0.01
I prefer to work on my own without oversight (19)	0.90 (0.97)	1 /1 (1 23)	0.77 (1.10)	0.79 (0.77)	0.71	0.83
I de net want anvone leeking over my shoulder (20)	1 20 (1.00)	1.41 (1.25)	0.77 (1.10)	0.73 (0.77)	0.71	0.03
My work does not need to be menitored (21)	0.74 (0.96)	1.45 (1.20)	0.92 (1.22)	0.83 (0.80)	0.00	0.05
	0.74 (0.90)	1.52 (1.22)	0.05 (1.15)	0.74 (0.71)	0.05	0.75
Ulles to use now types of the convictor continue (1)	2.07 (0.72)	2.96 (0.01)	2.80 (0.05)	0.72 (0.71)	0.70	0.52
The to use new types of the apy/interventions(1)	3.07 (0.72)	2.86 (0.91)	2.80 (0.95)	0.72 (0.71)	0.70	0.55
Tam willing to try new types of therapy/interventions(2)	3.12 (0.72)	2.04 (1.02)	2.78 (1.10)	0.81 (0.81)	0.78	0.80
) am willing to use new and different types of therapy/interventions developed by researchers (3)	3.25 (0.65)	2.79 (0.88)	2.92 (0.96)	0.81 (0.82)	0.81	0.68
Appeal						
It "made sense" to you? (7)	3.42 (0.67)	3.15 (0.81)	3.04 (0.88)	0.66 (0.61)	0.61	0.53
It was being used by colleagues who were happy with it? (11)	3.06 (0.80)	2.74 (0.94)	2.62 (0.89)	0.57 (0.58)	0.71	0.68
You felt you had enough training to use it correctly? (12)	3.53 (0.63)	3.13 (0.87)	3.22 (0.79)	0.70 (0.73)	0.83	0.68
Fit						
You knew it was right for your clients (13)	3.73 (0.46)	3.07 (0.92)	3.42 (0.73)	0.78 (0.76)	0.69	0.54
You had a say in how you would use the EBP (14)	3.38 (0.75)	2.89 (0.91)	2.96 (1.01)	0.69 (0.71)	0.79	0.67
It fit with your clinical approach (15)	3.61 (0.56)	2.99 (0.94)	3.12 (0.96)	0.83 (0.84)	0.73	0.62
Organizational Support						
I would learn an EBP if continuing ed. credits were provided (31)	2.80 (1.04)	2.89 (1.04)	1.75 (1.35)	0.63 (0.60)	0.74	0.61
I would learn an EBP if training were provided (32)	3.31 (0.73)	3.12 (0.87)	2.69 (1.19)	0.87 (0.92)	0.86	0.92
I would learn an EBP if ongoing support was provided (33)	3.18 (0.78)	3.24 (0.80)	2.44 (1.21)	0.82 (0.79)	0.82	0.87
Feedback						
l enjoy getting feedback on my job performance (34)	3.05 (0.85)	3.12 (0.88)	3.38 (0.86)	0.77 (0.75)	0.69	0.84
Getting feedback helps me to be a better therapist/case mgr. (35)	3.37 (0.72)	3.23 (0.82)	3.56 (0.81)	0.95 (0.99)	0.83	0.96
Getting supervision helps me to be a better therapist/case mgr. (36)	3.43 (0.70)	3.27 (0.83)	3.58 (0.81)	0.75 (0.73)	0.78	0.72
Requirements						
It was required by your supervisor? (8)	2.96 (0.95)	2.59 (1.05)	1.83 (1.21)	0.94 (0.94)	0.89	0.93
It was required by your agency? (9)	3.00 (0.95)	2.65 (1.03)	1.90 (1.20)	1.00 (1.00)	0.97	1.00
It was required by your state? (10)	3.09 (0.98)	2.72 (1.11)	2.25 (1.22)	0.85 (0.84)	0.77	0.79
Learning an EBP will help me keep my job (28)	1.96 (1.24)	1.69 (1.32)	0.83 (1.16)	0.67 (0.67)	0.80	0.60
Learning an EBP will help me get a new job (29)	2.33 (1.12)	1.94 (1.25)	1.47 (1.30)	0.89 (0.90)	0.98	0.95
Learning an EBP will make it easier to find work (30)	2.52 (1.05)	1.75 (1.30)	1.48 (1.27)	0.93 (0.92)	0,61	0.91
Burden	((0.52)	2.01	5.5 .
I don't have time to learn anything new (25)	0,44 (0.75)	0.65 (0.96)	0.77 (1.04)	0.75 (0.70)	0.57	0.76
I can't meet my other obligations (26)	0.41 (0.69)	0.95 (1.10)	1.26 (1.14)	0.81 (0.89)	0,81	0.70
I don't know how to fit EBP into my administrative work (27)	0.49 (0.75)	1.24 (1.13)	0.85 (1.03)	0.59 (0.56)	0.67	0.61

Factor loadings are presented up to two decimal places. More precise estimates for select factor loadings are described in the text; additional information is available upon request

EBP Evidence-based practice, WI Current study sample from Wisconsin, U.S., CA and NO California, U.S. and Norway samples from Rye et al. (2017) [22]

^a Factor loadings outside the parentheses are from a first-order CFA with 12 factors, corresponding with the model described in Rye et al. [29]. Factor loadings in parentheses are from unidimensional CFA results (12 separate models). All factor loadings are standardized

as described in Rye et al. (2017) [29]. Our results showed that the first-order model fit the data adequately: χ^2 (528)=1004.73, CFI=0.927, TLI=0.913, RMSEA=0.045, SRMR=0.053. Table 2 also presents results from 12 separate one-factor CFAs (in parentheses). For 11 of the 12 factors, loadings ranged from 0.547 to 0.998, denoting moderate-to-strong correlations between each item and a given factor. For the factor representing the balance subscale, one item (*therapy is both an art and a science*) had a relatively weak loading (λ = 0.325).

Next, as described above, we examined a hypothesized model reported by Rye et al. (2019) [32] that includes three second-order factors: (1) professional concerns, (2) work conditions and requirements, and (3) fit and preferences. However, this model did not fit the data in the current study; the latent variable covariance matrix (psi) of the model was not positively defined, indicating a linear dependency among two or more latent factors. A diagnostic review of the psi matrix revealed that the correlation between two second-level factors, work and requirements and fit and preferences ($\psi = 1.034$), exceeded the normal range (results not shown). Therefore, the three-factor model was reconfigured into a two-factor model that retained the professional concerns factor but that combined "fit and preferences" with "work and requirements" into a single factor (results not shown). This approach resolved the structural concerns of the three-factor model, though the fit indices were still below acceptable cutoffs: $\chi^2_{(581)} = 1354.795$, CFI = 0.882, TLI=0.872, RMSEA=0.055, SRMR=0.100. After correlating select measurement error terms, the fit of the model improved to a more acceptable range: χ^2 $_{(574)}$ = 1171.16, CFI = 0.909, TLI = 0.900, RMSEA = 0.048, SRMR = 0.092. Second-order factor loadings for the final model (i.e., model 2) ranged from 0.295 to 0.695 for *professional concerns* (factor 1) and from 0.147 to 0.873 for the factor that combined *fit and preferences* with *work and requirements* (factor 2).

Although the two-factor solution fit the data adequately, modification indices showed that model fit would be much improved if *burden* was reassigned to load on factor 1 instead of factor 2 and if *openness* was reassigned to load on factor 2 instead of factor 1. The model also adjusted for one error term correlation between *organizational support* and *job security*. As shown in Appendix B, this solution produced a better-fitting model: $\chi^2_{(580)}$ =1158.40, CFI=0.912, TLI=0.904, RMSEA=0.047, SRMR=0.067. Second-order factor loadings for the final model (i.e., model 3) ranged from 0.546 to 0.803 for factor 1 and from 0.442 to 0.869 for factor 2. For further information about the fit of the three final CFA models, see Appendix A.

Subscale intercorrelations and internal consistencies are presented in Tables 3 and 4, respectively. The strongest pairwise correlations were between job security and organizational support (r=0.53), fit and appeal (r=0.48), feedback and organizational support (r=0.46), and requirements and appeal (r=0.45). Most subscales demonstrated good-to-excellent internal consistency, with the highest Cronbach alphas observed for requirements ($\alpha=0.95$), job security ($\alpha=0.87$), and feedback ($\alpha=0.85$). Two subscales, *divergence* and *appeal*, had alpha reliabilities that were slightly below preferred standards ($\alpha=0.68$ and 0.67, respectively), while the internal consistency of

Table 3 EBPAS-36 subscale correlat	ations
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	1	2	3	4	5	6	7	8	9	10	11
1. Requirements	-										
2. Appeal	.45*	-									
3. Openness	.23**	.41**	-								
4. Divergence	.15**	.20**	.10*	-							
5. Limitations	.13**	.22**	.18**	.42**	-						
6. Fit	.26**	.48**	.36**	.14**	.16**	-					
7. Monitoring	.04	.02	.07	.31**	.34**	.03	-				
8. Balance	.06	.03	07	.25**	.31**	16**	.33**	-			
9. Burden	.04	.06	.16**	.27**	.43**	.13**	.29**	.18**	-		
10. Job security	.21**	.28**	.28**	02	.03	.20**	01	09	01	-	
11. Org. support	.29**	.39**	.36**	.16**	.08	.44**	<01	13**	.04	.53**	-
12. Feedback	.18**	.32**	.29**	.11**	.14**	.35**	.28**	06	.16**	.32**	.46**

Estimates are Pearson correlation coefficients (r)

* p < .05

^{**} p<.01

EBPAS-36 Subscales	Wisconsin (a)	California (α)	Norway (α)
Requirements	.95	.91	.92
Appeal	.67	.75	.61
Openness	.83	.81	.76
Divergence	.68	.60	.68
Limitations	.82	.90	.85
Fit	.78	.77	.62
Monitoring	.83	.85	.84
Balance	.49	.74	.64
Burden	.75	.76	.74
Job Security	.87	.82	.86
Organizational Support	.78	.84	.84
Feedback	.85	.80	.85
Total EBPAS-36 Scale	.77	.79	.86

Table 4Internal consistency of EBPAS-36 Subscales in thecurrent study and Rye et al. (2017)

Cronbach alpha coefficients (α) are bivariate Pearson correlations

the *balance* subscale was poor (α = 0.49). A supplemental analysis (not shown) revealed that inter-item correlations among all three items of the *balance* subscale were small in magnitude (*r* range = 0.16 to 0.33).

Standardized linear regression coefficients are presented in Table 5. Model 1, which examined associations between provider demographics and EBPAS-36 scores, indicated that women reported more positive EBP attitudes than did men (β =0.17; 95% CI=0.07, 0.26). Years of experience as a mental health service provider was negatively correlated with EBP attitudes ($\beta = -0.15$; 95% CI = -0.23, -0.06). Compared to LPCs, LCSWs reported more positive EBP attitudes ($\beta = 0.14$; 95% CI=0.05, 0.23). After adding three items related to specific clinical practices and attitudes (see model 2), results showed that EBPAS-36 scores were significantly lower among LMFTs than LPCs ($\beta = -0.10$; 95% CI = -0.20, -0.01). Providers who more frequently assessed client trauma symptoms had more positive EBP attitudes ($\beta = 0.11$; 95% CI = 0.01, 0.21), while those who had greater concerns that asking about trauma may cause harm reported more negative EBP attitudes ($\beta = -0.23$; 95% CI = -0.32, -0.14). Using a standardized assessment to measure client progress was not significantly associated with EBP attitudes in the full model ($\beta = 0.07$; 95% CI = -0.02, 0.17).

Discussion

Using data collected from a sample of 445 American practitioners who attended TF-CBT training workshops, the primary aims of this study were to reanalyze (a) the

Correlates	EBPAS-36 Total Score				
	Model 1 <i>B</i> [95% Cl]	Model 2 <i>B</i> [95% Cl]			
Gender (Female = 1)	0.17 [0.07, 0.26]	0.16 [0.07, 0.25]			
Race/ethnicity (White = 1)	0.07 [—0.32, 0.16]	0.02 [0.07, 0.11]			
Years of experience	-0.15 [-0.23, -0.06]	-0.18 [-0.27, -0.10]			
LCSW	0.14 [0.05, 0.23]	0.15 [0.06, 0.24]			
LMFT	0.07 [0.16, 0.01]	-0.10 [-0.19, -0.01]			
Other license	0.09 [—0.02, 0.19]	0.10 [–0.01, 0.19]			
No license	0.04 [—0.05, 0.13]	0.04 [0.04, 0.13]			
Uses standardized assessment to measure client progress	-	0.07 [—0.02, 0.17]			
Assesses clients for trauma symptoms	-	0.11 [0.01, 0.21]			
Concerns asking clients about trauma	-	-0.23 [-0.32, -0.14]			

 Table 5
 Standardized linear regression models estimating associations between provider demographics and EBPAS-36 scores

Professional discipline categories (LCSW; LMFT; Other license; No license) are compared to a reference group of licensed professional counselors (LPCs *B* Standardized beta, *CI* Confidence intervals

factorial structure of the EBPAS-36, (b) intercorrelations and internal consistencies of its subscales, and (c) correlates of EBP attitudes. Supporting prior studies, a confirmatory factor analysis showed that the overall model fit was acceptable for a 12-factor model that matches the 12 subscales of the EBPAS-36 [29, 30]. However, the second-order CFA with three superordinate factors described by Rye et al. (2019) [30] did not fit the data in the current sample. After scrutinizing model diagnostics, the CFA was reconfigured by combining two second-order factors. The resulting two-factor model fit the data adequately after adjusting error term correlations, though modification indices suggested the model would be improved by allowing *burden* and *openness* to load on the opposing factor. This realignment produced a betterfitting solution, albeit one that alters how the model is interpreted.

Discrepancies in study results may be related to sampling differences. Aside from variation among American and European practitioners, participants in this study voluntarily elected to receive training in an evidence-based treatment protocol. Inconsistencies across studies also may be due, in part, to different statistical approaches and decisions. Rye et al. (2019) [30] tested a second-order model via a PCA that allowed factor cross-loadings, whereas the current study applied more stringent CFA criteria by restraining items to load on only one factor. Szota et al. (2021) [31] identified a similar three-factor solution in a second-order CFA, though multiple loadings exceeded 1.00, which indicates that more than 100% of variance was being explained for a given indicator (i.e., negative residual variance). In this study, the three-factor solution was rejected largely based on the presence of similar loading values that were out of bounds.

Szota et al. (2021) also identified a four-factor model that discriminated between positive and negative individual attitudes (i.e., positive alignment with EBP; reservations toward EBP) as well as positive and negative organizational conditions that influence provider attitudes (i.e., institutional endorsement; constraints by institution) [31]. If the EBPAS-36 reliably distinguishes individual and institutional sources of variability in provider attitudes, this interpretation of the measurement model has some advantages in terms of conceptual coherence and practical significance. Yet their results should also be interpreted while considering that the four factors aligned with items based on their positive or negative valence. In the current study, results from the best-fitting model also showed that negatively worded items aligned with one factor while positively worded items aligned with another factor. Method effects associated with the positive or negative wording of survey items have been documented for decades [41-44]. Thus, while the EBPAS-36 may tap into higher-order latent constructs, it is possible that the constructs reflect not only the types of questions that are asked but also how they are asked.

Reinforcing prior results of Rye et al. (2017) [29], the subscales of the EBPAS-36 were weakly to moderately correlated, offering some evidence that the 12 subscales are related yet distinct. Most subscales also demonstrated good-to-excellent internal consistency according to guidelines for evaluating Cronbach's alphas (i.e., $\alpha = 0.70 - 0.95$) [45]. However, the appeal and divergence subscales had marginally acceptable reliability, and the reliability of the balance subscale was poor (i.e., $\alpha < 0.60$). Prior studies have also shown that the balance, appeal, and divergence subscales have questionable internal consistency [30, 31, 35], suggesting that efforts to improve the measure may be warranted. Reliability may be enhanced by omitting items, adding new items, or

revising the language of current items. For instance, our CFA findings suggest that the item "*therapy is both an art and a science*" is a candidate for further attention and potentially modification.

The final study aim was to examine correlates of provider attitudes toward EBP. Supporting prior results, female gender was associated with more positive attitudes [21, 30, 31], while years of professional experience was inversely associated with provider attitudes [21, 30, 31, 46, 47]. Comparisons of licensed providers from different disciplines indicated that, when compared to LPCs, LCSWs held more positive attitudes and LMFTs held more negative EBP attitudes. Prior research on the relationship between professional discipline to EBP attitudes has uncovered largely null effects [20, 28, 48]. It is uncertain why professional discipline correlated with EBP attitudes in this study, pointing to the need for further research with practitioners from diverse fields in applied settings.

Along with demographic correlates, specific practices and attitudes were explored as correlates of global EBP attitudes. Practitioners who more frequently assessed client trauma symptoms reported more positive EBP attitudes, and those who expressed greater concerns that trauma assessments may cause harm reported more negative attitudes. The findings suggest that global EBP attitudes are correlated with specific attitudes and behaviors in everyday practice. These novel findings suggest there is a need to disentangle the extent to which specific practices shape EBP attitudes and the extent to which EBP attitudes influence providers' selection of specific practices and different practice settings. Moreover, the results reveal that reservations about trauma assessments persist even among providers who elect to implement trauma-responsive interventions [49-51], and despite evidence indicating that trauma questionnaires are typically well tolerated [52–55].

Some study limitations should be acknowledged, including the potential influence of missing data. Roughly 8% of respondents were missing at least one EBPAS-36 item. Missing data in the factor analysis were handled via FIML, which produces unbiased estimates except when missingness is not at random [56, 57]. Yet, the missing data mechanisms in this study are unknown. Sample selection bias also may have been introduced through the listwise deletion of participants from regression analyses. Omitted variable bias is another concern given that the regression models excluded salient variables that may influence EBP attitudes, including institutional characteristics such as organizational culture [15]. Additionally, although the study's sample size is adequate according to general rules of thumb for SEM sample size requirements [58], analyzing a larger and more representative sample would have increased confidence in the results. The findings also may not generalize to other populations or historical contexts given that the providers were (a) from a single state in the U.S., (b) volunteered to be trained in an evidence-based, traumafocused intervention, and (c) participated at different time points before and during the COVID-19 pandemic.

Conclusions

The EBPAS-36 is a broad-based assessment of provider attitudes toward evidence-based practice. The current study validated a first-order structure that matches its 12 subscales, though it remains unclear whether the EBPAS-36 items map onto a second-order structure that captures broader dimensions of EBP attitudes. Further measurement development work also may be warranted considering that the EBPAS-36 has been shown to fit different models within and between datasets, and because some of its subscales have questionable internal consistency. Given that EBPAS-36 was intended for use by researchers and practitioners, further studies of its performance in applied settings are warranted.

A well-validated and reliable tool that comprehensively assesses provider attitudes toward EBP would be beneficial for providers and service agencies, and it could also be used to enhance training and professional development programs. Ambivalence and resistance toward EBP hinders their uptake and sustainability [17–19]. Despite the availability of many empirically validated mental health treatments like TF-CBT and initiatives like the Trauma and Recovery Project to integrate these interventions into routine community-based settings [7, 37, 59-61], inequities in access still prevail. Regrettably, disadvantaged and marginalized groups that are at the greatest risk of trauma exposure are often the least likely to receive evidence-based, trauma-focused mental health care. Although organizational and systemic barriers may have a larger influence than provider attitudes on the dissemination of evidence-based practices, they are also less alterable. To maximize the practical significance of tools like the EBPAS-36, complementary protocols could be developed to help practitioners identify discrepancies between their attitudes and normative provider attitudes as well as the current state of the evidence base.

Appendix A

Fit statistics from three CFA models of the EBPAS-36	5
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Model Fit Statistics	Model 1 First-Order CFA with 12 Factors ^a	Model 2 Second-Order CFA with 2 Factors ^b	Model 3 Second-Order CFA with 2 Factors ^c
MLR estimation			
χ^2	1004.73	1171.16 (1266.371)	1158.40 (1188.08)
df	528	574 (581)	580 (581)
Number of free Parameters	174	128 (121)	122 (121)
CFI	0.927	0.909 (0.882)	0.912 (0.907)
TLI	0.913	0.900 (0.872)	0.904 (0.899)
RMSEA	0.045	0.048 (0.055)	0.047 (0.048)
SRMR	0.053	0.092 (1.000)	0.067 (0.069)

Further information about model specifications are available upon request

CFA Confirmatory factor analysis, χ^2 Chi square, **CFI** Comparative fit index, **TLI** Tucker-Lewis index, **RMSEA** Root mean square error of approximation, **SRMR** Standardized root mean square residual

^a The first-order CFA (model 1) includes 12 factors that match the 12 subscales of the EBPAS-36

^b Model 2 modifies a model from Rye et al. (2017) with three second-order factors that did not fit the data well in the current sample. The model was reconfigured with two second-order factors, including a professional concerns factor and a second factor that combined fit and preferences with work and requirements. Error term correlations were also added for seven item pairs ^c Model 3 is a modified version of model 2 that optimized model fit by realigning

the burden and openness factors, as described in the text

Appendix B

First-order and second-order factor loadings from a two-factor CFA of the EBPAS-36

Second- Order	First-Order Loadings			Second- Order	First-Order Loadings		
Factor 1	WI	US	NO	Loadings Factor 2	WI	US	NO
0.80	Limitations			0.87	Appeal		
	0.71	0.79	0.74		0.66	0.61	0.53
	0.83	0.92	0.80		0.57	0.71	0.68
	0.76	0.89	0.89		0.70	0.83	0.68
0.68	Divergence			0.75		Fit	
	0.65	0.59	0.61		0.78	0.69	0.54
	0.55	0.47	0.66		0.70	0.79	0.67
	0.72	0.67	0.76		0.82	0.73	0.62
0.66	Balance			0.72	Organizatic Support	nal	
	0.79	0.73	0.60		0.63	0.74	0.61
	0.21	0.59	0.62		0.88	0.86	0.92
	0.43	0.76	0.61		0.81	0.82	0.87

Second- Order	First-Order	Load	ings	Second- First-Orc Order Loading			
Factor 1	WI	US	NO	Loadings Factor 2	WI	US	NO
0.58	Burden			0.59	Openness		
	0.74	0.57	0.76		0.72	0.70	0.53
	0.82	0.81	0.70		0.80	0.78	0.86
	0.59	0.67	0.61		0.82	0.81	0.68
0.55	Monitoring			0.57	Feedback		
	0.79	0.71	0.83		0.76	0.69	0.84
	0.83	0.88	0.83		0.97	0.83	0.96
	0.73	0.85	0.75		0.74	0.78	0.72
				0.45	Requiremer	nts	
					0.94	0.89	0.93
					1.00	0.97	1.00
					0.85	0.77	0.79
				0.44	Job Security	/	
					0.67	0.80	0.60
					0.89	0.98	0.95
					0.93	0.61	0.91

Factor loadings are estimates of association between an observed variable and a latent factor. First-order factors are nested below second-order factors in a hierarchical structure. A "first-order factor" is a construct that is directly measured by observed variables in the model, and a "second-order factor" is a higher-level latent variable that explains the correlations between the first-order factors. The two-factor model is a revised version of the three-factor model described by Rye et al. (2017) [29]. As described in the text, factor 1 is *professional concerns* and factor 2 combines *fit and preferences* combined with *work and requirements*

Abbreviations

EBP	Evidence-based practice
EBPAS	Evidence-Based Practice Attitude Scale
CFA	Confirmatory factor analysis
PCA	Principal component analysis
LPC	Licensed professional counselor
LCSW	Licensed clinical social worker
(3) LMFT	Licensed marriage and family therapist
TF-CBT	Trauma-focused cognitive behavioral therapy
MLR	Robust maximum likelihood estimation
CFI	Comparative fit index
TLI	Tucker-Lewis index
RMSEA	Root mean square error of approximation
SRMR	Standardized root mean square residual
FIML	Full information maximum likelihood

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Authors' contributions

JM was responsible for the study's conceptualization, design, measurement plan, supervision of data collection, and writing. CPL contributed data preparation, statistical analysis, and data visualization. EB contributed to the study's conceptualization and writing. XL contributed to data preparation and statistical analysis.

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Data availability

The dataset analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The authors declare that they have no financial or non-financial competing interests to disclose. All study procedures were approved by an institutional review board prior to engaging human subjects, all of whom completed a written informed consent procedure before participating in the study.

Consent for publication

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Competing interests

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References

- Whitney DG, Peterson MD. US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. JAMA Pediatr. 2019;173(4):389.
- Dvir Y, Ford JD, Hill M, Frazier JA. Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities. Harvard Rev Psychiatry. 2014;22(3):149–61. Available from: https://www.ncbi.nlm.nih.gov/pmc/ articles/PMC4091823/.
- Jones Harden B, Slopen N. Inequitable experiences and outcomes in young children: addressing racial and social-economic disparities in physical and mental health. Ann Rev Dev Psychol. 2022;4(1):133.
- Vibhakar V, Allen LR, Gee B, Meiser-Stedman R. A systematic review and meta-analysis on the prevalence of depression in children and adolescents after exposure to trauma. J Affect Disord. 2019;1(255):77–89.
- Alegria M, Vallas M, Pumariega AJ. Racial and ethnic disparities in pediatric mental health. Child Adolesc Psychiatr Clin. 2010;19(4):759–74.
- Hodgkinson S, Godoy L, Beers LS, Lewin A. Improving mental health access for low-income children and families in the primary care setting. Pediatrics. 2017;139(1):e20151175.
- So M, McCord RF, Kaminski JW. Policy levers to promote access to and utilization of children's mental health services: a systematic review. Adm Policy Ment Health Ment Health Serv Res. 2019;46(3):334–51.
- Lu W, Todhunter-Reid A, Mitsdarffer ML, Muñoz-Laboy M, Yoon AS, Xu L. Barriers and facilitators for mental health service use among racial/ ethnic minority adolescents: a systematic review of literature. Front Public Health. 2021;8(9):641605.
- Owens PL, Hoagwood K, Horwitz SM, Leaf PJ, Poduska JM, Kellam SG, lalongo NS. Barriers to children's mental health services. J Am Acad Child Adolesc Psychiatry. 2002;41(6):731–8.
- Reardon T, Harvey K, Baranowska M, O'brien D, Smith L, Creswell C. What do parents perceive are the barriers and facilitators to accessing psychological treatment for mental health problems in children and adolescents A systematic review of qualitative and quantitative studies. Eur ChildAdolesc Psychiatry. 2017;26:623–47.
- Clement S, Schauman O, Graham T, Maggioni F, Evans-Lacko S, Bezborodovs N, Morgan C, Rüsch N, Brown JS, Thornicroft G. What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. Psychol Med. 2015;45(1):11–27.
- Corrigan PW, Druss BG, Perlick DA. The impact of mental illness stigma on seeking and participating in mental health care. Psychol Sci Public Interest. 2014;15(2):37–70.
- Henderson C, Evans-Lacko S, Thornicroft G. Mental illness stigma, help seeking, and public health programs. Am J Public Health. 2013;103(5):777–80.

- Schnyder N, Panczak R, Groth N, Schultze-Lutter F. Association between mental health-related stigma and active help-seeking: systematic review and meta-analysis. Br J Psychiatry. 2017;210(4):261–8.
- Aarons GA, Sawitzky AC. Organizational culture and climate and mental health provider attitudes toward evidence-based practice. Psychol Serv. 2006;3(1):61.
- Beidas RS, Marcus S, Aarons GA, Hoagwood KE, Schoenwald S, Evans AC, Hurford MO, Hadley T, Barg FK, Walsh LM, Adams DR. Predictors of community therapists' use of therapy techniques in a large public mental health system. JAMA Pediatr. 2015;169(4):374–82.
- 17. Aarons GA, Palinkas LA. Implementation of evidence-based practice in child welfare: service provider perspectives. Adm Policy Ment Health Ment Health Serv Res. 2007;34:411–9.
- Frank HE, Becker-Haimes EM, Kendall PC. Therapist training in evidencebased interventions for mental health: a systematic review of training approaches and outcomes. Clin Psychol Sci Pract. 2020;27(3):e12330.
- Horwitz SM, Lewis K, Gleacher A, Wang N, Bradbury DM, Ray-LaBatt M, Hoagwood KE. Sustainability of an evidence-based practice in community mental health agencies serving children. Psychiatr Serv. 2019;70(5):413–6.
- Aarons GA. Mental health provider attitudes toward adoption of evidencebased practice: the Evidence-Based Practice Attitude Scale (EBPAS). Ment Health Serv Res. 2004;6:61–74.
- Aarons GA, Glisson C, Hoagwood K, Kelleher K, Landsverk J, Cafri G. Psychometric properties and US National norms of the Evidence-Based Practice Attitude Scale (EBPAS). Psychol Assess. 2010;22(2):356.
- Cook CR, Davis C, Brown EC, Locke J, Ehrhart MG, Aarons GA, Larson M, Lyon AR. Confirmatory factor analysis of the Evidence-Based Practice Attitudes Scale with school-based behavioral health consultants. Implement Sci. 2018;13(1):1–8.
- 23. Silver Wolf DA, Dulmus CN, Maguin E, Fava N. Refining the evidence-based practice attitude scale: an alternative confirmatory factor analysis. Soc Work Res. 2014;38(1):47–58.
- 24. Baumann AA, Vázquez AL, Macchione AC, Lima A, Coelho AF, Juras M, Ribeiro M, Kohlsdorf M, Carothers BJ. Translation and validation of the evidence-based practice attitude scale (EBPAS-15) to Brazilian Portuguese: examining providers' perspective about evidence-based parent intervention. Child Youth Serv Rev. 2022;1(136):106421.
- Melas CD, Zampetakis LA, Dimopoulou A, Moustakis V. Evaluating the properties of the Evidence-Based Practice Attitude Scale (EBPAS) in health care. Psychol Assess. 2012;24(4):867.
- 26. Santesson AH, Bäckström M, Holmberg R, Perrin S, Jarbin H. Confirmatory factor analysis of the Evidence-Based Practice Attitude Scale (EBPAS) in a large and representative Swedish sample: is the use of the total scale and subscale scores justified? BMC Med Res Methodol. 2020;20:1–2.
- van Sonsbeek MA, Hutschemaekers GJ, Veerman JW, Kleinjan M, Aarons GA, Tiemens BG. Psychometric properties of the Dutch version of the evidencebased practice attitude scale (EBPAS). Health Res Policy Syst. 2015;13:1–2.
- Aarons GA, Cafri G, Lugo L, Sawitzky A. Expanding the domains of attitudes towards evidence-based practice: the evidence based practice attitude scale-50. Adm Policy Ment Health Ment Health Serv Res. 2012;39:331–40.
- Rye M, Torres EM, Friborg O, Skre I, Aarons GA. The Evidence-based Practice Attitude Scale-36 (EBPAS-36): a brief and pragmatic measure of attitudes to evidence-based practice validated in US and Norwegian samples. Implement Sci. 2017;12(1):1.
- Rye M, Friborg O, Skre I. Attitudes of mental health providers towards adoption of evidence-based interventions: relationship to workplace, staff roles and social and psychological factors at work. BMC Health Serv Res. 2019;19:1–2.
- Szota K, Thielemann JF, Christiansen H, Rye M, Aarons GA, Barke A. Crosscultural adaption and psychometric investigation of the German version of the evidence based practice attitude scale (EBPAS-36D). Health Res Policy Syst. 2021;19(1):90.
- Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. Struct Equ Modeling. 1999;6(1):1–55.
- Shi D, Lee T, Maydeu-Olivares A. Understanding the model size effect on SEM fit indices. Educ Psychol Measur. 2019;79(2):310–34.
- Finne J, Malmberg-Heimonen I. Norwegian social work and child welfare students' attitudes toward research-supported treatments. J Evid Based Soc Work. 2021;18(3):340–52.

- Pervin M, Hagmayer Y. Attitudes towards evidence-based practice of professionals working with children and adolescents with autism spectrum disorder in Bangladesh. Adm Policy Ment Health Ment Health Serv Res. 2022;49(5):861–80.
- Lim A, Nakamura BJ, Higa-McMillan CK, Shimabukuro S, Slavin L. Effects of workshop trainings on evidence-based practice knowledge and attitudes among youth community mental health providers. Behav Res Ther. 2012;50(6):397–406.
- Mersky JP, Topitzes J, Janczewski CE, Lee CTP, McGaughey G, McNeil CB. Translating and Implementing Evidence-Based Mental Health Services in Child Welfare. Adm Policy Ment Health Ment Health Services Res. 2020;47(5):693-704. https://doi.org/10.1007/s10488-020-01011-8.
- Brown TA. Confirmatory factor analysis for applied research. 2nd ed. New York: Guilford publications; 2015.
- 39. Kline RB. Principles and practice of structural equation modeling. 4th ed. New York: Guilford publications; 2023.
- Hancock GR, Mueller RO. Structural equation modeling: A second course. 2nd ed. Charlotte: IAP; 2013.
- Barnette JJ. Effects of stem and Likert response option reversals on survey internal consistency: if you feel the need, there is a better alternative to using those negatively worded stems. Educ Psychol Measur. 2000;60(3):361–70.
- DiStefano C, Motl RW. Further investigating method effects associated with negatively worded items on self-report surveys. Struct Equ Model. 2006;13(3):440–64.
- Dodeen H. The effects of positively and negatively worded items on the factor structure of the UCLA loneliness scale. J Psychoeduc Assess. 2015;33(3):259–67.
- Schmitt N, Stuits DM. Factors defined by negatively keyed items: the result of careless respondents? Appl Psychol Meas. 1985;9(4):367–73.
- Nunnally JC, Bernstein IH. Psychometric theory. 3rd ed. New York: Tata Mcgraw-Hill Ed; 1994.
- Egeland KM, Ruud T, Ogden T, Lindstrøm JC, Heiervang KS. Psychometric properties of the Norwegian version of the Evidence-Based Practice Attitude Scale (EBPAS): to measure implementation readiness. Health Res Policy Syst. 2016;14(1):1.
- 47. Hamill NR, Wiener KK. Attitudes of psychologists in Australia towards evidence-based practice in psychology. Aust Psychol. 2018;53(6):477–85.
- Nakamura BJ, Higa-McMillan CK, Okamura KH, Shimabukuro S. Knowledge of and attitudes towards evidence-based practices in community child mental health practitioners. Adm Policy Ment Health Ment Health Serv Res. 2011;38:287–300.
- De Jongh AD, Resick PA, Zoellner LA, Van Minnen A, Lee CW, Monson CM, Foa EB, Wheeler K, Broeke ET, Feeny N, Rauch SA. Critical analysis of the current treatment guidelines for complex PTSD in adults. Depress Anxiety. 2016;33(5):359–69.
- Patel ZS, Casline E, Shaw AM, Jensen-Doss A, Ramirez V. Measuring clinician stuck points about trauma-focused cognitive behavior therapy: the TF-CBT Stuck Points Questionnaire. J Trauma Stress. 2022;35(5):1357–67.
- Ruzek JI, Eftekhari A, Rosen CS, Crowley JJ, Kuhn E, Foa EB, Hembree EA, Karlin BE. Factors related to clinician attitudes toward prolonged exposure therapy for PTSD. J Trauma Stress. 2014;27(4):423–9.
- 52. Mersky JP, Lee CTP, Gilbert RM. Client and Provider Discomfort With an Adverse Childhood Experiences Survey. Am J Prev Med. 2019;57(2):e51-e58. https://doi.org/10.1016/j.amepre.2019.02.026.
- 53. Griffin MG, Resick PA, Waldrop AE, Mechanic MB. Participation in trauma research: is there evidence of harm? J Trauma Stress. 2003;16:221–7.
- McClinton Appollis T, Lund C, de Vries PJ, Mathews C. Adolescents' and adults' experiences of being surveyed about violence and abuse: a systematic review of harms, benefits, and regrets. Am J Public Health. 2015;105(2):e31-45.
- Rariden C, SmithBattle L, Yoo JH, Cibulka N, Loman D. Screening for adverse childhood experiences: literature review and practice implications. J Nurse Pract. 2021;17(1):98–104.
- Enders CK, Bandalos DL. The relative performance of full information maximum likelihood estimation for missing data in structural equation models. Struct Equ Model. 2001;8(3):430–57.
- 57. Schafer JL, Graham JW. Missing data: our view of the state of the art. Psychol Methods. 2002;7(2):147.
- Wolf EJ, Harrington KM, Clark SL, Miller MW. Sample size requirements for structural equation models. Educational and Psychological Measurement. 2013;73(6):913–34.

- Ascienzo S, Sprang G, Eslinger J. Disseminating TF-CBT: A mixed methods investigation of clinician perspectives and the impact of training format and formalized problem-solving approaches on implementation outcomes. J Eval Clin Pract. 2020;26(6):1657–68.
- Ebert L, Amaya-Jackson L, Markiewicz JM, Kisiel C, Fairbank JA. Use of the breakthrough series collaborative to support broad and sustained use of evidence-based trauma treatment for children in community practice settings. Adm Policy Ment Health Ment Health Serv Res. 2012;39:187–99.
- Sigel BA, Kramer TL, Conners-Burrow NA, Church JK, Worley KB, Mitrani NA. Statewide dissemination of trauma-focused cognitive-behavioral therapy (TF-CBT). Child Youth Serv Rev. 2013;35(6):1023–9.

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