



Evidence-Based Treatment Strategies in Youth Mental Health Services: Results from a National Survey of Providers

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Abstract

Previous surveys indicate infrequent use of evidence-based treatment (EBT) manuals in usual care youth mental health, but the extent to which providers use core and common EBT strategies and what contextual factors impact EBT strategy implementation need further study. In a national, multidisciplinary survey of 1092 youth-serving providers, providers reported regular use of many EBT strategies. Provider learning theory orientation, more recent degree, more standardized and ongoing assessment use, more positive attitudes toward innovation and evidence, fewer low-income clients, and perceptions that their agency valued quality care and provided fewer training resources predicted more frequent EBT strategy use.

Keywords Usual care · Evidence-based treatment · Youth mental health · Dissemination · Implementation

Introduction

Numerous randomized clinical trials demonstrate beneficial outcomes of evidence-based treatments (EBTs) for youth mental health (MH) problems. EBTs for the most common youth MH problems (i.e., anxiety, depression, disruptive behavior) consistently outperform control conditions (e.g., Lonigan et al. 1998; Silverman and Hinshaw 2008) and usual care (UC; Weisz et al. 2013, 2006). Since the mid-1990s, there have been widespread calls for the integration of EBTs into UC (The National Advisory Mental Health Council Workgroup on Child and Adolescent Mental Health Intervention Development and Deployment 2001) along with publicly- and privately-funded initiatives to improve EBT training and implementation (e.g., EBT mandates

in publicly-funded services; Cooper and Aratani 2009). Despite such efforts, the extent to which providers actually implement EBTs in UC youth MH care is not entirely clear.

Most research on EBT use comes from MH provider surveys. Addis and Krasnow (2000) surveyed 669 psychologists and found 7% used manuals often or almost exclusively, 24% sometimes, 22% rarely, and 47% never. Becker et al. (2013) surveyed 734 counselors, marriage and family therapists (MFTs), and social workers, and found a similar pattern: 8% used manuals frequently, 51% to some degree, and 41% never. Walrath et al. (2006) surveyed 467 providers who reported using EBTs in the Comprehensive Community Mental Health Services for Children and their Families Program (a federal program that funds a coordinated system of care for youth); the majority reported approaches consistent with EBTs (e.g., 62% used CBT), but use of specific manuals was rare (e.g., 8% used parent–child interaction therapy) and even fewer implemented the full manual.

Given both provider reticence to use lockstep manuals and substantial overlap in the strategies prescribed across different manuals for a given target problem and age group, experts have suggested broadening implementation to core treatment strategies common across EBTs rather than just specific, branded manuals (Chorpita et al. 2005; Garland et al. 2008). In one of the only observational studies of UC youth MH services, Garland et al. (2010) coded use of common EBT strategies for behavior problems for 191 youth (4–13 years old) treated by 96 providers in publicly

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funded agencies in San Diego County. They found that providers used the full range of EBT strategies for behavior problems but implemented some far more often than others (e.g., therapist reinforcement in 83% vs. role-playing new skills in just 35% of sessions) and all observed strategies were delivered at low intensity. Among 616 providers contracted with Hawaii's Child and Adolescent Mental Health Division, Higa-McMillan et al. (2017) found providers reported using the full range of EBT strategies for youth anxiety (3–19 years old) though again there was variability between strategies (e.g., 93% used problem solving vs. 15% used exposure). Finally, as part of a citywide CBT training initiative, Beidas et al. (2015) surveyed 130 providers from the largest youth-serving agencies in Philadelphia; providers reported using CBT strategies “sometimes” to “often.” Existing studies focus on settings with EBT implementation projects underway (e.g., Beidas et al. 2015; Higa-McMillan et al. 2017), or a single problem or narrow age range (e.g., behavior disorders in youth 4–13 years old in Garland et al. 2010). Building on this important work, a large national sample of UC youth MH providers may help to clarify whether, and to what extent, providers implement EBT strategies in UC youth MH settings.

The design and execution of future EBT implementation initiatives would also benefit from improved understanding of factors that influence EBT use. Several implementation frameworks suggest structural, organizational, provider, client, and innovation factors impact EBT use (e.g., Chaudoir et al. 2013; Damschroder et al. 2009; Glisson 2002; Greenhalgh et al. 2004; Rogers 2010; Schoenwald and Hoagwood 2001). Provider characteristics have received perhaps the most attention to date. Positive attitudes toward research (Nelson and Steele 2007), learning theory orientation (Becker et al. 2013; Nelson and Steele 2007), less clinical experience (Brookman-Frazee et al. 2010), and being a psychologist (Higa-McMillan et al. 2015) have been associated with more frequent EBT use. Being trained in EBTs also predicted EBT use in several (Nelson and Steele 2007; Wolk et al. 2016), though not all (Jensen-Doss et al. 2008) training studies.

Contextual factors suggested by implementation frameworks have also shown promise. Glisson et al. (2008) found that providers in youth-serving MH organizations characterized by low rigidity and resistance to change, and high expectations for their providers to have up-to-date knowledge and to prioritize client well-being, sustained use of a new treatment twice as long as organizations with higher rigidity and resistance, and lower expectations. Providers may also use EBT strategies differentially based on youth characteristics. Providers have been found to use EBTs more often for externalizing problems (Wolk et al. 2016), and with older youth and better educated, higher income families (Brookman-Frazee et al. 2010; Higa-McMillan et al.

2015). Given concerns that EBTs do not address the needs of multi-problem youth (Nelson et al. 2006), fewer co-occurring problems may also predict more EBT use.

The current study aimed to replicate and extend previous research on UC youth MH providers' EBT strategy use within a large, national sample of UC providers, which may help focus future training and implementation efforts. We conducted a multidisciplinary, national survey of providers to (1) determine whether, and to what extent, providers report using EBT strategies for the most common youth MH referral concerns (i.e., anxiety, depression, disruptive behavior), and (2) identify provider and contextual factors that predict EBT strategy use. Guided by prior work, we hypothesized that more positive attitudes toward innovation and evidence, more frequent standardized and ongoing assessment use, psychology discipline, learning theory orientation, fewer years since degree, greater provider perceptions that their agencies value quality care and support ongoing training, fewer low-income cases, primary behavior problem, and fewer co-occurring problems would predict greater EBT strategy use. We had no a priori hypotheses for case mix racial and ethnic minority status and age.

Method

Participants

Participants were 1092 MH providers (33.15% psychologists, 24.27% counselors, 22.16% MFTs, 21.98% social workers, and 16.12% psychiatrists) who reported providing treatment to youth. Participants had a mean age of 52.58 ($SD = 9.81$) years, were majority female (62.64%); and White (92.22%; 2.01% African American, 1.92% Asian or Pacific Islander, 0.64% Native American, 0.92% other; 2.9% were Hispanic or Latino/a). Participants were 53.57% doctoral- and 46.43% master's-level providers; had a mean of 20.19 ($SD = 10.16$) years since their highest degree; had a mean of 39.71 active cases; and 39.93% reported a learning theory orientation. Participants worked in a range of settings: 63.55% private practice, 18.86% outpatient clinic, 9.25% university or medical school, 9.07% school settings, 6.32% residential or day treatment facility, 5.40% inpatient hospital, and 15.48% other, with 51.74% working only in private practice. Average client case mix was reported as 31.18% racial or ethnic minority, 34.05% low income, 31.87% 3–10-year-old, and 66.67% 11–17-year-old youth.

Procedures

We used the Tailored Design Method for survey development (i.e., careful piloting, noncontingent incentive, multiple, personally-addressed, hand-signed mailings; Dillman

2000). After initial development of the survey items, we conducted focus groups with 14 local mental health providers who completed the initial survey, then provided feedback on survey readability, item content, effort required for completion, overall impression of the survey, likelihood that they would complete the survey, and changes that would increase chances they would complete the survey. Based on focus group feedback, we shortened the survey and eliminated jargon. We then piloted the revised survey with a national sample of 500 providers to get additional feedback and determine the most cost-effective incentive (Hawley et al. 2009).

To administer the final survey, we randomly assigned providers to one of three versions of the survey that differed only with regards to the prompt for providers to rate how frequently they used various treatment strategies with a recent, representative youth case of primary anxiety, depression, or behavior problems. We sent up to five mailings to 5000 providers randomly sampled from membership rosters of the largest national practice guilds for youth-serving MH providers (1000 each): American Counseling Association (ACA), American Association for Marriage and Family Therapy (AAMFT), American Academy of Child and Adolescent Psychiatry (AACAP), American Psychological Association (APA), and National Association of Social Workers (NASW). The first mailing, sent to all providers, included a personally addressed, hand-signed pre-notice letter. The second mailing, sent to all providers, included a personally addressed, hand-signed cover letter, \$2 bill, survey, and pre-addressed, stamped return envelope. The third mailing, sent to all providers, was a personally addressed, hand-signed postcard thanking providers for returning or reminding them to return the survey. The fourth mailing, sent to non-responders only, included a second personalized cover letter, survey, and stamped return envelope. The fifth mailing, sent to nonresponders only, included a third personalized cover letter, survey, and business reply return envelope. Some 347 (6.94%) were undeliverable. Of the 4653 presumably delivered, 2863 (61.53%) were completed, 151 (3.25%) declined to participate, and 1639 (35.22%) did not respond. Of respondents, 1233 reported providing treatment to youth. The unadjusted response rate was 36.60% for AACAP, 56.70% for APA, 60.90% for AAMFT, 62.50% for ACA, and 69.60% for NASW. Response rates differed by guild, $\chi^2(4, N = 5000) = 253.40, p < .001$. Psychiatrists responded at a lower rate and social workers at a higher rate than others (Bonferroni corrected p value of .005). Compared to prior studies of youth MH providers (Garland et al. 2003; Hawley and Weisz 2003; Jensen-Doss et al. 2009), our sample may somewhat underrepresent female and racial and ethnic minority providers, and over-represent doctoral-level providers. All procedures were approved by the university's Institutional Review Board. Results from the larger sample focusing on providers' assessment practices have been

reported in prior publications (Cook et al. 2017; Jensen-Doss and Hawley 2010, 2011; Kearns and Hawley 2014).

Measures

Provider Characteristics

We adapted provider characteristic items from past MH provider surveys (Kazdin et al. 1990). Providers reported sex, age, discipline, theoretical orientation, and year of highest degree.

Provider Attitudes Toward Innovation and Evidence (PATIE)

We created a latent variable measuring providers' attitudes toward innovative treatment approaches and research evidence. We adapted the three highest loading items on the Openness scale of the Evidence-Based Practice Attitude Scale (Aarons 2004). Items were rated from one (strongly disagree) to five (strongly agree); higher scores reflect more positive attitudes ($\alpha = .64, \lambda = .51 - .68$).

Standardized Measure Use (SMU)

We created a latent variable measuring providers' use of standardized measures using five indicators generated from a review of provider attitudes toward evidence-based assessment (Garland et al. 2003; Gilbody et al. 2002) and recommended evidence-based assessment approaches for common youth mental health problems (Mash and Hunsley 2005). Five items measured frequency of structured diagnostic interview, formal mental status exam, formal observational coding system, standardized symptoms or functioning checklists, and formal clinician symptoms or functioning ratings use. Use was rated from one (never or almost never) to five (all or most of the time) ($\alpha = .70, \lambda = .40 - .66$).

Ongoing Assessment

Providers reported how frequently they conducted ongoing assessment from one (never or almost never) to five (all or most of the time).

Contextual Characteristics

Providers reported the percent of their cases that were low-income and racial or ethnic minority. Youth primary problem was determined by survey version (i.e., anxiety, depression, behavior). Providers reported youth age (i.e., 3–6, 7–10, 11–13, 14–17 years) and all co-occurring problems (i.e., anxiety, disruptive behavior, depression, Attention-Deficit Hyperactivity Disorder, learning disorder, mental

retardation/developmental disorder, eating disorder, substance use/abuse, or history of abuse or trauma).

Provider Perceptions of Agency Value of Quality Care (PPAVQC)

We created a latent variable measuring individual providers' perceptions of how much their agency values quality care using six items adapted from the Children's Services Survey (Glisson and James 2002). Items were rated from one (strongly disagree) to five (strongly agree); higher scores reflect higher perceived agency value of quality care ($\alpha = .82$, $\lambda = .51 - .77$).

Provider Perceptions of Agency Training Resources (PPATR)

We created a latent variable measuring individual providers' perceptions of their agency's training resources from four items adapted from the Children's Services Survey (Glisson and James 2002). Items were rated from one (strongly disagree) to five (strongly agree); higher scores reflect higher perceived availability of resources ($\alpha = .77$, $\lambda = .50 - .85$). Error terms for several PPAVQC and PPATR indicators were correlated due to item similarity.

Evidence-Based Behavioral Strategies Scale

While self-report measures have been developed to assess for general therapeutic approach or orientation (e.g., Therapy Procedures Checklist; TPC; Weersing et al. 2002) and the presence of specific strategies (Monthly Treatment Progress Summary; Borntreger et al. 2015), there were no measures to assess for frequency of EBT strategy use over the course of treatment for a given youth with these MH problems. To identify EBT strategies for anxiety, depression, and disruptive behavior problems for youth 3–17 years old, we followed the procedures used by Garland et al. (2008) to identify EBT strategies for 4–13-year-old youth with disruptive behavior problems. Specifically, we identified EBTs for the three problem types from empirically-supported treatment reviews (i.e., Burns et al. 1999; Carr 2006; Chambless and Ollendick 2001; Chambless et al. 1996; Chambless and Hollon 1998; Franklin et al. 1998; Lonigan et al. 1998; Roth and Fonagy 2005; Silverman and Hinshaw 2008; Task Force on Promotion and Dissemination of Psychological Procedures 1995), coded the core or essential strategies within each EBT manual, retained the core strategies that appeared in multiple manuals for each problem type, reached in-house consensus, and sent this list of strategies (20 anxiety, 21 depression, 18 behavior strategies) to youth EBT experts for review. We sent the list to 51 EBT manual authors, and the 35 experts who responded (response rate adjusted for undeliverable surveys = 73%) had

88% agreement for anxiety, 91% for depression, and 98% for behavior strategies. Strategies endorsed as a core component of EBTs for the target problem by majority of experts (anxiety = 17, depression = 18, behavior = 15) were retained in our EBT strategy items. Although the Garland et al. (2008) procedure we employed differs from that of Chorpita et al. (2005) who also identified EBT strategies (they generated a list of potential strategies a priori whereas we reviewed the manuals without a pre-existing set of possible strategies), our final lists are remarkably similar. Finally, we added items from the psychodynamic scale of the TPC (Weersing et al. 2002) to include strategies that may be widely used but lack empirical support.

On the survey, providers were presented with descriptions of 74 treatment strategies and they rated on a five-point scale (i.e., “never or almost never” to “all or most of the time”) their use of 74 strategies during treatment with a recent representative case with primary anxiety, depression, or behavior problems. Strategies were categorized as (a) *common* across EBTs for anxiety, depression, and behavior problems (e.g., psychoeducation); (b) *specific* to EBTs for a given problem type (e.g., exposure for anxiety); and (c) *other* strategies without research support for the problem type (e.g., gaining insight for all problems; exposure for behavior problems). Whether or not a strategy was considered EBT depended on the youth's presentation (anxiety only; depression only; behavior problems only; anxiety and depression; anxiety and behavior; depression and behavior; and anxiety, depression, and behavior). We computed a mean score across all EBT strategies for the given presentation for each provider. Internal consistency was as follows: anxiety $\alpha = .92$, depression $\alpha = .94$, behavior $\alpha = .94$.

Data Analysis

The three survey versions ($n_{anx} = 364$, $n_{dep} = 402$, $n_{beh} = 326$) were combined for analyses due to high rates of co-occurring problems (72.80% of anxiety, 91.04% of depression, and 85.58% of disruptive behavior cases had at least one co-occurring problem). The assumptions of multivariate normality and linearity were met. Based on log-likelihood, Mahalanobis distance values, and factor score scatterplots, three cases were excluded. Three bachelor's-level providers and 138 providers who rated less than two-thirds of the treatment strategies were excluded for a final sample of 1092 providers. Discipline was coded as psychology or other; orientation as learning theory (cognitive, behavioral, CBT) or other; and youth age as child (3–10) or adolescent (11–17 years old). Primary problem was dummy coded with behavior problems as the reference group. Co-occurring problems were the sum of all primary and co-occurring problems.

For the first aim, we present mean ratings and percentage of providers who reported any use (i.e., 2–5 rating) and high frequency use (i.e., 4–5 rating) for each EBT strategy. For the second aim, we present a multi-group analysis; we modeled EBT strategy use as a function of four latent (PPAVQC, PPATR, PATIE, SMU) and nine manifest variables (ongoing assessment, years since degree, psychology, learning theory, client age, primary problem, co-occurring problems, race/ethnicity, low-income). Multi-group analysis is a structural equation modeling approach used in situations of planned missingness. Participants with each missingness pattern are treated as separate groups and parameters are constrained to equality across these groups (Graham et al. 2006). In our sample, providers solely in private practice did not have data on agency-based latent variables and thus constituted one group, and providers working in agencies the other. As recommended (Byrne 2012), we first tested our hypothesized model separately for each group; then developed a revised model with adequate fit in both groups. Specifically, we examined overall fit of our hypothesized model and individual regression weights separately in both groups, then revised the model by dropping predictors that were not significant in either group. The revised model was run simultaneously for both groups in a multi-group analysis with parameters for missing values in the private practice group fixed to equal those observed in the agency

group; variances for all other latent variables fixed to one; factor loadings, error variances, indicator intercepts, correlations between predictors, and regression coefficients for all predictors constrained to equality; and all predictor variable means freely estimated. Analyses were conducted in MPlus 7.0 (Muthén and Muthén 2012) using maximum likelihood estimation. RMSEA of 0.05 or lower indicate close fit (Browne and Cudeck 1993), and CFI and TLI of 0.90 or higher indicate adequate fit (Hu and Bentler 1998).

Results

Provider Use of EBT Strategies in UC Settings

Mean EBT strategy ratings corresponded to the “sometimes” and “often” response options (anxiety = 3.20–4.87; depression = 3.07–4.84; behavior = 2.98–4.71). For anxiety, any use ranged from 87.64 to 100%; high frequency use from 35.44 to 99.73%. For depression, any use ranged from 81.59 to 100%; high frequency use from 30.10 to 100%. For disruptive behavior, any use ranged from 82.52 to 100%; high frequency use from 23.93 to 97.55% (see Tables 1, 2, 3 for descriptive statistics on EBT strategy use by target problem).

Table 1 Summary of provider use of EBT strategies for youth with primary anxiety disorders

EBT strategy	Any use ^a (%)	High frequency use ^b (%)	M	SD
Rapport/working alliance	100.00	99.73	4.87	0.34
Psychoeducation	99.45	93.96	4.63	0.66
Treatment goals discussion/consensus	99.18	85.16	4.33	0.77
Affective education	98.35	82.97	4.25	0.92
Cognitive model	98.35	87.64	4.35	0.85
Future planning	98.08	67.86	3.98	0.82
Praise or reward of skills/behaviors	98.08	67.31	4.04	0.83
Treatment description/rationale	97.80	75.00	4.08	0.97
Cognitive restructuring	96.43	53.02	3.69	0.91
Problem solving skills	96.43	59.07	3.85	0.98
Positive self-talk	95.60	79.67	4.07	1.05
Self-monitoring and reward	94.51	58.79	3.62	1.10
Provider modeling of skills/behaviors	93.41	60.44	3.68	1.07
Graduated exposure	93.41	65.11	3.71	1.17
Perspective taking	92.86	54.95	3.48	1.13
In-session practice/role play	92.31	43.13	3.46	1.04
Relaxation training	88.19	35.44	3.20	1.11
Parent training—reinforcement	88.19	60.44	3.54	1.28
Out-of-session practice/homework	87.64	55.49	3.43	1.27

^aAny use indicates mean ratings of 2–5

^bHigh frequency use indicates mean ratings of 4–5

Table 2 Summary of provider use of EBT strategies for youth with primary depressive disorders

EBT strategy	Any use ^a (%)	High frequency use ^b (%)	M	SD
Rapport/working alliance	100.00	100.00	4.84	0.37
Cognitive model	99.75	90.30	4.43	0.73
Future planning	99.50	66.67	4.03	0.70
Treatment goals discussion/consensus	99.25	83.58	4.26	0.82
Psychoeducation	99.00	93.78	4.59	0.67
Affective education	98.76	84.08	4.26	0.85
Praise or reward of skills/behaviors	98.51	66.67	4.02	0.78
Treatment description/rationale	98.51	73.88	3.98	0.93
Cognitive restructuring	98.26	62.44	3.93	0.78
Positive self-talk	98.26	80.10	4.13	0.90
Problem solving skills	97.76	61.44	3.88	0.86
Social/communication skills	97.26	38.31	3.59	0.80
Specific agenda/session plan	97.26	68.16	3.86	0.95
Provider modeling of skills/behaviors	96.27	64.68	3.75	1.01
Pleasant activity scheduling	96.27	65.42	3.74	1.01
Self-monitoring and rewards	94.78	64.68	3.74	1.07
In-session practice/role play	91.54	41.54	3.40	1.03
Perspective taking	91.54	54.23	3.40	1.13
Mastery activity scheduling	91.54	55.47	3.46	1.11
Relaxation training	88.06	30.10	3.09	1.03
Thought-stopping	87.81	53.73	3.39	1.26
Parent training—reinforcement	87.81	59.70	3.51	1.27
Out-of-session practice/homework	86.82	42.04	3.14	1.20
Structured activity scheduling	81.59	41.04	3.07	1.27

^aAny use indicates mean ratings of 2–5

^bHigh frequency use indicates mean ratings of 4–5

Predictors of EBT strategy use

Fit indices for the hypothesized model were RMSEA = .043, CFI = .901, TLI = .874 for the agency group; and RMSEA = .048, CFI = .887, TLI = .833 for the private practice group. Primary problem, percent of racial and ethnic minority cases, co-occurring problems, youth age, and professional discipline were not significant predictors in either group and were dropped from the model. This revised model demonstrated adequate fit in a multi-group analysis (RMSEA = .045, CFI = .910, TLI = .907). Higher scores on the PPAVQC ($\beta = .21, p = .001$), PATIE ($\beta_{\text{agency}} = .19, p < .001$; $\beta_{\text{private}} = .20, p < .001$), and SMU ($\beta = .23, p < .001$); more frequent use of ongoing assessment ($\beta = .19, p < .001$); and learning theory orientation ($\beta = .12, p < .001$) predicted more frequent EBT strategy use. Higher scores on the PPATR ($\beta_{\text{agency}} = -.14, p = .012$; $\beta_{\text{private}} = -.15, p = .013$), more low-income youth ($\beta_{\text{agency}} = -.11, p = .001$; $\beta_{\text{private}} = -.08, p = .001$), and greater time since degree ($\beta = -.10, p = .002$) predicted less frequent EBT strategy use.

Discussion

Youth MH providers in this national sample endorsed the full range of EBT strategies for youth anxiety, depression, and disruptive behavior. Consistent with prior research, providers gave an average rating of “sometimes” to “often” for EBT strategy use with considerable variability across strategies. We found somewhat higher use of EBT strategies for behavior and anxiety problems than in two prior studies of this population (Garland et al. 2010; Higa-McMillan et al. 2017 respectively). As in prior research, what many consider to be the most essential components of EBTS were some of the lowest rated. Less than half of providers reported activity scheduling for depression, just under two-thirds developed a hierarchy or conducted exposures for anxiety, and half to three-quarters implemented any behavioral parenting strategy (from a low of 53% time-out to a high of 79% consequences). These findings echo prior work showing infrequent use of exposures for anxiety and behavioral parent training for disruptive behavior (Garland et al. 2010; Higa-McMillan et al. 2017), indicating a need to attend more

Table 3 Summary of provider use of EBT strategies for youth with primary disruptive behavior disorders

EBT strategy	Any use ^a (%)	High frequency use ^b (%)	M	SD
Rapport/working alliance	100.00	97.55%	4.71	0.51
Praise or reward of skills/behaviors	99.69	77.30%	4.23	0.69
Psychoeducation	99.39	92.64%	4.52	0.66
Treatment description/rationale	99.08	76.99%	4.04	0.87
Future planning	98.47	67.79%	3.97	0.76
Treatment goals discussion/consensus	98.47	83.44%	4.28	0.73
Problem solving skills	98.16	71.17%	4.04	0.87
Cognitive model	98.16	82.52%	4.22	0.93
Affective education	97.85	75.77%	4.07	0.94
Specific agenda/session plan	97.55	69.63%	3.91	0.95
Parent training—reinforcement	96.63	75.77%	4.01	0.99
Parent training—parent–child relationship	96.01	64.72%	3.96	0.92
Parent training—commands	96.01	74.54%	3.96	1.02
Parent training—consequences	96.01	78.83%	4.08	1.00
Cognitive restructuring	95.09	53.68%	3.67	0.97
Self-monitoring and rewards	95.09	59.20%	3.62	1.07
Parent training—selective ignoring	95.09	67.18%	3.75	1.06
Provider modeling of skills/behaviors	95.09	68.10%	3.87	0.99
Parent training—monitoring	93.56	62.88%	3.68	1.12
In-session practice/role play	92.64	47.85%	3.52	1.01
Perspective taking	92.64	53.68%	3.44	1.07
Parent personal coping	92.64	59.20%	3.55	1.15
Out-of-session practice/homework	89.57	49.69%	3.34	1.22
Relaxation training	88.34	23.93%	2.98	0.98
Parent training—time out	82.52	53.07%	3.25	1.34

^aAny use indicates mean ratings of 2–5

^bHigh frequency use indicates mean ratings of 4–5

closely to providers' use of these key components. Our findings, alongside the growing support for transdiagnostic or core and common elements approaches (e.g., Ehrenreich et al. 2009; Weisz et al. 2017, 2012), suggest that focusing on providers' knowledge and use of key underused EBT strategies (versus lockstep manuals) may prove the most efficient use of limited training and implementation resources.

Several provider and contextual influences suggested by prior work also predicted EBT use. EBT use was associated with both standardized and ongoing assessment use. Given that these assessment practices are supported by research (e.g., Lambert et al. 2003), the positive associations were not unexpected. It also suggests that evidence-based assessment and treatment may be more connected in UC practice than thought (Youngstrom et al. 2015). Learning theory orientation, more positive attitudes toward innovation and evidence, more recent training, and fewer low-income clients predicted more EBT use. This suggests that future implementation efforts might benefit from targeting providers' attitudes toward research-supported practices and helping providers to flexibly deliver EBTs with low-income youth

who may present with barriers to EBT use (e.g., life events that interfere with EBT use; Chorpita et al. 2014). Given the relative recency of the evidence-based practice movement and its increasing emphasis in training programs (Sheehan et al. 2006), we may simply see greater saturation of EBTs within UC as new providers enter the field and others retire. Of course, if graduate school is the only time providers learn EBTs (Sheehan et al. 2006), experienced providers may be continually behind the evidence, which argues for improving the quality of continuing education trainings so they consistently impact knowledge, attitudes, and practices (Herschell et al. 2010).

Our provider-level findings are also consistent with growing evidence that agency-based interventions may facilitate EBT implementation (e.g., Glisson et al. 2012). In our sample, the more a provider perceived their agency as valuing quality care, the more they used EBT strategies. Interestingly, providers who perceived their agency as providing more training resources actually reported less EBT use than those with fewer resources. However, these two variables (perception that agency valued quality care and

perception that agency provided more training resources) were positively associated, which may indicate that agencies valuing quality care are also more likely to invest in training resources, but perhaps only when such training is needed. In other words, agencies that value quality care, but whose providers are already using EBTs, may actually invest less in training than similar agencies whose providers are not using EBTs.

In contrast to prior work (Higa-McMillan et al. 2015), psychologists did not report more EBT use than other disciplines; this may reflect widespread impact of the evidence-based practice movement across disciplines. Previous findings on youth age have been mixed (Higa-McMillan et al. 2015; Brookman-Frazee et al. 2010); in our sample, it was nonsignificant. There may be age-based differences in specific EBT strategy use that we did not examine [e.g., Wolk et al. (2016) found providers more likely to use behavioral strategies with younger and cognitive strategies with older youth]. Despite provider concerns that EBTs cannot address the unique needs of UC youth (Nelson et al. 2006), co-occurring problems and proportion of racial and ethnic minority youth did not predict EBT use. This nonsignificant finding may reflect our focus on EBT strategies which may allow greater flexibility in EBT implementation than lockstep manuals (Kendall and Beidas 2007). Given the effectiveness of common elements approaches versus lockstep manuals within UC (e.g., Weisz et al. 2012, 2017), future training and implementation efforts may wish to focus on common strategies and decision-support tools to encourage flexible fidelity to EBTs (Chorpita et al. 2005).

Our design has some noteworthy limitations. Observational coding was impractical with a large national sample so we relied exclusively on provider report. Prior research suggests that providers may over-report their use of treatment strategies in a given treatment session compared to trained coders (e.g., Hogue et al. 2015; Hurlburt et al. 2010). Interestingly, studies looking at a longer time span (e.g., a month) suggest that while providers still report more strategy use than trained coders, they are generally consistent with treatment experts (Chapman et al. 2013) and have reached acceptable reliability with trained coders (Borntrager et al. 2015). Further, while some of these previous studies asked providers about their use of prescribed strategies (i.e., strategies providers were supposed to implement), we strove to minimize social desirability bias by asking about a wide range of strategies, none of which were labeled as “evidence-based.” Our intent was to make it unlikely that a provider would endorse a given strategy simply as the “right” answer. Still, provider self-report may account for some of the higher use of EBT we found relative to past observational studies [our sample did report greater EBT use than Garland et al. (2010)].

It should also be noted that we did not ask providers to describe their rationale for using the strategies they reported with their given case. Although we did examine the impact of several case characteristics on EBT use, we do not know how and whether those characteristics or others may have influenced clinician behavior. Evidence-based practice in psychology (APA Presidential Task Force on Evidence-Based Practice 2006) includes client preference and clinical judgment, together with research support, to guide decision-making. As such, future research could query clinicians about their decision-making process in order to further our understanding of whether, and how, clinical decision-making may be informed by empirical research.

We also restricted our sample to guild members from five disciplines. Guild members may have more access to research publications and trainings through their memberships, which may have yielded a higher estimate than non-members. In addition, because of our decision to sample 1000 psychiatrists, we may have somewhat over-represented doctoral providers compared to current national norms, and it should be noted that we did not use weighting procedures in our analyses to generalize our survey results to the larger provider population (Lumley 2004). Our sample may also under-represent female and racial and ethnic minority providers, compared to previous estimates.

Our findings regarding agency features should also be interpreted with caution since we did not sample multiple providers within an agency. As such, our provider perceptions of their agency’s culture or climate are just that—one provider’s perception. To increase likelihood of response, we also adapted items from established measures in order to decrease time required to complete the survey. Finally, like previous research on attitudes toward EBTs, some PPAVQC items confounded evidence and innovation (e.g., “I like to try new types of practices that are supported by research”). Not everything new comes from science and future work could more carefully examine attitudes toward evidence separately from attitudes toward innovation.

Still, to our knowledge this is the first national, multidisciplinary survey to examine use of EBT strategies in UC. Our findings suggest that most EBT strategies are present within everyday clinical services, but key strategies (e.g., exposure; behavioral activation; parenting skills) are still implemented at low frequencies. To the extent that these strategies are in fact “key” for youth improvement, we need more focused training and implementation efforts to facilitate their consistent implementation within UC.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Missouri Institutional Review Board and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent This study was approved for a waiver of signed consent. All participants were provided with a consent statement.

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