Supervisory alliance as a moderator of the effects of behavioral rehearsal on TF-CBT fidelity: results from a randomized trial of supervision strategies

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Abstract

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The present study examined relations between supervisory alliance and fidelity to the trauma narrative component of Trauma-Focused Cognitive Behavioral Therapy, as well as how supervisory alliance might moderate the effect of behavioral rehearsals (i.e., role plays) on fidelity. Forty-two supervisors and 124 clinicians from 28 different community-based mental health offices across Washington State participated. Clinicians were randomized to receive one of two supervision conditions—symptom and fidelity monitoring or symptom and fidelity monitoring with behavioral rehearsal. Supervisory alliance alone did not predict adherence or extensiveness of the trauma narrative. One aspect of alliance, client focus, significantly altered the effect of supervision condition on adherence ($p=0.05$); however, this effect was only seen in 43.5% of clinicians. A second aspect of alliance, rapport, altered the effect of condition on trauma narrative extensiveness with moderate significance ($p=0.09$). Future research should investigate strategies to improve supervisory alliance or match supervision strategies to specific supervisor-clinician dyads.

In recent years, significant strides have been made in developing and evaluating evidence-based treatments (EBTs) for youth mental health problems. While support grows for EBTs, there have been challenges with implementing and sustaining their use in community mental health settings (CMH; e.g., Beidas et al., 2019; Chu et al., 2015). Despite a large portion of youth receiving care in CMH, meta-analyses suggest EBTs may not outperform "usual" care for key subgroups of youth in these settings (Weisz, Jensen-Doss, & Hawley, 2006; Weisz, Ng, & Bearman, 2014). One reason EBTs may not outperform usual care in CMH is because of challenges with implementing EBTs with fidelity—as they were intended by treatment developers (Proctor et al., 2011). Fidelity has been associated with better clinical outcomes (Schoenwald, Carter, Chapman, & Sheidow, 2008) and is an important aspect of EBT implementation.

Several clinician- and organization-level factors have been associated with EBT implementation and fidelity in CMH. First, clinicians must possess adequate knowledge to deliver an EBT with fidelity; however, efforts to increase access to EBTs through improving therapist knowledge alone have resulted in little change in practice (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Studies have found that attitudinal preferences, such as attitudes towards EBTs, may explain some variation in EBT fidelity within CMH (Beidas, Edmunds, et al., 2014). Organizational climate and activities have also been linked to EBT implementation (Ehrhart, Aarons, & Farahnak, 2014). Greater EBT implementation climate—shared perceptions of the degree to which organizations expect, support, and reward EBT implementation (Klein & Sorra, 1996)—has been linked to successful EBT implementation (Ehrhart, Aarons, & Farahnak, 2014).

Implementation researchers have focused on identifying strategies to address clinician- and organization-level factors that influence EBT implementation. Of note, a growing body of literature has examined post-training consultation and supervision as a method of supporting the implementation of EBTs (Herschell, Kolko, Baumann, & Davis, 2010; Wheeler & Richards, 2007). Consultation, which is common among EBT effectiveness trials, typically involves an external expert providing guidance on how an EBT should be applied to clinicians' cases. It has proven effective for improving therapist EBT fidelity and skill (Beidas, Edmunds, Marcus, & Kendall, 2012; Funderburk et al., 2014; Herschell et al., 2010); however, the cost and resources required for expert consultation may be prohibitive in CMH (Stewart et al., 2016). CMH agencies may be limited in their ability to pay expert consultants for on-going consultation, especially in an environment of rising costs and decreased financial support (Stewart et al., 2016). As such, more cost-effective support strategies are needed.

One potentially more cost-effective and feasible strategy for supporting EBT implementation in CMH is workplace-based supervision. Supervision is defined as "relationship-based education and training that is work-focused and which manages, supports, develops and evaluates the work of colleagues" (Milne, 2007, p. 439). There is a great deal of theoretical research on supervision and its role in training mental health clinicians (e.g., Milne & Dunkerley, 2010; Milne & Reiser, 2012); however, much of this research has been informed by supervision practices in randomized controlled trials, often with doctoral-level psychologist trainees. Workplace-based supervision in CMH is similar, in that it is a relationship-based education tool with a focus on improving practice; however, workplace-based supervision in CMH is distinct from supervision provided in EBT trials. It is typically led by a middle-manager (as opposed to clinical expert) and includes less time for EBT coverage and less observation of clinician skill

(Dorsey et al., 2018). Studies have shown that workplace-based supervision occurs weekly in most CMH settings (Schoenwald, Chapman, et al., 2008) and has a variety of functions, including review of both clinical and non-clinical tasks (Dorsey et al., 2018; Dorsey, Pullmann, et al., 2017). While these studies provide some insight into the occurrence and substance of supervision in CMH, little research has examined how workplace-based supervision can be utilized to support EBT implementation and ensure fidelity.

The theoretical literature on supervision includes a number of "gold standard" supervision techniques that have been proposed to maximize clinician learning (Milne, Aylott, Fitzpatrick, & Ellis, 2008). Such techniques include symptom and fidelity monitoring (SFM), two techniques in which supervisors monitor clients' symptoms as well as clinician fidelity to an EBT. Symptom monitoring enables supervisors to regularly assess client functioning and response to the EBT (Worthen & Lambert, 2007). Fidelity monitoring allows supervisors to track clinicians' progress through an EBT and its elements. Another technique is behavioral rehearsal (BR), which involves simulated clinical encounters that act as an analogue to observing actual clinical practice (Beidas, Cross, & Dorsey, 2014). A previous study from our research group examined the use of these supervision techniques in CMH and found that while SFM was used in approximately half of all supervision sessions, BR occurred in only 22% of sessions (Dorsey et al., 2018). Increasing use of gold standard supervision techniques may be one way to improve EBT fidelity in CMH; however, it may be important to consider the clinician-supervisor relationship in which supervision occurs.

Supervisory alliance, defined as the bond between supervisors and their clinicians as well as agreement on tasks and priorities of supervision (Johnson, Pas, & Bradshaw, 2016), may influences which supervision techniques work for whom. As a "relationship-based" process, it

follows that the relationship between a supervisor and clinician might influence the effects of supervision. Expansive literature on the therapeutic alliance—the bond between clinicians and their clients as well as agreement on therapeutic tasks and goals (Bordin, 1979)— has demonstrated a link between therapeutic alliance and clinical outcomes (McLeod, 2011). In one study of TF-CBT, higher alliance significantly predicted better client outcomes in TF-CBT but not in usual care (Ormhaug, Jensen, Wentzel-Larsen, & Shirk, 2014). The authors suggest this may be because alliance catalyzes engagement in active therapy components, a finding that is consistent with other post-traumatic stress treatment studies, where therapeutic alliance has been associated with better treatment adherence (Keller, Zoellner, & Feeny, 2010).

Supervision may function similarly to therapy, involving a parallel process. Supervisors try to shape clinician behavior, just as clinicians try to shape client behavior. As such, supervisory alliance may similarly predict engagement in supervision activities or later treatment fidelity; however, as of yet there has been relatively little research that investigated the impact of supervisory alliance on treatment fidelity. One study suggested that clinician perceptions of supervisory alliance positively predicts psychodynamic treatment adherence (Patton & Kivlighan, 1997). Emerging evidence in school-settings has also suggested that higher alliance between teachers and their coaches predicts better implementation of evidence-based classroom management protocols (Johnson, Pas, Bradshaw, & Ialongo, 2017; Wehby, Maggin, Partin, & Robertson, 2012). To our knowledge, no studies have yet examined the impact of supervisory alliance on the implementation of cognitive behavioral therapies (CBT).

The effects of the supervisory alliance may be more pronounced with certain CBT elements, such as exposure. Usual care for trauma exposed youth does not typically include exposure elements (Borntrager, Chorpita, Higa-McMillan, Daleiden, & Starace, 2013), and

studies have shown that CMH clinicians are often uncomfortable initiating exposures and may not have strong intentions to deliver exposure elements (Wolk et al., 2019). As such, a goal of supervision in CMH may be to support clinicians through their own felt anxiety and hesitation around starting exposure and facilitate fidelity to exposure elements. However, the potential for supervision to impact clinicians' anxiety and improve fidelity may be impacted by supervisory alliance—if a clinician has a less strong alliance with their supervisor, they may be less likely to trust their supervisor's guidance. Further, this impact may be stronger with certain supervision techniques, such as BRs, that require more participation or vulnerability from clinicians. Research suggests that CMH clinicians often experience anxiety when participating in BRs (Beidas et al., 2013), which could potentially be related to or impacted by their supervisory alliance. However, as of yet, little research has assessed the relations between supervisory alliance, supervision techniques, and EBT fidelity.

The aim of the present study was to extend the existing literature on supervisory alliance and examine the impact of alliance on fidelity to exposure within CMH as well as how supervisory alliance moderates the impact of BRs on fidelity. We hypothesized that supervisory alliance would independently predict fidelity to exposure and that supervisory alliance would moderate the effect of BR on fidelity. All hypotheses and models, including interactions, were pre-registered (Triplett, 2019).

Method

Supervision to Enhance Practice Study (STEPS)

Data for this analysis come from the Supervision to Enhance Practice Study (STEPS; see Dorsey et al., 2013 for protocol). STEPS consisted of an initial descriptive study of supervision practices within CMH (see Dorsey et al., 2018, 2017 for results) and a subsequent randomized

controlled trial (RCT) of supervision techniques, with clinicians randomized to receive either symptom and fidelity monitoring (SFM) or symptom and fidelity monitoring with added behavioral rehearsal (SFM+BR). STEPS focused on one particular EBT—Trauma-Focused Cognitive Behavior Therapy (TF-CBT; Cohen, Mannarino, & Deblinger, 2006), a flexible, manualized psychotherapy for children and adolescents impacted by trauma that has substantial evidence supporting its effectiveness (Dorsey, McLaughlin, et al., 2017). TF-CBT includes three treatment phases: (1) Coping Skills; (2) Trauma Narrative and Processing; and (3) Treatment Consolidation and Closure (Cohen et al., 2006). The second phase includes the Trauma Narrative (TN), which is an explicit exposure to the client's traumatic experiences and involves clients thinking about, describing, and identifying feelings and thoughts related to traumatic experiences (Cohen et al., 2006). Initial findings from the phase two RCT suggested no clear main effect between the two supervision conditions on TN fidelity (Dorsey et al., in prep).

Participants

Supervisors and clinicians from community-based mental health offices across Washington State participated in STEPS. Supervisors (N=42) were invited to participate if they received TF-CBT-specific training as part of a statewide EBT initiative. There were no exclusion criteria for supervisors. Clinicians (N=124) were invited if they were receiving supervision from a participating supervisor and had received training in TF-CBT training (either through the statewide initiative or a free online training course; https://tfcbt.org). Clinicians were excluded if they did not serve children or adolescents or had immediate plans to leave their organization.

Measures

Demographics. Supervisors and clinicians provided background and demographic information on their age, sex, race and ethnicity, highest education completed, licensure status, years experience delivering therapy, and active caseload.

Self-Efficacy in Supervision. Supervisors reported on their competence in supervising TF-CBT with an adapted version of the Self-Efficacy in Supervision index (National Crime Victims Research and Treatment Center, MUSC, 2010). The measure includes 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: "Encourage use of TF-CBT by clinicians who are new or wary," and "Supervise in how to start and complete TNs."

TF-CBT Knowledge. Supervisors and clinicians completed a 13-item, multiple choice test to assess their knowledge of TF-CBT. The measure was adapted from the Denver Post Health Survey (M. Fitzgerald, PhD, unpublished measure, 2010) to include additional items that assess content similar to that assessed in the TF-CBT certification program. This measure demonstrated good item difficulty and discrimination as well as evidence of convergent validity in phase one of STEPS (Dorsey, Pullmann, et al., 2017).

EBT Attitudes. Supervisor and clinician attitudes towards EBTs were measured with a 5-item version of the Modified Practice Attitudes Scale (MPAS; Park, Ebesutani, Chung, & Stanick, 2016). The measure assesses clinician attitudes toward adopting new interventions in community mental health settings (e.g., "I am willing to use new and different types of treatments if they have evidence of being effective"). Responses were rated on a 5-point Likert scale ranging from 0 (Not at All) to 4 (To a Very Great Extent), with higher scores indicating more positive attitudes towards EBTs.

EBT Implementation Climate. Clinicians reported on their office's implementation climate with the Evidence-Based Organizational Checklist. The Evidence-Based Organizational Checklist is a 6-item questionnaire that included items such as, "Executive leadership explicitly and repeatedly express support for and promote use of EBTs." The content of the Evidence-Based Organizational Checklist is consistent with other implementation climate measures (e.g., Ehrhart, Aarons, & Farahnak, 2014) and other studies from our group have demonstrated unidimensionality and internal reliability (Dorsey, Berliner, Lyon, Pullmann, & Murray, 2016; Dorsey, Pullmann, et al., 2017). Questions were rated on a 4-point Likert scale ranging from 1 (Never) to 4 (Ongoing/Routine). Higher scores indicate a more supportive EBT implementation climate. Clinician scores of implementation climate were aggregated at the office level to reflect the "shared perception" of implementation climate. There was an average of 22.5 clinicians nested within each office (SD=18.1). Construct validity of the measure is supported by a significantly high supervisor-level Intraclass Correlation ICC(1) of .70 and an Intraclass Correlation ICC(2) of .98. The high ICC supports the validity of implementation climate as a higher, office-level construct (Jacobs, Weiner, & Bunger, 2014).

Supervisory Alliance. Clinicians reported their perception of the quality of their supervisory alliance with the Supervisory Working Alliance Inventory (**SWAI**)—Trainee Version (Efstation, Patton, & Kardish, 1990). We chose to examine clinician perceptions of the supervisory alliance, as opposed to supervisor perceptions, because we hypothesized clinicians' perceptions would be more likely to affect their clinical practice than supervision perceptions, of which clinicians may or may not be aware. The SWAI trainee version contains 19 items and two factors: (1) *client focus*, the supervisee's perception of the emphasis the supervisor places on promoting the clinician's understanding of the client (e.g., "my supervisor places high priority on

our understanding the client's perspective" and "My supervisor helps me work within a specific treatment plan with my clients"); and (2) *rapport*, which measures the supervisee's perception of support from the supervisor (e.g., "I feel comfortable working with my supervisor" and "I feel free to mention troublesome feelings"). Items are rated on a 7-point Likert-type scale ranging from 1 (almost never) to 7 (almost always). We examined both subscales separately.

TN Fidelity. Fidelity was conceptualized on two dimensions: adherence (i.e., was an element delivered) and extensiveness (i.e., to what extent was the element covered in session). Participating clinicians indicated the primary component for each of their taped sessions, which was verified by coders in randomly selected tapes. If clinicians indicated the TN was a primary component of at least one session, they were considered adherent to the TN. At least one TN tape was randomly selected and coded per clinician, which was used to verify the primary component and derive the TN extensiveness score. TN Extensiveness was assessed using an adapted version of the Therapeutic Process Observational Coding System for Child Psychotherapy-Strategies scale (TPOCS-S; McLeod & Weisz, 2010). The adapted coding measure was created by the study team and builds on the TF-CBT Checklist Scoring Sheet (Deblinger, Cohen, Mannarino, Runyon, & Hanson, 2005) and a previously adapted version of the TPOCS-S for use in CMH (Garland et al., 2010). Extensiveness was rated on a 6-point Likert-type scale ranging from 0 (not at all covered) to 6 (extensively covered).

Procedure

The Washington State Institutional Review Board approved all study procedures. Participating supervisors and clinicians in the STEPS RCT completed baseline surveys, which included the SWAI and all other self-reported constructs online via Qualtrics Version 2016. Following baseline, clinicians were randomized to one of two supervision conditions: symptom

and fidelity monitoring (SFM) or SFM plus behavioral rehearsals (SFM+BR). Individual supervision sessions were recorded for participating supervisor-clinician dyads. Research assistants listened to randomly selected recordings of supervision sessions to ensure fidelity to supervision condition (i.e., behavioral rehearsals were only present in the SFM+BR condition). Informal supervision encounters were not recorded. Clinicians also recorded their TF-CBT client psychotherapy sessions, which were then coded by research assistants for fidelity. All participating organizations received $3,000 at the completion of the study.

Supervision and therapy tape coding procedures and training are explained in detail elsewhere (see Dorsey et al., 2018, 2013). Three expert coders first coded 10 training files and came to consensus. Study coders independently coded the 10 training files to ensure interrater reliability across group members and with the expert trainers. Coder training was complete once individual ratings reached an established criterion: interrater reliability at the overall level, intraclass correlation coefficient (ICC) $_{(2,1)} \geq .80$ (as suggested by Cicchetti, 1994). Coder drift was monitored throughout the study with masked double-coding.

Data Analysis

Relations between alliance and TN adherence were analyzed with generalized estimating equations (GEE) with binomial link function because of the dichotomous nature of the data (i.e., clinicians were either adherent or not). Relations between alliance and TN extensiveness were analyzed with GEE with a gaussian link function because of the continuous nature of the data. For extensiveness analyses, we only examined cases in which clinicians self-reported delivering the trauma narrative (i.e., were adherent; excluding scores of 0; not at all covered). The pre-registered data analysis plan included mixed-effect modeling that accounted for data clustering beneath supervisors and therapists (Triplett, 2019). Three-level mixed-effect models did not

converge for any analyses. Supervisors and therapists were collapsed to one level because several supervisors had only one participating clinician, thereby limiting reliability and convergence of three-level models. Two-level mixed-effect models were also limited in their reliability and convergence. As a result, we diverged from our pre-registered analysis method and used GEE with exchangeable correlation matrices for greater statistical power. The specific conceptual models and covariates were retained from preregistration. Level 1 (clients) included only the outcomes of interest: TN adherence and extensiveness. At level 2 (clinicians and supervisors), we included supervisory alliance, clinician knowledge, attitudes toward EBTs, supervision condition, supervisor knowledge, supervisor self-efficacy, supervisor attitudes towards EBTs, and EBT implementation climate.

To assess whether supervisory alliance moderated the effect of supervision condition on fidelity, an interaction term between each alliance subscale and supervision condition was added to separate models for each outcome (i.e., TN adherence and extensiveness). The subscale scores were mean-centered to avoid multicollinearity with the interaction term. When indicated, we examined the interactions by plotting the model predicted values at each observed value of supervisory alliance for both conditions. Noting the challenges in evaluating interactions with logistic models (McCabe, Halvorson, King, Cao, & Kim, 2020), we also assessed whether supervisory alliance moderated the impact of supervision condition by computing the interaction effect for each individual observation. We then explored variability in our computed interaction effects across key covariates, such as EBT implementation climate. All data analysis was performed in R version 3.4.0. The R packages gee and modglm were used.

Results

Forty-two supervisors and 124 clinicians from 28 different community-based mental health offices across Washington State participated. Participant demographics are included in ***Table 1***. Supervisors were largely female (71.4%) and white (85.7%); the average age was 41.4 years (SD=9.8). Supervisors had an average of 11.6 years (SD=6.3) of providing psychotherapy and an average of 5.7 years (SD=5.1) acting as a clinical supervisor. Most clinicians were female (84.7%) and white (83.1%). The average age of clinicians was 34.9 years (SD=10.1). Clinicians had an average of 4.7 years (SD=5.7) providing psychotherapy. Clinicians provided TF-CBT to 250 children and were adherent to the TN in 135 (61.6%) cases. The average extensiveness of the TN was 4.3 (SD=1.1), meaning TNs were delivered with "considerable" extensiveness.

Supervisory Alliance and Trauma Narrative Fidelity

Client Focus. On average, clinicians reported SWAI Client Focus scores of 5.2 (SD=1.1), indicating supervisees perceived their supervisors to have a high level of client focus in supervision. Average client focus in the SFM only condition was 5.4 (SD=.9), and average client focus in the SFM+BR condition was 5.1 (SD=1.2). Client focus was significantly different between the SFM and SFM+BR conditions ($t(232.59) = 2.47$, $p = .01$), meaning clinicians in the SFM only condition perceived a higher degree of client focus from their supervisors at baseline. There was no evidence of an association between client focus and TN adherence (OR=1.22, 95% CI: .87, 1.71; p=.25) or extensiveness (ß= .08; p=.36). To summarize, client focus was higher in the SFM only condition at baseline, but client focus alone did not appear to be related to TN adherence or extensiveness.

Rapport. On average, clinicians reported SWAI Rapport subscale scores of 5.7 (SD=1.0), indicating supervisees perceived a high degree of rapport with their supervisors. Rapport was similar across conditions ($t(230.33) = .96$, $p = .3$). Average rapport in the SFM only condition

was 5.8 (SD=.85), and average rapport in the SFM+BR condition was 5.7 (SD=1.2). There was no evidence of an association between rapport and TN adherence (OR=1.07, 95% CI: .81, 1.41; *p*=.64) or extensiveness (ß= .057; *p*=.59). Overall, rapport alone did not appear to be related to TN adherence or extensiveness.

Supervisory Alliance as a Moderator of the Effect of Supervision Condition

Client Focus*.** The model interaction term supported an interaction between client focus and condition on TN adherence (OR=1.83, 95% CI: .99, 3.39; *p*=.05). The model-predicted probabilities of adherence at each observed value of client focus for both conditions are presented in ***Figure 1. However, computing and testing the significance of the interaction effect for each observation individually revealed that client focus significantly altered the effect of supervision condition on TN adherence in only 43.5% (N=50) of participating clinicians. The effect varied slightly between higher versus lower values of implementation climate (e.g., comparing observed interaction effects above and below median implementation climate). Odds ratio estimates ranged from 1.10 to 1.16 among observations below median implementation climate values and from 1.12 to 1.16 above median implementation climate. However, interaction estimates significantly varied with regard to whether or not they were statistically significant (Figure 2). Client focus significantly altered the effect of supervision condition on TN adherence in 59.6% of clinicians with implementation climate scores below median but only 26.4% of clinicians with implementation climate scores above median (Figure 2). There was no evidence of an interaction between supervisory alliance and condition on TN extensiveness (ß= .30; *p*=.11). To summarize, client focus may moderate the effect of BR on TN adherence but mostly in offices with lower implementation climate. It does not appear to moderate the effect on extensiveness.

Rapport. The GEE calculated interaction term did not support an interaction between rapport and supervision condition on TN adherence (OR=1.33, 95% CI: .71, 2.47; p=.37), and there was no evidence of an interaction between rapport and condition in any observations within our sample (all $p > .05$). There was evidence of a marginally significant interaction between rapport and condition on TN extensiveness (ß= .32; p=.09). The discrete differences between predicted extensiveness values at each observed value of rapport for both conditions are presented in ***Figure 3.*** Thus, rapport does not appear to moderate the effect of BR on TN adherence, but it may moderate the effect of BR on extensiveness.

Discussion

Understanding how the supervisory alliance might influence EBT fidelity and the effectiveness of supervision strategies may advance our understanding of how supervision can support EBT fidelity delivery and fidelity. Our findings suggest different aspects of alliance may interact with BR—a technique that may elicit some anxiety and require more vulnerability—to impact adherence and extensiveness of TN in different ways. These relationships appear to be limited to certain clinicians and may be associated with less positive EBT implementation climate. These findings provoke greater research on how the supervisory alliance might be considered to ensure supervision strategies are enhancing fidelity to EBTs.

First, our findings suggest that neither clinicians' baseline perceptions of their rapport with their supervisor nor their perceptions of their supervisor's client focus predict adherence to the TN or extensiveness with which clinicians deliver the TN. These findings diverge some from previous examinations of supervisory alliance and fidelity; however, this may be in part due to differences in methods or interventions. In examining the impact of supervisory alliance on fidelity to psychodynamic therapy, Patton and Kivlighan (1997) found that growth in overall

SWAI scores over time predicted greater adherence to general psychodynamic interviewing (e.g., encouraging client expression and using open-ended questions) but not time-limited dynamic psychotherapy skills (e.g., exploring pattens in clients' interpersonal relationships). We measured supervisory alliance at baseline and examined each SWAI subscale separately, hypothesizing that the dimensions of alliance would impact supervision or treatment elements differently. We found no relations between either subscale and fidelity but could not assess change in supervisory alliance throughout the study. More research may be warranted that assesses the relations between change in supervisory alliance over time and EBT fidelity. Further, where as Patton and Kivlighan (1997) found an effect of alliance on adherence to general psychodynamic interviewing, our analysis examined the impact of the components of supervisory alliance on one specific skill—the TN. Additional research may be warranted that examines relations between alliance and fidelity more generally. It may hold that supervisory alliance is a more valid predictor for general therapeutic skills and not specific elements, as suggested by Patton and Kivlighan (1997).

Our findings also suggest that client focus might moderate the relationship between BR and adherence to the TN; however, this interaction may only be present with select clinicians. Less than half of participating clinicians (43.5%) saw an interaction between client focus and supervision condition on adherence to the TN. As such, we interpret our results with caution. In the SFM only condition, there was a 75.2% probability of adherence to the TN in cases with the lowest client focus scores. Even when clinicians perceived that their supervisor did not "encourage [them] to take time to understand what the client is saying and doing" or "help them work within a specific treatment plan with [their] clients," they mostly still delivered the TN. In contrast, the probability of TN adherence was only 27.3% for clinicians with the lowest client

focus in the SFM+BR condition. Our data suggests clinicians may actually have worse adherence when asked to complete a BR with less client focus in supervision. One possible explanation is that when clinicians with lower client-focused alliance are asked to engage in a BR, they may not trust their supervisors' feedback or advice after completing the BR. This may result is clinicians feeling additional confusion or hesitancy to initiate the TN. To contrast with SFM alone, solely reviewing client symptoms and fidelity may not result in additional confusion and/or hesitancy like receiving supervisor feedback on a BR.

These cases in which client focus moderated the effectiveness of BR also appeared to be characterized by clinicians in offices with lower implementation climate. Client focus significantly moderated the effect of supervision condition on TN adherence in 59.6% of clinicians with implementation climate scores below median but only 26.4% of clinicians with implementation climate scores above median. There is some evidence that organizational factors may be more strongly related to EBT use than individual factors (Beidas et al., 2015). Thus, it may be that client focused supervision reinforces the importance of EBT delivery when organizations have less positive implementation climate. Alternatively, the lower implementation climate scores might be in part due to general associations between client focus and implementation climate. Although the relations between supervisory alliance and implementation climate have not yet been studied, client focus and implementation climate were moderately correlated in our data ($r(236)=.44$, $p<.001$). Theory suggests that supervisors play an influential role in shaping clinicians' perceptions of their office's implementation climate (Aarons, Ehrhart, Farahnak, & Sklar, 2014). Our research group has also found that implementation climate predicts content specific to EBTs in supervision (Dorsey, Pullmann, et al., 2017; Lucid et al., 2018). We believe that client focused supervision may be one way in which supervisors

influence clinicians' perceptions of implementation climate. For example, when supervisors "help [clinicians] work within a specific treatment plan with [their] clients" clinicians may feel supported in their efforts to implement EBTs. In the absence of this messaging, clinicians may not feel supported or encouraged to conduct more challenging therapeutic elements, such as the TN.

We also provide some evidence of clinician-supervisor rapport moderating the relationship between BR and TN extensiveness. As hypothesized, clinicians with lower rapport in the SFM+BR condition had lower TN extensiveness than their peers with comparable lower rapport in the SFM only condition. Given clinician discomfort and intentions to implement exposure elements (Wolk et al., 2019), trust and comfort with supervisors may be essential to overcome anxieties and ensure clinicians deliver the TN with greater extensiveness—a key component of TF-CBT fidelity. Psychological safety, the perception that the supervisory relationship is safe for interpersonal risk taking (Edmondson, 1999), has previously been associated with learning behavior. It may be related to supervision and EBT fidelity as clinicians require some sense of psychological safety in supervision to fully benefit from the learning that might accompany BRs. When possible, steps should be taken to ensure clinicians trust their supervisors and feel comfortable expressing anxieties in supervision, especially around potentially anxiety-producing topics, such as conducting exposure with children. Supervisors should set norms of sharing reservations openly and providing nonjudgmental, constructive feedback for clinicians.

Limitations

These findings should also be considered in light of several limitations. First, supervisors and clinicians were not randomly sampled from the population and had self-selected into a study

on clinical supervision. Further, Washington State has a long-standing EBT training initiative (Dorsey et al., 2016); therefore, participating clinicians may not be representative of clinicians in other contexts, including those with less familiarity with EBTs. Additionally, the study assessed TN adherence and supervisory alliance with self-report questionnaires. While some TN tapes were randomly coded to verify the clinicians' self-report, those tapes that were not sampled and verified may be subject to self-report biases and limitations. Supervisory alliance was also assessed with a self-report measure at baseline. Therefore, data may be subject to self-report biases, and we are unable to make claims about how alliance might have changed during participation in the study and the impact that might have had on fidelity. Further, we examine only the clinician's perception of supervisory alliance. Other analyses from this data has found that discrepancies in supervisory alliance ratings are common (Locke et al., 2017). Examining supervisor report of congruence in alliance ratings may yield alternative results. We are also limited in our ability to make claims about different TF-CBT elements or EBTs other than TF-CBT. We chose to examine one aspect of TF-CBT treatment, the TN, and therefore cannot make broader claims about how supervisory alliance might impact BR and fidelity with other TF-CBT elements or different EBTs.

Conclusions

Taken collectively, the findings from this study provide some insight into the impacts of supervisory alliance and supervision techniques on fidelity to the TN element of TF-CBT. Broadly, poor supervisory alliance may interact with BRs and result in poorer treatment fidelity; however, this association may only hold for some clinicians. Our results suggest need for further research on how supervisory alliance might be considered to ensure supervision strategies are encouraging clinicians to adhere to potentially challenging treatment elements and enhancing

fidelity. Future research might also consider strategies to improve supervisory alliance or ways to match supervision strategies to clinician-supervisor dyads to improve fidelity, a potential pathway to improving clinical outcomes (Schoenwald, Carter, et al., 2008).

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Table 1. Participant Demographics

	Supervisors (n = 42)		Clinicians (n = 124)	
	Mean	***SD***	***Mean***	***SD***
Age	41	9.8	34.9	10.1
Experience providing psychotherapy (years)	11.6	6.3	4.7	5.5
Experience supervising (years)	5.7	5.1	—	—
	#	***%***	***#***	***%***
Female	30	71.4%	105	84.7%
Race and Ethnicity				
Asian	2	4.8%	2	1.6%
Black or African American	—	—	1	0.8%
Native Hawaiian or Other Pacific Islander	1	2.4%	1	0.8%
White	36	85.7%	103	83.1%
Latino	1	2.4%	7	5.6%
Other	—	—	1	0.8%
Multiracial	1	2.4%	8	6.5%
Education				
Bachelor's degree	—	—	5	4.0%
Master's degree	38	90.5%	114	91.9%
Doctoral Degree	2	4.8%	3	2.4%
Other	1	2.4%	1	0.8%

Figure 1.

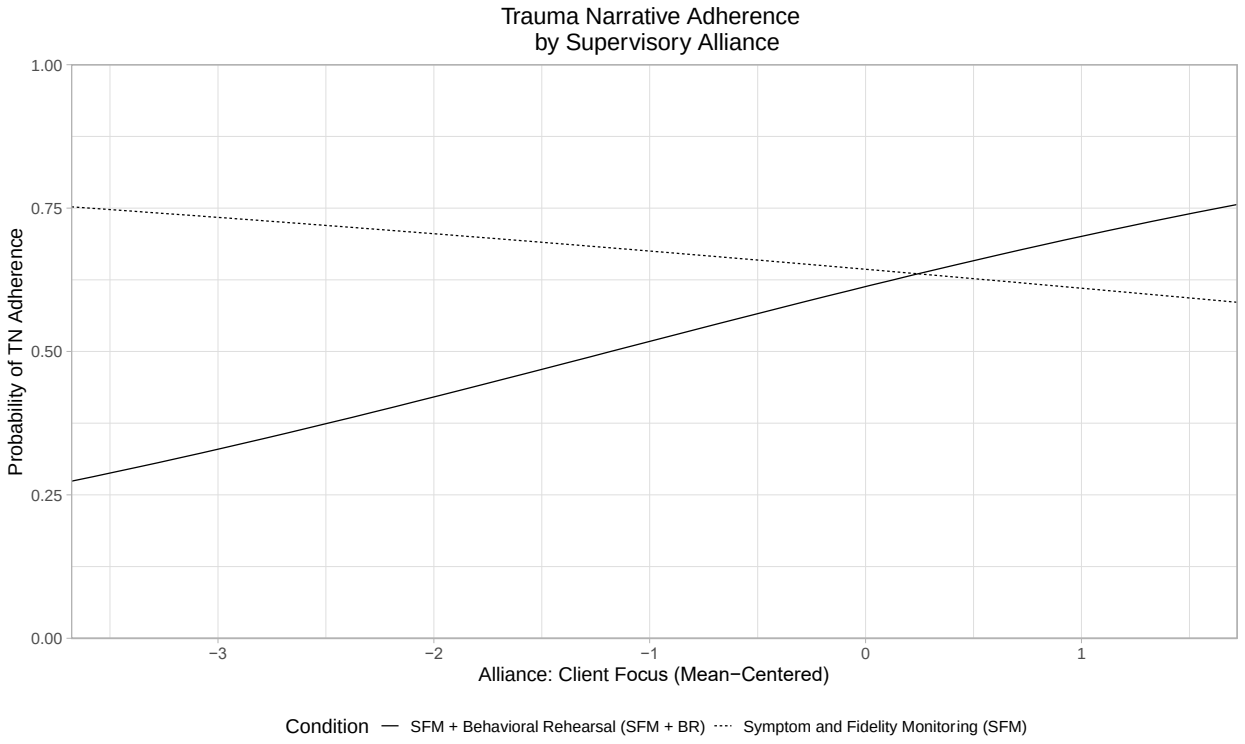


Figure 2.

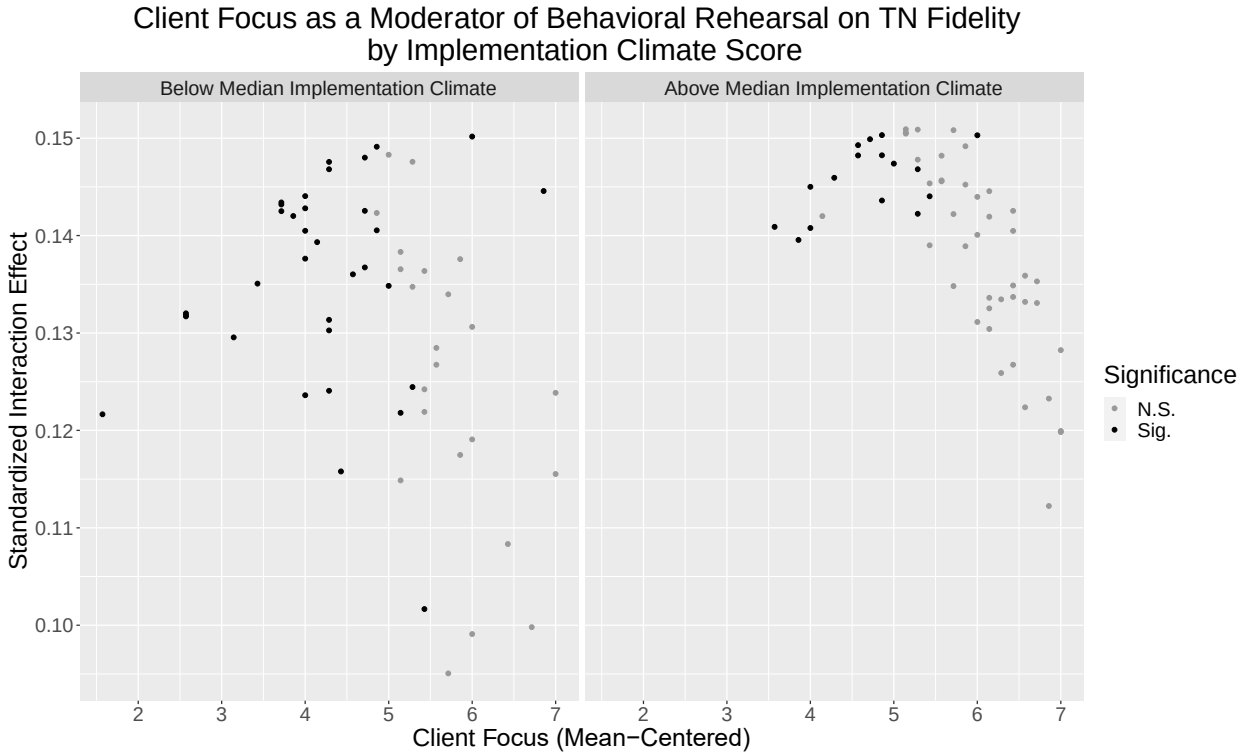
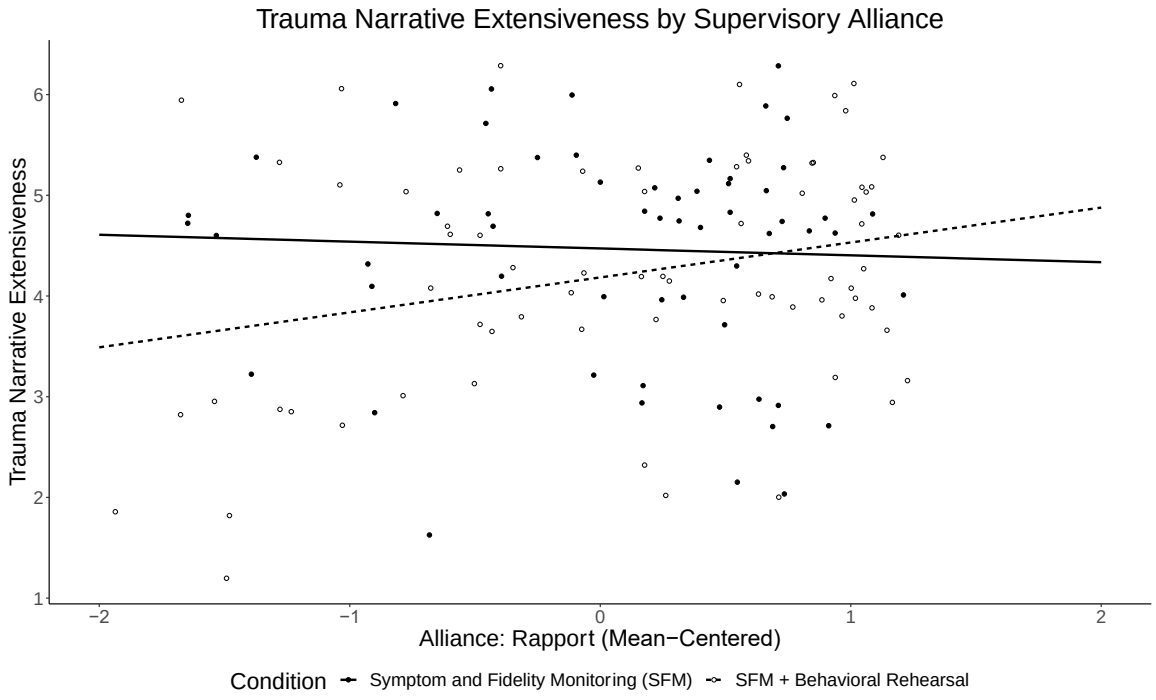


Figure 3.


Trauma Narrative Extensiveness by Supervisory Alliance
Trauma Narrative Extensiveness
6
5
4
3
2
1
−2
−1
0
1
2
Alliance: Rapport (Mean−Centered)
Condition
Symptom and Fidelity Monitoring (SFM)
SFM + Behavioral Rehearsal