Supervision in Community Mental Health: Understanding Intensity of EBT Focus

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Abstract

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The goal of the present study was to examine clinician, supervisor, and organizational factors that are associated with the intensity of evidence-based treatment (EBT) focus in workplace-based clinical supervision of a specific EBT, Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). Supervisors ($n = 56$) and clinicians ($n = 207$) from mental health organizations across Washington State completed online self-report questionnaires. Multilevel modeling (MLM) analyses were used to examine the relative influence of nested clinician and supervisor factors on the intensity of EBT focus in supervision. We found that 33% of the variance in clinician report of EBT supervision intensity clustered at the supervisor level and implementation climate was the only significant factor associated with EBT supervision intensity. While individual clinician and supervisor factors may play a role in EBT coverage in supervision, our results suggest that an implementation climate that supports EBT may be the most critical factor for improving intensity of EBT coverage. Implementation efforts that address the extent to which EBTs are expected, rewarded, and supported within an organization may be needed to support greater coverage of EBT during workplace-based supervision.

Keywords: Supervision, Implementation Climate, Evidence-Based Treatment, Community Mental Health, Trauma-Focused Cognitive Behavioral Therapy

Introduction

A substantial number of child and adolescent evidence-based treatments (EBTs) have been developed and tested through randomized controlled trials (Weisz, Ng, & Bearman, 2014). However, translating this research into effective and sustained implementation in community mental health settings has been an ongoing challenge in the field (Aarons, Ehrhart, Farahnak, & Sklar, 2014; Chu et al., 2014). EBTs validated in efficacy trials have shown variability in effectiveness in community settings, with several meta-analyses demonstrating that EBTs did not significantly outperform usual care (Weisz, Jensen-Doss, & Hawley, 2006; Weisz et al., 2014). This may be due in part to differing clinical supervision supports available in efficacy trials (Roth, Pilling, & Turner, 2010) that may be less feasible and commonly used in community settings (Funderburk et al., 2015; Schoenwald, Mehta, Frazier, & Shernoff, 2013), such as an intense focus on the EBT, direct observation with feedback (e.g., video or audio recorded sessions), role-playing, and modeling skills for clinicians. Research that focuses on supervisors in usual care settings (Chorpita & Regan, 2009) and on practices employed during clinical supervision may inform avenues for supporting more effective implementation (Herschell, Kolko, Baumann, & Davis, 2010).

Clinical supervision is identified as an implementation strategy that provides ongoing support following clinical training (Powell et al., 2015), but has notably been one of the least studied implementation factors for supporting EBTs (Accurso, Taylor, & Garland, 2011; Dorsey et al., 2013; Schoenwald et al., 2013). The literature includes a great deal of theoretical work on supervision and its important role in training, mostly led by Milne and colleagues (Milne & Dunkerley, 2010; Milne & Reiser, 2012). However, the limited empirical research on supervision is primarily descriptive or exploratory in nature (Hoge et al., 2011), despite findings from one

study that suggest that supervision may account for 16% of the variance in client treatment outcomes—approximately double the amount commonly attributed to specific treatment interventions (8%; Callahan, Almstrom, Swift, Borja, & Heath, 2009). There is also increasing theoretical (Nadeem et al., 2013) and empirical work on a related but distinct area: EBT-focused *expert consultation* (e.g., Bearman et al., 2013; Beidas, Edmunds, Marcus, & Kendall, 2012; Funderburk et al., 2015). While this is an important area of research, expert consultation is a costly resource (Herschell et al., 2010; Stewart et al., 2016), whereas providing clinical supervision of EBT through workplace-based supervision, utilizing existing supervisory staff, may provide a cost-effective, feasible alternative.

In children's mental health, which is the focus of this study, weekly workplace-based supervision is somewhat ubiquitous in community mental health organizations (Schoenwald, Chapman, et al., 2008), yet little is known about the specific focus and practices of supervision (Hoge et al., 2011) and the degree to which EBTs are covered when organizations participate in EBT implementation efforts (Dorsey et al., 2013). Accurso and colleagues (2011) conducted a descriptive study of the format and functions of workplace-based supervision, with a particular focus on coverage intensity of elements common in EBTs for behavior disorders. They found that a majority of supervision was clinically focused (vs. administrative), but that specific evidence-based practice elements were only discussed briefly (Accurso et al., 2011).

Our research group examined general supervision content of workplace-based supervision in a large sample of supervisors trained in EBT as part of a statewide EBT initiative (Dorsey, Pullmann, et al., 2017). Similar to Accurso and colleagues (2011), both supervisors and clinicians reported that a majority of weekly individual supervision was clinically focused, but only half of this time was focused on the two functions we proposed as most relevant to EBT:

case conceptualization and interventions (Dorsey, Pullmann, et al., 2017). Clinicians in the sample had an average caseload of 30.9 clients, likely suggesting limited time dedicated to any one case—TF-CBT or other—within the supervision hour, particularly given that part of the time (30%) was dedicated to non-clinical functions of supervision (Dorsey, Pullmann, et al., 2017). In contrast, research on community-based substance abuse treatment has found that workplace-based supervision was typically dominated by administrative issues (e.g., charting and paperwork; Carroll & Rounsaville, 2007). More research is needed to better understand the intensity with which workplace-based supervisors focus on EBT and which supervision practices (e.g., fidelity monitoring, clinical feedback, and practice of EBT skills) receive the most intense focus.

The present study focused on workplace-based supervisors who were trained in Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) as part of a state-funded implementation effort and were supervising clinicians in their organizations who provided TF-CBT. TF-CBT is an EBT with substantial efficacy and effectiveness data supporting positive outcomes for posttraumatic stress, depression, and behavior problems across a variety of settings (Dorsey, McLaughlin, et al., 2017). It has been widely disseminated, with at least 19 statewide implementation initiatives in the United States (Sigel, Benton, Lynch, & Kramer, 2013). Some of these implementation efforts have required supervisors to attend trainings along with their supervisees in an effort to provide ongoing support at their organizations (Cohen & Mannarino, 2008; Dorsey, Berliner, Lyon, Pullmann, & Murray, 2016). However, we know very little about how, and to what degree, workplace-based supervisors integrate EBT-specific content into their limited supervision time, given other demands, and what factors might be associated with intensity of EBT content coverage in supervision.

Increasingly, implementation research highlights the importance of considering multi-level determinants of behavior (e.g., Aarons, Hurlburt, & Horwitz, 2011). It is important for research on workplace-based supervision to examine variables at clinician, supervisor, and organizational levels to understand which variables influence supervision practices. In one of the few studies examining workplace-based, supervisor-level characteristics that predicted fidelity to an EBT, Schoenwald and colleagues found that supervision content predicted better clinician adherence to Multisystemic Therapy (MST) principles and subsequent client outcomes (Schoenwald, Sheidow, & Chapman, 2009). More research that examines specific predictors of supervisor behavior is needed.

Given the limited research on workplace-based supervision relative to research on clinician EBT use, we hypothesized that some of the correlates of clinician use of EBT—both at the individual and organizational level—might also be correlates of supervisor-level coverage of EBT. For example, research has found that clinicians with more positive attitudes towards EBTs reported more EBT use (Beidas et al., 2015; Nelson & Steele, 2007); thus, we hypothesized that supervisors with more positive attitudes towards EBTs may include more EBT content in supervision. Clinicians with less work experience appear to have more positive attitudes towards EBTs (Aarons, 2004) and marginally higher EBT use (Brookman-Frazee, Haine, Baker-Ericzén, Zoffness, & Garland, 2010). Though clinicians who attend EBT trainings typically gain knowledge of the EBT, it is not clear whether this knowledge gain translates into increased EBT use with clients (Beidas & Kendall, 2010), and more research is needed to examine the relationship between clinician and/or supervisor EBT knowledge and EBT content in supervision. Social cognitive theory posits that self-efficacy, or the belief in one's own capabilities, serves to "regulate motivation, affect, and behavior" (Bandura, 1998, p. 6) and this

construct has been linked to the implementation of health promotion interventions (Huijg et al., 2013); it is possible that a supervisor with higher self-efficacy in supervising an EBT may be more likely to include more EBT content in their supervision.

At the organizational level, the extent to which supervision time may be protected or prioritized for EBT-specific content may also be related to an organization's EBT implementation climate – employees' shared perception of the degree to which organizations expect, support, and reward EBT implementation and use (Aarons et al., 2014; Klein & Sorra, 1996). Many have noted the importance of a supportive EBT implementation climate for successful implementation (Ehrhart, Aarons, & Farahnak, 2014; Klein & Sorra, 1996; Weiner, Belden, Bergmire, & Johnston, 2011), and organizational factors may be an even better predictor of EBT use than individual provider characteristics (Aarons et al., 2014). In our research on workplace-based supervision, implementation climate was associated with more time dedicated to general clinical content (vs. administrative) and specifically to clinical content conceptualized as most relevant to EBT (i.e., case conceptualization, interventions; Dorsey, Pullmann, et al., 2017).

The purpose of the current study was to describe EBT-specific supervision in community mental health and to examine clinician, supervisor, and organizational factors associated with supervision content. The goal was to identify modifiable predictors of the extent to which supervision included content specific to high-quality EBT delivery and overcoming difficulties specific to the EBT (TF-CBT), or what we will call "EBT supervision intensity." We hypothesized that clinician-reported EBT supervision intensity would be positively associated with supervisors' attitudes towards EBTs, self-efficacy supervising the EBT, objective knowledge of the EBT, and clinicians' shared perception of their organization's EBT

implementation climate. We hypothesized that implementation climate would moderate the individual supervisor-level predictors such that a poor implementation climate could prevent intense EBT content in supervision, despite the level of supervisor attitudes, knowledge, or self-efficacy. We also hypothesized that EBT supervision intensity would be negatively associated with clinician years delivering therapy and knowledge of the EBT, as we anticipated that newly trained clinicians may require higher levels of EBT content in supervision.

Method

The current study builds upon an existing NIMH-funded study of workplace-based clinical supervision, the Supervision to Enhance Practice Study (STEPS; Dorsey et al., 2013). STEPS grew out of implementation efforts provided through the Washington State TF-CBT Initiative (WA TF-CBT Initiative). The WA TF-CBT Initiative began with a focus on TF-CBT in 2007, and in 2009 expanded to include CBT for depression, anxiety, and behavior problems. Trainings were initially 2 days and increased to 3 when the content was expanded, with 100-250 trainees per year. As of 2015, the WA TF-CBT Initiative had provided training in TF-CBT to over 900 community-based supervisors and clinicians from 80% of the community mental health organizations in WA (i.e., 80 of 99 organizations). Organizations are eligible to send new clinicians to trainings each year. Participation involved sending clinicians and at least one supervisor to a 2- or 3-day training and 6 months of follow-up consultation (1 hour of group conference calls, twice monthly). Supervisors had additional, optional post-training support via monthly technical assistance calls and an annual in-person, 1-day supervisor training, which covered TF-CBT and supervision-specific content. Some minimal implementation support was provided to leaders in organizations participating for the first time (e.g., phone consultation to ensure the training and consultation process was understood, discuss strategies used by other

organizations to address barriers, explain specific practice differences in EBTs, and elicit a commitment of support). Organizations who actively participated in the WA TF-CBT Initiative, defined as currently implementing TF-CBT and having at least one TF-CBT-trained supervisor ($N = 33$; 75% of the organizations that had been trained in the initiative by 2012, when STEPS began), were invited to participate in STEPS; 25 (76%) of these organizations enrolled in the study.

Procedure

Procedures were approved by the Washington State Institutional Review Board. All data were collected via online self-report Qualtrics surveys between September 2012-March 2015. Supervisors received $30 or $40 gift cards (depending on time of enrollment) and clinicians received $30 gift cards for their time to complete the survey. To account for expected staff turnover, enrollment in the study was ongoing. Clinicians and supervisors completed baseline surveys upon joining the study. The present cross-sectional study used data from these baseline surveys about supervision.

Participants

Participants included clinicians ($n = 207$) and their supervisors ($n = 56$) from 25 community mental health organizations distributed across 37 clinic locations in geographically diverse regions of WA State. Participants were predominantly female, White, and had master's-level training, consistent with demographics and background characteristics of the larger statewide initiative (Dorsey et al., 2016) and other large national community samples of clinicians (e.g., Glisson et al., 2008). Demographic information can be found in Table 1.

Inclusion criteria for supervisors were being trained in TF-CBT as part of the WA TF-CBT Initiative and currently supervising two or more clinicians who were study-eligible. There

were no exclusionary criteria for supervisors. Inclusion criteria for clinicians included having a participating supervisor, training in TF-CBT as part of the WA TF-CBT Initiative or completing a free online training, and having completed at least one TF-CBT case or having one currently underway. Exclusionary criteria for clinicians were having an exclusively non-child/adolescent caseload or immediate plans to leave the organization. Approximately 73% of supervisors and 76% of clinicians recruited consented to participate in the study.

Measures

Demographics. Participants provided background and demographic information on age, sex, ethnicity/race, education, licensure status, years delivering therapy, caseload size, and number of clinicians under each supervisor.

EBT Supervision Intensity. Clinician report of EBT supervision intensity was measured by the *TF-CBT Supervision Practice Assessment.* The 8-item index was adapted from a program evaluation measure created by one of the TF-CBT developers (Deblinger; Child Abuse Research Education and Service Institute, Rowan University, 2013) and the Project BEST team while conducting a statewide implementation of TF-CBT in South Carolina (National Crime Victims Research and Treatment Center, MUSC, 2010). It covers developer-nominated key supervision tasks important for high-quality EBT delivery and overcoming common challenges specific to TF-CBT. Items are rated on a 5-point Likert scale that ranges from 1 (*Never*) to 5 (*Almost Always*). Sample items include: "Supervisor helped you manage 'crisis of the week' situations and stay on track working through the TF-CBT PRACTICE components," and "Supervisor helped you with strategies for overcoming client avoidance of trauma-focused work (e.g., narrative)." See Figure 1 for all 8 items on the index; an average score was used in predictor analyses.

Self-Efficacy in Supervision. Supervisor self-reported competence in supervising TF-CBT was measured using the *Self-Efficacy in Supervision* index, adapted from a measure created by one of the TF-CBT developers (Deblinger; Child Abuse Research Education and Service Institute, Rowan University, 2013) and the Project BEST team while conducting a statewide implementation of TF-CBT in South Carolina (National Crime Victims Research and Treatment Center, MUSC, 2010). The measure consists of 13 items measured on a 5-point Likert scale ranging from 1 (*Not at All*) to 5 (*Exceptionally*). Sample items include rating how competent supervisors feel to: "Supervise clinicians in all of the TF-CBT components," and "Suggest and describe in detail several alternative methods for implementing each TF-CBT component."

TF-CBT Knowledge. A 13-item, multiple choice knowledge test was used to assess supervisor and clinician knowledge of TF-CBT. The measure builds on the Denver Post Health Survey (Fitzgerald, 2010), with additional items added by our team to assess content similar to that assessed in the TF-CBT certification program (https://tfcbt.org). This measure demonstrated good item difficulty and discrimination, as well as evidence of convergent validity (Dorsey, Pullmann, et al., 2017).

EBT Attitudes. Supervisor attitudes towards EBTs were measured with a 5-item version of the *Modified Practice Attitudes Scale* (MPAS) with acceptable internal consistency and good validity (Park, Ebesutani, Chung, & Stanick, 2016). The measure assesses attitudes towards adopting new interventions in community mental health settings (Borntrager, Chorpita, Higa-McMillan, & Weisz, 2009). Responses are rated on a 5-point Likert scale ranging from 0 (*Not at All*) to 4 (*To a Very Great Extent*), with higher mean scores indicating more positive attitudes towards EBTs. A sample item (reverse scored) includes: "Clinician experience and judgment are

more important than using EBTs." The current study replicated previously reported acceptable internal consistency (Cronbach's α = .78).

EBT Implementation Climate. Clinician-reported EBT implementation climate was measured using the *Evidence-Based Organizational Checklist*, a 6-item questionnaire used to assess the degree to which organizations expect, support, and reward EBT use. Content areas assessed align with other implementation climate measures (e.g., Ehrhart et al., 2014). Questions are rated on a 4-point Likert scale ranging from 1 (*Never*) to 4 (*Ongoing/Routine*), and include items such as: "Executive leadership (e.g., administrators, directors) explicitly and repeatedly express support for and promote use of evidence-based treatments (EBTs)." Higher scores indicate a more supportive EBT implementation climate. Previous studies utilizing this measure have demonstrated unidimensionality of the construct, good internal consistency (see Dorsey et al., 2016), and construct validity (see Dorsey, Pullmann, et al., 2017). Clinician scores of implementation climate were aggregated at the supervisor level (i.e., "supervisory team") due to the 2-level model in the present study and the theory that direct clinical supervisors play a significant role in conveying an organization's EBT implementation climate to clinicians (Aarons et al., 2014). There was an average of four clinicians nested within each supervisory team (*M* = 4.27*, SD* = 2.45). Construct validity of the measure is supported by a significantly high supervisor-level Intraclass Correlation ICC(1,1) of .42. In line with other studies using this measure with nested data, we believe this ICC reflects "validity" because the clustering supports the idea that the construct more accurately reflects implementation climate at the higher, supervisor level (Jacobs, Weiner, & Bunger, 2014; Marsh et al., 2012).

Analytic Plan

Analyses were conducted in SPSS 20. Means, percentages, and standard deviations were calculated for descriptive variables. We examined relations between clinician- and supervisor-level variables and EBT supervision intensity using 2-level multilevel models (MLM) with random effects at the supervisor level due to the clustered nature of the clinicians within supervisors. Although a 3-level model including a random intercept for organization would theoretically best fit the structure of the data, several organizations had only a single supervisor participating in the study and clustering estimates in the three-level models (i.e., including office or organization as a third level) were unreliable or failed to converge.[1] Therefore, 2-level models with supervisors (level-2) and clinicians (level-1) were computed using Maximum Likelihood estimation during model building and Restricted Maximum Likelihood estimation to obtain the final parameter estimates. The intraclass correlation coefficient (ICC) of the null model demonstrated that approximately 33% of the total variance in clinician-reported EBT supervision intensity occurred at the supervisor level, confirming the appropriateness of multilevel modeling.

Model building for hypothesis testing followed standard protocol (Raudenbush & Bryk, 2002). All independent variables were grand mean-centered. At level 1, we included clinician knowledge and clinician years delivering therapy. At level 2, we included supervisor age, client caseload, number of supervisees, supervisor knowledge, supervisor attitudes towards EBTs, supervisor self-efficacy supervising TF-CBT, and EBT implementation climate. The aggregated EBT implementation climate scores were included as a level-2 predictor in order to estimate the effect of implementation climate on EBT supervision intensity. See Table 2 for single-predictor MLMs predicting EBT supervision intensity.

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[1] Note: Though the random effects cannot be estimated in a 3-level model, when the analyses were run in a 3-level model with implementation climate aggregated at the office-level, the estimates were similar and conclusions identical.

We removed or retained parameters based on model fit statistics and theoretical interest. We assessed model fit by evaluating the statistical significance of the -2 log likelihood deviance value. We also examined whether the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) deviance values were large enough to be noteworthy, with values above 2 considered positive evidence of model superiority, and values above 10 indicating strong evidence (Singer & Willett, 2003). Each level-1 predictor was added individually as a fixed effect and then as a random effect, and -2 log likelihood deviance with χ^2 significance tests were used to determine model specification in subsequent models. After a level-1 model was built, each level-2 predictor was added as a fixed effect in a stepwise fashion to assess model fit, and interaction terms were added in a block to test for interactions between climate and supervisor attitudes; climate and supervisor knowledge; and climate and supervisor self-efficacy. Residuals were graphed and plotted on a Q-Q plot to ensure normality. Significant effects ($p < .05$) were retained and non-significant effects were trimmed for final model parsimony.

Results

Correlations among predictor variables were computed to check for multicollinearity. Implementation climate was positively correlated with the number of cases supervisors typically carried, $r(41) = .35, p = .02$; supervisor knowledge, $r(47) = .31, p = .03$; and supervisor attitudes towards EBTs, $r(47) = .31, p = .03$. Supervisor number of cases typically carried was also negatively correlated with the number of clinicians under their direct supervision, $r(41) = -.43, p < .01$.

EBT Supervision Intensity Descriptives

Clinicians reported that on average, their supervisors included a moderate intensity of overall EBT focus in supervision during the past 3 months (i.e., between "rarely" and "sometimes" on the 5-point scale; $M = 2.71, SD = 0.94$; see Table 1). We looked at individual

items to descriptively understand what EBT content clinicians reported in workplace-based

supervision (see Figure 1). Clinicians reported that on average, their supervisors provided

specific constructive feedback, discussed engagement techniques, and helped overcome client

avoidance of exposure at a level between "sometimes" and "often." On average, clinicians

reported that supervisors rarely asked them to role-play TF-CBT components (between "never"

and "rarely"). Clinicians also reported that supervisors infrequently (between "rarely" and

"sometimes") reviewed their progress through the TF-CBT components or encouraged the

completion of treatment in 16-20 sessions (i.e., part of TF-CBT fidelity; Cohen, Mannarino, &

Deblinger, 2006).

Model Selection

As previously stated, a null model indicated that 33% of the variance in clinician report

of EBT supervision intensity clustered at the supervisor level (ICC = .33). Therefore, clinicians'

report of the intensity of EBT focus in supervision may be attributed to supervisor-level factors

in addition to clinician-level factors. Clinicians supervised by the same supervisor will be

referred to as "supervisory teams" for brevity regarding aggregated implementation climate

ratings; EBT supervision intensity was measured at the individual clinician level (i.e., not

aggregated). Level-1 predictors (clinician years delivering therapy, clinician knowledge) were

entered in bivariate analyses as fixed effects and then as random effects. No randomly varying

clinician-level slopes were significant and allowing the effects of these level-1 predictors to vary

across supervisory teams did not improve model fit, thus all level-1 slopes were fixed.

Only perceived EBT implementation climate was a significant predictor of EBT

supervision intensity ($b = .73, p < .001$; see Table 3). For every unit increase in supervisory team

implementation climate score above the average climate score for the sample, there was a .73

unit increase in EBT supervision intensity. This effect indicates that clinicians within supervisory teams with higher average perceived implementation climates reported higher EBT supervision intensity. No other predictors or interaction terms were significantly associated with EBT supervision intensity and were therefore not included in the final model. Table 3 depicts results for the null and final models predicting EBT supervision intensity. Deviance statistics provided very strong evidence that the final model was a better fit than the null model (Δ-$2LL_{(1)}$ = 18.42, p <.001, $\Delta AIC_{(1)}$ = 20.39, $\Delta BIC_{(1)}$ = 23.74; see Table 3). The final model accounted for 69.3% of the supervisor-level variance, specifically, and 20.5% of the overall variance.

Discussion

Our findings add to the limited literature on workplace-based supervision of EBT in community mental health organizations. They also highlight the importance of implementation climate for EBT-specific practices of workplace-based supervisors, converging with some of our other work, where implementation climate was associated with EBT-concordant functions (i.e., a greater focus on case conceptualization/interventions; Dorsey, Pullmann, et al., 2017). While other studies have found organizational factors to be better predictors of clinician behavior than individual-level clinician factors (e.g., Beidas et al., 2015), our study is among the first in mental health to highlight that organizational factors, like implementation climate, may also be important correlates of supervisory practices specific to an EBT (TF-CBT).

In our study, clinicians reported that on average, supervisors were including the highest amount of supervision intensity (between "sometimes" and "often") on overcoming client avoidance of trauma-focused work (i.e., exposure), engaging families in treatment, and giving constructive feedback. Despite the fact that almost all evidence-based approaches for treating trauma include exposure (Dorsey, McLaughlin, et al., 2017), research has shown that clinicians

may be unlikely to use exposure, potentially due to limited training and a lack of comfort using this technique (Borntrager, Chorpita, Higa-McMillan, Daleiden, & Starace, 2013). It is heartening to learn that TF-CBT-trained, workplace-based supervisors in our study focused on client avoidance of exposure in supervision. Although it has not yet been empirically examined, clinicians who receive a greater intensity of focus on *client* avoidance of exposure in supervision may be more likely to then use exposure in client sessions. It is also encouraging that supervisors included client engagement as among those areas that received a greater intensity of focus, given that comorbid difficulties and treatment obstacles (e.g., economic hardship) are more common in community settings than in efficacy trials (Southam-Gerow et al., 2003), and rates of treatment retention can be low, with over two-thirds of families dropping out of treatment within the first seven sessions (McKay, Harrison, Gonzales, Kim, & Quintana, 2002).

Clinicians reported that their supervisors gave attention to providing specific constructive feedback, which is important for building competency and skill in EBT-trained clinicians (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). A review of auditing and feedback as a quality improvement strategy in healthcare found that feedback led to some improvements in clinical practice, especially when delivered by a supervisor or colleague (Ivers et al., 2012). It is promising that clinicians in the current sample reported receiving specific constructive feedback from their workplace-based supervisors.

Although all of the items on the TF-CBT Supervision Practice Assessment reflect important practices of TF-CBT supervision, clinicians reported that some were rarely included in supervision sessions, such as role-playing EBT techniques. Role-play has been posited as a more active training technique and as a possible analogue for observation of direct practice (Beidas, Cross, & Dorsey, 2014; Cross et al., 2011); however, it may be more common in efficacy trials

(Roth et al., 2010) than in community mental health settings. It is possible that supervisors and/or clinicians in our sample felt anxious about participating in role-plays at baseline (Beidas et al., 2013) or that they did not have guidance on how to carry out role-plays in their supervision sessions. It is also possible that the limited time allotted for supervision may hinder the ability to include role-plays specific to TF-CBT, given findings that on average, cases were discussed for 12 minutes by the TF-CBT-trained supervisors and clinicians enrolled in STEPS, the parent study from which the current participants were sampled (Dorsey et al., 2018). In other research, role-plays with supervisors who were external, expert consultants predicted clinician use of evidence-based practices in session, specifically for older clinicians (Bearman et al., 2013). The randomized controlled trial (RCT) conducted as part of STEPS will directly investigate the addition of role-play to workplace-based supervision, making it possible for future analyses to examine the use and impact of role-play more closely (Dorsey et al., 2013).

Our findings suggest that on average, supervision included progress review (i.e., reviewed progress through the TF-CBT components) and length of treatment relatively infrequently, both of which are important contributors to TF-CBT fidelity. In many, but not all cases, fidelity has been found to be associated with better client outcomes (e.g., Schoenwald, Carter, Chapman, & Sheidow, 2008). For TF-CBT, fidelity includes that treatment is relatively brief in nature—ideally between 12-18 sessions (Cohen et al., 2006). From our research team's collective experience as expert consultants for TF-CBT, one commonly encountered challenge to fidelity for clinicians is progressing through early TF-CBT elements in a brief number of sessions so that they can begin the Trauma Narrative element. This delay extends the time before initiating explicit exposure and, often, overall treatment length. Given national shortages of mental health providers and findings that a majority of youth with need do not receive mental

health care (Merikangas et al., 2011), using relatively brief EBTs can be advantageous, but only when clinicians can be supported to move through the treatment elements and provide treatment within the recommended treatment duration. Thus, these two factors—progress review and length of treatment—may be closely intertwined.

EBT implementation climate was the only factor significantly related to EBT supervision intensity. This is consistent with previous work in which organizational factors were more strongly related to EBT use than individual factors (Beidas et al., 2015), though research to date has focused more on clinician-level EBT use. To our knowledge, this study is the first to suggest that implementation climate is associated with the intensity of supervision content specific to an EBT (TF-CBT). Potentially, organizations with a more positive implementation climate encourage or incentivize supervisors to cover EBT content, prioritize funding for sending clinicians and supervisors to EBT trainings, or make workload adjustments so that supervisors can spend more time on EBT-focused tasks and less time on administrative tasks.

Surprisingly, none of the individual clinician- or supervisor-level factors were significant predictors of EBT supervision intensity, despite variance being accounted for at both individual levels. We would have expected supervisors' attitudes, self-efficacy and/or knowledge to predict intensity. Clinician knowledge and experience also did not predict EBT intensity, which might suggest that supervisors have a consistent way in which they supervise EBT, rather than tailoring their supervision content based on clinician experience. It is also possible that our study did not include some important constructs that might influence supervision content (e.g., supervisor-clinician alliance), or alternately, that implementation climate is so influential that it overpowers the effect of individual-level predictors. There was evidence of some multicollinearity among the tested predictor variables; therefore, clinicians' impressions of implementation climate may in

part reflect a range of quality indicators, including the skills, knowledge, and attitudes of their supervisors.

Our study has a few strengths. The large sample size and geographically diverse statewide representation support the external validity of the current findings. In addition, the research study is grounded within the context of a state-funded EBT implementation effort, which may make findings more immediately translatable to community settings than implementation efforts started specifically for research purposes. Including both clinician and supervisor report, and having implementation climate measured at an aggregate level (i.e., all clinicians under a supervisor), are also strengths.

There are several limitations that should be considered when interpreting the current findings. First, the data is subject to biases inherent in all self-report data (e.g., perceived demand characteristics), potentially lowering the internal validity of the current study. It will be important for future research to examine how self-report data converges with objectively coded supervision data to address this limitation. Next, due to the cross-sectional nature of the current study, it is not possible to disentangle the direction of the relations between EBT implementation climate and EBT supervision intensity. It may be that supervisors' coverage of EBT in their supervision is influencing the clinicians' perception of the implementation climate as more EBT-supportive, or that implementation climate is predicting supervisors' ability to spend supervision time on EBT content, or some combination. While the study's use of multiple reporters was an overall strength, it is worth noting that implementation climate and EBT supervision intensity were both reported by clinicians, although implementation climate was an aggregated rating of average climate scores within supervisory teams. The study's focus on TF-CBT supervision may also limit the generalizability to other EBTs. Finally, there are potential selection effects because

of the voluntary nature and recruitment criteria of the study that may limit the generalizability of the findings. We did not assess differences between organizations that did and did not participate in the WA State Initiative, nor between those that did or did not agree to participate in the study. It is possible that study-eligible organizations (i.e., that still had an initiative-trained supervisor) might have more positive implementation climates than those that no longer had an initiative-trained supervisor.

Conclusions

The present study adds to the limited literature on workplace-based supervision and, to our knowledge, it is the first to focus on factors associated with specific EBT supervision intensity. Given that implementation issues in community mental health organizations impact treatment for children and adults, we believe the present findings may also hold relevance for the implementation of EBTs with adult clinical populations. Although individual clinician and supervisor factors may matter for EBT coverage in supervision, our findings suggest that an organization's implementation climate may be equally or even more important.

Implementation efforts that positively impact mechanisms of EBT implementation climate are needed. For example, helping organizational leaders and supervisors convey the value and importance of EBT use, while supporting and devoting time to EBT-focused supervision, may have the potential to enhance clinician EBT fidelity as well as bolster client outcomes. Weiner and colleagues (2011) have proposed that implementation policies and practices, as well as broader organizational features (e.g., organizational climate, culture), impact implementation climate. Birken and colleagues proposed several "middle-manager" (employees managed by top managers who also manage direct providers, i.e., workplace-based supervisors) behaviors that are impacted by implementation policies and practices, which in turn impact

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implementation climate and implementation effectiveness (Birken, Lee, Weiner, Chin, & Schaefer, 2013). Exciting efforts are underway to intervene with individuals at the supervisor level and increase leadership to positively impact implementation climate (Aarons, Ehrhart, Farahnak, & Hurlburt, 2015).

Future longitudinal studies will help clarify the direction of the relationship between implementation climate and EBT supervision intensity, and the most effective methods of intervention. Furthermore, analyses from the RCT of the parent study (STEPS) that incorporate a combination of self-report and objectively coded supervision and clinician session data will be useful for clarifying next steps in implementation efforts. The RCT design may also help to identify specific supervisory strategies that may be associated with EBT-supportive organizational environments as well as improved client outcomes. In sum, the findings highlight the importance of examining organizational and supervisory factors that are amenable to change to further optimize EBT implementation efforts and enhance our overall mental health delivery systems in community settings.

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Table 1
Participant Demographics and Descriptives

Variables	Supervisor (*n* = 56)		Clinician (*n* = 207)	
	n	*%*	*n*	*%*
Race/Ethnicity				
Asian	2	3.6%	4	1.9%
Black/African American	0	0.0%	5	2.4%
Native Hawaiian/Other	1	1.8%	2	1.0%
White/Caucasian	49	87.5%	170	82.1%
Multiracial	2	3.6%	9	4.3%
Hispanic	2	3.6%	15	7.2%
Other	0	0.0%	2	1.0%
Female	42	75.0%	174	84.1%
Academic Degree				
Bachelor's-level	0	0.0%	8	3.9%
Master's-level	53	94.6%	193	92.3%
Ph.D.	1	1.8%	4	1.9%
Psy.D.	1	1.8%	1	0.5%
Other	1	1.8%	1	0.5%
Training/Degree				
Social Work	19	33.9%	49	23.8%
Psychology	5	8.9%	15	7.2%
Marriage/Family	9	16.1%	33	16.0%
Counseling Psych.	22	39.3%	99	47.8%
School Psych.	1	1.8%	1	0.5%
Other	0	0.0%	10	4.9%
Licensed	53	94.6%	90	43.5%
	M	*SD*	*M*	*SD*
Age	41.7	9.7	37.1	10.6
Years in field	14.3	7.2	7.1	6.1
Years at organization	7.9	6.2	3.5	3.4
Caseload size	12.7	11.8	30.9	13.8
Years providing therapy	12.0	6.8	5.2	5.2
Number of supervisees	7.9	4.5	--	--
TF-CBT Knowledge	10.0	1.8	9.0	1.9
Supervisor attitudes	4.2	0.5	--	--
Supervisor self-efficacy	3.3	0.6	--	--
Implementation climate	--	--	3.0	0.7
EBT Supervision Intensity	--	--	2.7	0.9

Table 2

Single Factor Level-1 and Level-2 Models Examining EBT Supervision Intensity

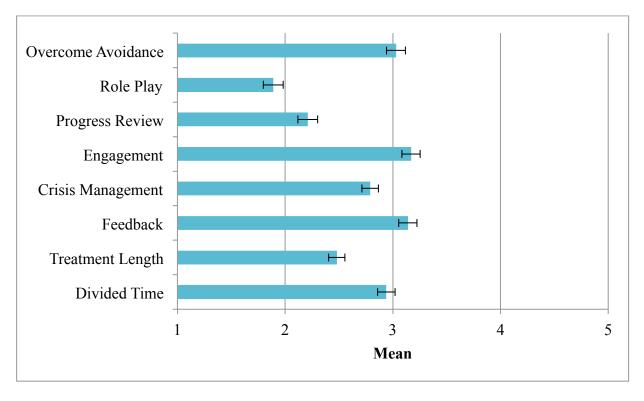| Variable	b	SE	p	95% CI
Level 1 (clinician)				
TF-CBT knowledge	-0.02	0.03	0.586	[-0.08, 0.04]
Years delivering therapy	-0.01	0.01	0.447	[-0.03, 0.02]
Level 2 (supervisor)				
Age	-0.01	0.01	0.363	[-0.03, 0.01]
Typical caseload	0.02	0.01	0.080	[-0.00, 0.03]
# of supervisees	-0.04	0.02	0.117	[-0.08, 0.01]
TF-CBT knowledge	0.03	0.06	0.600	[-0.09, 0.16]
EBT attitudes	0.10	0.21	0.628	[-0.32, 0.53]
TF-CBT supervision efficacy	0.31	0.20	0.136	[-0.10, 0.71]
EBT implementation climate	0.73	0.12	<.001	[0.48, 0.98]

Note: Clinician n = 207, Supervisor n = 56.

Table 3

Null and Final Multilevel Models: Factors Associated with EBT Supervision Intensity

	Null Model				Final Model			
Factor	*b*	*SE*	*p*	95% CI	*b*	*SE*	*p*	95% CI
Intercept	2.69	.10	<.001	[2.49, 2.89]	2.71	.07	<.001	[2.56, 2.86]
EBT Imp. Climate					.73	.13	<.001	[.47, .98]
Variance Components	Variance	*SE*	*p*	95% CI	Variance	*SE*	*p*	95% CI
Residual	.63	.07	<.001	[.50, .79]	.65	.07	<.001	[.52, .82]
Intercept	.31	.11	.004	[.15, .61]	.09	.06	.141	[.02, .36]
Fit	Statistic	*df*			Statistic	*df*	Deviance	*p*
-2 Log Likelihood	540.62	3			522.23	4	18.42	<.001
Akaike Information Criterion	546.62	3			526.23	4	20.39	
Bayesian Information Criterion	556.60	3			532.87	4	23.74	

Note: Clinician *n* = 207, Supervisor *n* = 56.

Figure 1
Clinician Report of EBT Supervision Intensity

Note: Clinician *n* = 207. Scale (in the last 3 months): *1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Almost Always*. Standard error bars included for each item mean.

1. Overcome Avoidance: Your supervisor helped you with strategies for overcoming client avoidance of trauma-focused work (e.g., narrative).
2. Role Play: Your supervisor asked you to role-play or practice a TF-CBT technique in supervision.
3. Progress Review: Your supervisor reviewed progress through the TF-CBT PRACTICE components with each of your TF-CBT cases.
4. Engagement: Your supervisor discussed techniques to encourage greater family engagement by identifying methods to overcome obstacles.
5. Crisis Management: Supervisor helped you manage "crisis of the week" (COW) situations & stay on track working through the TF-CBT PRACTICE components.
6. Feedback: Supervisor provided specific constructive feedback when you had difficulty doing TF-CBT activities.
7. Treatment Length: Your supervisor encouraged the completion of the TF-CBT treatment protocol in about 16-20 sessions or fewer.
8. Divided Time: Supervisor divided time effectively between reviewing cases that were responding well & those that were more difficult or complex.