



Agreement and Discrepancy Between Supervisor and Clinician Alliance: Associations with Clinicians' Perceptions of Psychological Climate and Emotional Exhaustion

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Abstract

Despite increasing interest in supervision as a leverage point for bolstering public mental health services, the potential influence of supervisory alliance on organizations and direct service providers remains understudied, particularly in the context of supporting evidence-based treatment (EBT) use. This study examined agreement and discrepancy between supervisor and clinician ratings of alliance associated with clinicians' perceptions of psychological climate and emotional exhaustion. Results indicated that discrepancies in alliance ratings were common and associated with clinicians' perceptions of psychological climate. These findings have important implications for collaboration among supervisors and clinicians within a community mental health organizational context and the provision of EBTs.

Keywords Supervisor alliance · Clinician alliance · Psychological climate · Emotional exhaustion

Introduction

The working alliance between clinicians and their clients, commonly defined as the bond between client and provider as well as their agreement about therapeutic tasks and goals (Bordin 1979), has been the subject of extensive theoretical and empirical attention. An emerging literature has started to examine the impact of the alliance between clinicians and their supervisors, hereafter referred to as supervisory alliance. The quality of supervisory alliance has been associated with important worker-related outcomes, such as turnover, job satisfaction, work-related stress, and emotional exhaustion (e.g., Sterner 2009; see; Watkins 2014 for a review). Due to the potential for these outcomes to impede effective

treatment delivery (Aarons and Sawitzky 2006a; Glisson 2002; Glisson and Hemmelgarn 1998), the identification of associated factors is crucial for improving implementation efforts. Supervisory alliance consists of both the supervisory relationship and the supervisory working alliance (Efstation et al. 1990; Greenson 1967; Pepinsky and Patton 1971). The supervisory relationship, defined by Holloway and Wampold (1984), involves feelings and reactions toward a supervisor/supervisee, whereas the supervisory working alliance consists of two factors: (1) the rapport between supervisors and supervisees; and (2) agreement on priorities of supervision (e.g., Fleenor et al. 1996; Mena and Bailey 2007).

Among supervisees, positive supervisory alliance has been related to experiencing less stress at work (Gnilka et al. 2012; Sterner 2009) and greater job satisfaction (Ladany et al. 1999; Mena and Bailey 2007; Sterner 2009). The extent to which supervisory alliance is a relevant and important construct in supporting the implementation of evidence-based psychosocial interventions is largely unstudied. Research has focused more on clinical supervision, including techniques used by expert consultants (e.g., Bearman et al. 2013, 2016) and content of supervision (Accurso et al. 2011; Dorsey et al. 2017). In public mental health, supervisors often have both clinical, administrative and managerial responsibilities, with about 20–30% of supervision focused

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on administrative and other non-clinical functions (Accurso et al. 2011; Dorsey et al. 2017). While ongoing supervision appears to be necessary in the successful implementation of evidence-based treatments (EBTs; Beidas and Kendall 2010; Herschell et al. 2010; Schoenwald et al. 2013), the supervisory working relationship has received little attention. Better understanding of supervisory alliance, particularly in the context of EBT initiatives, may yield important clues for addressing some challenging implementation barriers, most notably, organizational factors associated with the extent to which clinicians deliver EBTs.

The organizational literature discusses the importance of climate, individuals' perceptions of their work environment (Baltes et al. 2009). Climate may be measured using both individual (e.g., "I", "My") and organizational referents (e.g., "We", "Employees here"; Baltes et al. 2009). Psychological climate refers to individual employees' perceptions of their work environment (Baltes et al. 2009), whereas organizational climate refers to global impressions of the organization and personal impact of the work environment (James et al. 2008). Organizational climate has been found to mediate the relationship between transformational leadership and working alliance (Green et al. 2014) and may be associated with EBT use and child outcomes (Glisson et al. 2008; Glisson and Green 2011; Glisson and James 2002). Because climate may play a pivotal role in promoting EBT use, it is important to understand how supervisory leadership may be related to this construct. However, climate often is understudied relative to other constructs (e.g., treatment, provider, and client characteristics; Aarons and Sawitzky (2006a, b), and its relationship with supervisory alliance is unclear.

The literature is nascent regarding the extent to which supervisory alliance interacts with psychological climate to support or impede implementation success (Kavanagh et al. 2003). One important area that warrants more attention is the impact of discrepancies in perception of supervisory alliance across supervisor and supervisee on implementation success. In the implementation science literature, discrepancies between supervisor and supervisee reports of supervisor leadership are common (Aarons et al. 2017; Beidas et al. 2016) and are related to organizational culture (Aarons et al. 2017) and climate (Aarons et al. 2016). Disagreement between supervisor and supervisee ratings of alliance often may indicate a lack of awareness that may be associated with misunderstandings, poor communication, and inferior supervision and clinical care; therefore, these differences may be important for understanding implementation settings and outcomes (Mena and Bailey 2007).

An additional factor that is understudied in regards to its relationship to supervisory alliance is emotional exhaustion. Maslach and Jackson (1981) define emotional exhaustion as a component of burnout wherein an employee feels

"overextended and exhausted" (p. 99) by their work and feels that their "emotional resources are depleted" (p. 101). Emotional exhaustion is a primary concern in children's mental health services, as it impacts quality of clinical services (Knudsen et al. 2006; Morse et al. 2012), and leads to high rates of clinician turnover, which is expensive for organizations and disrupts organizational climate (Green et al. 2013). Research on the relationship between supervisory quality and emotional exhaustion is mixed. Some studies have found that supervisory variables, including supportive communication and high-quality supervisory relationships, buffer the damaging effect of stress on emotional exhaustion (Bakker et al. 2005; Kim and Lee 2009). Conversely, other studies find no relationship between clinician- or supervisor-rated alliance in relation to emotional exhaustion (Mena and Bailey 2007). What is clear is that the relationship between supervision and emotional exhaustion is nuanced, but the role of possible interactions between supervisor and clinician ratings of the supervisory alliance associated with emotional exhaustion has rarely been examined in mental health services research (Aarons et al. 2009).

Previous conceptualizations of self-other agreement (e.g., Atwater and Yammarino 1997; Fleenor et al. 1996) have suggested that: (a) supervisors who over-estimate their performance compared to their trainees have low managerial effectiveness (e.g. setting a positive developmental climate, managing job challenges, leading employees); (b) supervisors who are in agreement with their trainees that their performance is high have the highest effectiveness; (c) supervisors who are in agreement with their trainees that their performance is low have the lowest effectiveness; and (d) supervisors who are "under estimators" may have high or low effectiveness depending on the nature of the outcome measure. The potential influence of discrepant perceptions of supervisory alliance on organizational factors that may promote or impede successful implementation has not been investigated. In response to Aarons et al. (2016, 2017) call for further research exploring how discrepancies between leaders and followers develop and influence workplace outcomes, this study focused on supervisory alliance as one domain where leader-follower discrepancies may exist. The purpose of this study was to examine: (1) the agreement and discrepancy in supervisor- and clinician-rated alliance; and (2) whether agreement and discrepancy in ratings of alliance is associated with clinicians' perceptions of organizational climate, hereafter referred to as psychological climate, and emotional exhaustion. We hypothesized that: (1) there will be considerable variability in supervisory relationship and alliance in community mental health organizations; (2) when in agreement, supervisor- and clinician-rated alliance will be positively related to three subscales of psychological climate (communication, cohesion, and autonomy) and negatively related to one subscale of psychological climate (stress) and

emotional exhaustion; (3) there will be an interaction effect such that the stronger the degree of agreement between supervisor and clinician ratings of alliance, the more variable scores will be on psychological climate/emotional exhaustion; (4) when in disagreement, clinicians who rated alliance higher than their supervisors will rate psychological climate/emotional exhaustion more favorably than clinicians who rated alliance lower than their supervisors (i.e., humble leader phenomenon; Aarons et al. 2016); and (5) there will be a curvilinear, interaction effect between the degree of disagreement and psychological climate/emotional exhaustion (e.g., where psychological climate/emotional exhaustion may decrease more sharply as the degree of discrepancy in supervisory relationship and alliance increases). Following Aarons et al. (2016) study examining discrepancy in leadership ratings, we used a novel methodology, polynomial regression with response surface analysis (Shanock et al. 2010), a statistical approach that allows examination of the extent to which supervisor/clinician rating combinations on two separate predictor variables (*supervisory relationship* and *supervisory working alliance*) relate to an outcome variable (*psychological climate; emotional exhaustion*). Polynomial regression with response surface analysis is particularly useful when the discrepancy between the two predictor variables is a critical factor (Shanock et al. 2010).

Method

Participants

Forty-seven supervisors and 187 clinicians from 25 community mental health organizations located in rural and urban areas in Washington State participated as part of a study examining supervision of clinicians using Trauma-focused Cognitive Behavioral Therapy (TF-CBT; Cohen et al. 2006) in the context of a statewide EBT initiative (see Dorsey et al. 2013 for the study protocol). Supervisors were included if they received TF-CBT-specific training as part of the EBT initiative and were currently supervising two or more clinicians who were eligible to participate. There were no exclusionary criteria for supervisors. The average age of supervisors was 41.55 ($SD=9.67$) years, and the majority were female (76.6%) and White (83%). Supervisors reported that individual supervision served both clinical and non-clinical functions (e.g., administrative, professional development, supervisee personal support), with about 70% of the individual supervision dedicated to clinical functions (Dorsey et al. 2013). Clinicians were included if they were receiving supervision from one of the participating supervisors and were trained in TF-CBT (either through the EBT initiative or through completion of the freely available, 10-h, online TF-CBT training program; <https://tfcbt.musc.edu>).

Clinicians were excluded if they had an adult-only caseload or immediate plans to leave the organization. The average age of clinicians was 37.24 ($SD=10.75$) years, and the majority were female (82.4%) and white (74.3%). Educational attainment and additional demographic information for supervisors and clinicians are reported in Table 1. The study included two phases: (1) a descriptive study of supervision provided by supervisors trained in TF-CBT as part of the initiative (with no study intervention); and (2) a randomized controlled trial (RCT) of “gold standard” supervision strategies selected from efficacy and effectiveness trials. The current study uses data from supervisors and clinicians at the beginning of the Phase II RCT (i.e., baseline), when both supervisors and clinicians reported on alliance, prior to the start of the RCT. Clinicians reported on alliance with their supervisor; supervisors reported on alliance with each of their individual supervisees involved in the study.

Measures

Supervisory Relationship

The supervisory relationship was assessed using the Supervisor/Trainee Personal Reaction Scale-Revised (SPRS-R/TPRS-R; Holloway and Wampold 1984). The 12-item SPRS-R and TPRS-R measure critical factors in the supervisory interpersonal relationship including feelings and reactions toward a supervisee/supervisor, respectively. The measure includes items that refer to the self (e.g., “Sometimes after the supervisor said something I just couldn’t think of any response”; “I felt pretty ineffective with this supervisee”), other (e.g., “I disagree with this supervisee about some basic matters”) and comfort (e.g., “I got irritated at some of my supervisor’s remarks”). The items are rated on a 5-point Likert-type scale ranging from 1 (*not characteristic of my feelings*) to 5 (*highly characteristic of my feelings*). Both the SPRS-R and the TPRS-R have acceptable estimates of reliability with alpha coefficients ranging from .72 to .83 for the supervisor scales and from .71 to .89 for the trainee scales (Holloway and Wampold 1984). Consistent with the initial validation studies (Holloway 1979; Holloway and Wampold 1983), we used the total score for each scale (supervisor; trainee). All three of the SPRS subscales were correlated above .65, and the TPRS subscales were correlated at .30, .48, and .69.

Supervisory Working Alliance

Supervisory working alliance was measured using the Supervisory Working Alliance Inventory (SWAI)—Trainee and Supervisor Versions (Efstation et al. 1990). The SWAI measures the “working” aspects of the supervisory relationship—actions on the part of the supervisor and clinician to

Table 1 Demographics of supervisors and clinicians

Variable	Supervisor (<i>n</i> = 47)		Clinician (<i>n</i> = 187)		Total (<i>N</i> = 234)	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Race/ethnicity						
Asian	2	4.3	2	1.1	4	1.7
Black/African American	0	0.0	5	2.7	5	2.1
Native Hawaiian/Pacific Islander	1	2.1	1	0.5	2	0.9
White/Caucasian	39	83.0	139	74.3	178	76.1
Multiracial	5	10.6	30	16.0	35	14.9
Other	0	0.0	2	1.1	2	0.9
Hispanic/Latino	0	0.0	6	3.2	6	2.5
Missing	0	0.0	2	1.1	2	0.9
Female	36	76.6	154	82.4	190	81.2
Academic degree						
Bachelor's-level	0	0.0	6	3.2	6	2.5
Master's-level	45	95.8	173	92.5	218	93.2
PhD	1	2.1	4	2.2	5	2.1
PsyD	1	2.1	1	0.5	2	0.9
Other	0	0.0	1	0.5	1	0.4
Missing	0	0.0	2	1.1	2	0.9
Area of clinical training/degree						
Social work	16	34.1	44	23.5	60	25.6
Psychology	5	10.6	11	5.9	16	6.8
Marriage family therapy	7	14.9	26	13.9	33	14.1
Counseling psychology	14	29.8	73	39.0	87	37.2
School/educational psychology	1	2.1	1	0.5	2	0.9
Other	4	8.5	29	15.6	33	14.1
Missing	0	0.0	3	1.6	3	1.3
Licensed	44	93.6	78	41.7	122	52.1
Orientation						
Art therapy	1	2.1	3	1.6	4	1.7
Cognitive-behavioral therapy	34	72.3	118	63.1	152	65.0
Family systems therapy	6	12.8	19	10.2	25	10.7
Humanistic	2	4.3	11	5.9	13	5.6
Play therapy	0	0.0	7	3.7	7	3.0
Psychodynamic theory	1	2.1	14	7.5	15	6.4
Solution-focused therapy	2	4.3	7	3.7	9	3.8
Other	1	2.1	5	2.7	6	2.5
Missing	0	0.0	3	1.6	3	1.3
Uses EBT	35	74.5	146	78.1	181	77.3
Primary agency role						
Administrator	6	12.8	1	0.5	7	3.0
Clinical supervisor	37	78.7	5	2.7	42	17.9
Clinician	4	8.5	179	95.7	183	78.2
Missing	0	0.0	2	1.1	2	0.9
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	41.6	9.7	37.2	10.8	38.1	10.7
Years working in field	14.2	7.0	7.2	6.3	8.6	7.0
Years providing psychotherapy	11.7	5.9	5.3	5.5	6.6	6.2
Years employed by current organization	8.0	6.5	3.5	3.4	4.4	4.5
Years as clinical supervisor	5.3	4.8	–	–	5.3	4.8

facilitate the trainee’s learning—as perceived by the trainee and the supervisor. The SWAI trainee version contains 19 items that yield two factors: (1) rapport, the supervisee’s perception of support from the supervisor; and (2) client focus, the supervisee’s perception of the emphasis the supervisor placed on promoting the trainee’s understanding of the client. The SWAI supervisor version contains 23 items that yield three factors: (1) rapport, the supervisor’s effort to build rapport with his or her trainee by supporting and encouraging them; (2) client focus, the emphasis the supervisors placed on promoting the supervisee’s understanding of the client; and (3) identification, the supervisor’s perception of the trainee’s identification with his or her supervisor. Items are rated on a 7-point Likert-type scale ranging from 1 (*almost never*) to 7 (*almost always*). The SWAI scale scores have acceptable estimates of reliability with alpha coefficients ranging from .71 to .77 for the supervisor scales and from .77 to .90 for the trainee scales (Efstation et al. 1990). We found high subscale correlations indicating the presence of an underlying construct (the two clinician subscales were correlated at .93, and the three supervisor subscales were all correlated at or above .70).

Psychological Climate

Psychological climate was assessed using the Texas Christian University Organizational Readiness for Change (TCU-ORC; Lehman et al. 2002). Four dependent variables were obtained from clinician ratings on the Organizational Climate domain of the TCU-ORC. A total of 73 Likert-type items (scored on a 5-point agree-disagree response scale) were administered to clinicians. The TCU-ORC Organizational Climate domain includes six subscales of which we used four: stress, autonomy, cohesion, and communication. *Stress* measures perceived strain, stress, and role overload (e.g., “You are under too many pressures to do your job effectively”). *Autonomy* addresses the latitude counselors are allowed in working with their clients (e.g., “The leadership here fully trusts your professional judgment”). *Cohesion* focuses on work group trust and cooperation (e.g., “The staff here always works together as a team”). *Communication* focuses on management receptivity to suggestions from staff and the adequacy of information networks to keep everyone informed (e.g., “The formal and informal communication channels here work very well”). These subscales were included in the analyses. Lehman and colleagues (2002) report reliability alpha coefficients for the clinician sample as .79 (Stress), .57 (Autonomy), .80 (Communication), and .84 (Cohesion). While organizational measures collected at the individual level are usually combined to produce an average organizational-level score (Biemann et al. 2012), our interest was in the association between clinician-supervisor relationship agreement and direction, and clinicians’

perceptions of the organizational climate. This use of individual scores for organizational climate is appropriate when the individual perception is the referent of interest (Marsh et al. 2012).

Emotional Exhaustion

Emotional exhaustion was measured using the Maslach Burnout Inventory—Emotional Exhaustion Subscale (MBI-EE; Maslach et al. 1996). The MBI-EE subscale comprises nine items (e.g. “I feel drained from my work”; “I feel frustrated by my job”). Scores were derived using item-level means on a 7-point Likert-type scale ranging from 0 (*feeling has never been experienced*) to 6 (*feeling is experienced daily*). The MBI-EE subscale has demonstrated good internal consistency, with a Cronbach’s alpha of .90 (Maslach et al. 1996).

Procedure

Data for this study are cross-sectional and come from a subset of measures collected at baseline assessment before a RCT of supervision strategies, prior to any intervention with supervisors and clinicians. Our university’s Institutional Review Board approved all study procedures. For all interested organizations, potential supervisors and clinicians received a verbal and written description of the study and informed consent was obtained prior to the baseline survey. All consented supervisors and clinicians completed survey instruments via the Qualtrics Version 2016 online platform (Qualtrics, <http://www.qualtrics.com>). Supervisors and clinicians enrolled in Phase II received \$40 and \$30 gift cards respectively (supervisor burden was greater; i.e., supervisors had to report on multiple supervisees) for completing the baseline survey.

Data Analysis

All data analysis was performed in SPSS Version 19. Means, standard deviations, and paired-samples correlations were calculated on supervisor and clinician ratings of alliance (see Table 2). Polynomial regression analyses were conducted (Shanock et al. 2010; Aarons et al. 2016). Surface values were calculated to determine whether agreement or discrepancy in supervisor- and clinician-rated alliance (i.e., *supervisory relationship* and *working alliance*) was associated with clinician-rated psychological climate and emotional exhaustion. We first inspected the data to ensure adequate frequency of discrepancies between supervisor and clinician ratings for *supervisory relationship* and *working alliance* (Shanock et al. 2010), as this was a prerequisite for any further analyses examining discrepancy and agreement. Standardized scores were calculated for each predictor variable

Table 2 Supervisor and clinician ratings of alliance, psychological climate, and emotional exhaustion

Measure	Supervisor		Clinician		Paired samples correlations
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Supervisor/trainee personal reaction scale (range 1–5)	4.21	0.59	4.17	0.59	$r(126) = .39^*$
Supervisor working alliance inventory (range 1–7)	5.47	0.91	5.42	1.10	$r(127) = .11$
TCU-ORC	–	–	3.57	0.35	–
Communication	–	–	3.27	0.91	–
Cohesion	–	–	4.01	0.67	–
Stress	–	–	3.36	0.92	–
Autonomy	–	–	3.61	0.59	–
MBI—emotional exhaustion	–	–	2.39	1.20	–

* $p \leq .01$

(Fleenor et al. 1996). As suggested in Shanock et al. (2010) and used in Aarons et al. (2017), participant pairs with a standardized score for supervisor-rated alliance that was half a standard deviation above or below the standardized score on clinician-rated alliance were considered discrepant.

We then centered the predictors (supervisor and clinician ratings of *supervisory relationship* and *working alliance*) around the midpoint for each scale (3, 4, and 2, respectively; Atwater et al. 1998; Shanock et al. 2010). Subsequently, we created three new variables for each alliance measure: (a) the square of the centered variable for the supervisor-rated alliance; (b) the cross-product of the centered supervisor- and clinician-rated alliance measure; and (c) the square of the centered clinician-rated alliance. To examine model significance, the proportion of the variance explained in outcome (R^2) was evaluated. To control for familywise error rate among the ten omnibus R^2 tests, we used the Benjamini-Hochberg procedure and set our acceptable false discovery rate at a very conservative level of 5%. If R^2 was significantly different from zero, the model coefficients (which are not interpretable in isolation when conducting polynomial regression models), were transformed into four surface test values that are interpretable: a_1 to a_4 (Shanock et al. 2010), and tested using t-tests; response surface analysis does not typically adjust alpha critical for familywise error within these four surface test values. See Tables 4 and 5.

To aid interpretation of these three-dimensional relations, for each significant polynomial regression model, we plotted the three-dimensional response surface and examined slope and curvature (Shanock et al. 2014). The surface test significance values, graphs, and surface areas allowed interpretation of whether and how the: (1) linear (a_1) and nonlinear (a_2) relation between the agreement in alliance ratings was associated with psychological climate and emotional exhaustion; (2) direction of the discrepancy (a_3) between

alliance ratings was associated with psychological climate and emotional exhaustion; and (3) degree of discrepancy (a_4) in alliance ratings was associated with psychological climate and emotional exhaustion. To help interpret these scores, significant and positive values could mean each of the following: (a_1) as the clinician and supervisor scores that are in agreement increase, the predicted variable score increases linearly; (a_2) as agreed-upon scores increase, the predicted variable score increases curvilinearly or at a faster rate (an interaction effect); (a_3) supervisor scores will be more predictive: high scores by supervisors and low scores by clinicians would be associated with higher scores on the outcome variable than if supervisors had low scores and clinicians had high scores (a negative value would mean high clinician scores and low supervisor scores would be associated with higher scores on the outcome variable than if clinician/supervisor scores were reversed); (a_4) the predicted variable increases more sharply as the degree of discrepancy increases (an interaction effect).

Results

Means for all variables and paired-samples correlations between supervisor- and clinician-rated supervisory relationship ($r = .39$) and working alliance ($r = .11$) are shown in Table 2. There were no significant differences between supervisors' and clinicians' mean ratings of the supervisory relationship and working alliance. Correlations between scores on the S/TPRS and SWAI were high for within-supervisor ($r_{(140)} = .65, p < .001$) and within-clinician ($r_{(184)} = .79, p < .001$). Table 3 depicts the discrepancy distributions for the supervisory relationship and working alliance. Overall, approximately one-third of the supervisors and clinicians were in agreement, in one-third of the cases the clinician rated the relationship more highly, and in one-third the supervisor rated the relationship more highly. These variables had sufficient distribution to allow further analyses. The polynomial regression models are presented in Tables 4 and 5; omnibus F tests for nine of the ten models were statistically significant after correcting for familywise error. The model predicting the TCU-ORC Autonomy subscale scores using the SWAI was not significant ($R^2 = .085, p = .055$). Models using SWAI scores to predict the TCU-ORC Stress scores ($R^2 = .127, p = .007$) and Emotional Exhaustion scores ($R^2 = .092, p = .038$) were statistically significant, as was a model using SPRS/TPRS scores to predict Emotional Exhaustion ($R^2 = .120, p = .010$); however, none of the response surface test values were significant within these models. Therefore, these four models are not described further. Below, we provide detailed analyses of coefficient significance statistics for the remaining six models.

Table 3 Frequencies of supervision alliance scores over, under, and in-agreement with clinician alliance scores

Agreement groups	Supervisor/trainee personal reaction scale total (%)	Supervisor working alliance inventory (%)
Supervisor higher than Clinician	31.0	31.5
In agreement	37.3	32.3
Clinician higher than Supervisor	31.7	36.2

For SPRS Total, $N = 126$. For SWAI, $N = 127$

Psychological Climate—Communication

Figure 1 shows a significant positive linear ($b = 1.26$, $SE = 0.39$, $p = .002$) relationship between the agreement in supervisor- and clinician-rated supervisory relationship (as measured by the SPRS and TPRS) and the TCU-ORC communication subscale; as agreed-upon relationship scores increased, the communication subscale increased. The curvature of the agreement ($b = -0.05$, $SE = 0.20$, $p = .802$) was not significant. Both the direction ($b = -1.74$, $SE = 0.46$, $p < .001$) and degree ($b = 1.35$, $SE = 0.54$, $p = .013$) of the discrepancy in the supervisory relationship were significantly associated with the communication subscale. The significant negative direction coefficient indicated that clinicians whose supervisors had lower ratings but who rated their supervisor more highly on supervisory relationship also rated the TCU-ORC communication subscale more highly than clinicians with low ratings who had supervisors with high ratings. The significant positive degree coefficient, based on visual inspection of Fig. 1, is likely due to a ceiling effect of the communication subscale for clinicians with the highest scores, which flattened the predicted values, as well as a positive predictive effect on climate in supervisors with the highest scores that was regardless of clinician score.

Figure 1 also shows a significant positive linear ($b = 0.76$, $SE = 0.29$, $p = .01$) relationship between the agreement in supervisor- and clinician-rated working alliance (as measured by the SWAI) and the TCU-ORC communication subscale; as agreed-upon working alliance increased, the communication subscale increased. The curvature of the agreement ($b = -0.08$, $SE = 0.12$, $p = .516$) was not significant. The direction ($b = -1.74$, $SE = 0.46$, $p < .001$) and degree ($b = 1.35$, $SE = 0.54$, $p = .013$) of the discrepancy in the working alliance were significantly associated with the clinician-rated communication subscale. Clinicians whose supervisors had lower ratings but who rated their supervisor more highly on working alliance also rated the communication subscale more highly than clinicians with lower alliance ratings who had supervisors with higher alliance ratings. The significant positive degree coefficient, based on visual inspection of Fig. 1, was likely due to floor effects, which flattened the tail of the predicted values.

Psychological Climate—Cohesion

The graph and surface area showed a significant positive linear ($b = 0.68$, $SE = 0.29$, $p = .022$) relationship between agreement in supervisor- and clinician-rated supervisory relationship with a cohesive psychological climate; as agreed-upon supervisory relationship scores increased, the TCU-ORC cohesion subscale increased. Neither the curvature of the agreement ($b = -0.06$, $SE = 0.15$, $p = .684$), the direction ($b = -0.56$, $SE = 0.34$, $p = .106$) nor the degree ($b = 0.26$, $SE = 0.40$, $p = .510$) of the discrepancy between supervisor- and clinician-rated supervisory relationship were associated with clinicians' perceptions of a cohesive psychological climate. See Fig. 2.

Figure 2 also shows the interaction between working alliance significantly associated with a cohesive psychological climate. The graph and surface area showed a significant linear ($b = 0.26$, $SE = 0.12$, $p = .035$) relationship between the agreement in supervisor- and clinician-rated working alliance and a cohesive psychological climate; as agreed-upon working alliance scores increased, the TCU-ORC cohesion subscale increased. The direction ($b = -0.12$, $SE = 0.05$, $p = .025$) of the discrepancy in working alliance ratings also was significantly negatively associated with psychological climate. Clinicians whose supervisors had lower ratings but who rated their supervisor more highly on working alliance also rated the TCU-ORC climate cohesion subscale more highly than clinicians with low working alliance scores who had supervisors with high scores. Neither the curvature of the agreement ($b = -0.04$, $SE = 0.04$, $p = .354$) nor the degree ($b = -0.02$, $SE = 0.04$, $p = .643$) of the discrepancy between supervisor- and clinician-rated working alliance were associated with clinicians' perceptions of a cohesive psychological climate.

Psychological Climate—Stress

Figure 3 shows the interaction between supervisors' and clinicians' ratings of the supervisory relationship significantly associated with clinicians' ratings of a stressful psychological climate. The graph and surface area showed a linear ($b = -0.87$, $SE = 0.44$, $p = .049$) relation between agreement on the supervisory relationship with clinician ratings on

Table 4 Supervisor and clinician reports on the SPRS/TPRS associated with psychological climate and emotional exhaustion (polynomial regression)

	ORC Communication			ORC Cohesion			ORC Stress			ORC Autonomy		
	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p
a_1	1.26	0.39	.002	0.68	0.29	0.02	-0.87	0.44	-1.99	0.05	0.17	0.29
a_2	-0.05	0.20	.80	-0.06	0.15	.68	0.16	0.23	0.70	.48	0.15	0.15
a_3	-1.74	0.46	<.001	-0.56	0.34	.11	0.71	0.51	1.38	.17	-0.09	0.34
a_4	1.35	0.54	.01	0.26	0.40	.52	-0.42	0.60	-0.70	.49	0.93	0.39
R^2	0.33	-	<.001	0.30	-	<.001	0.16	-	-	<.001	0.11	-

Bold values are statistically significant ($p < .05$)
 a_1 Slope of the line of agreement—indicates whether and how the predicted variable changes linearly when raters are in perfect agreement
 a_2 Curvature of the line of agreement—indicates whether and how the predicted variable changes curvilinearly when raters are in perfect agreement
 a_3 Slope of the line of incongruence—indicates whether the direction of the discrepancy matters (i.e. whether which rater had the highest rating impacts the predicted variable), positive values indicate supervisor scores have more weight, negative values indicate clinician scores have more weight
 a_4 Curvature of the line of incongruence—indicates how much the outcome variable changes as a result of the discrepancy between rater scores

the TCU-ORC stress subscale, indicating that as agreement scores on the supervisory relationship increase, clinicians’ ratings of a stressful psychological climate decrease. The curvature of the agreement ($b = 0.16, SE = 0.23, p = .484$) as well as the direction ($b = 0.71, SE = 0.51, p = .169$) and degree ($b = -0.42, SE = 0.60, p = .488$) of the discrepancy in relationship ratings were not significantly associated with stressful psychological climate.

Psychological Climate—Autonomy

Figure 4 shows the interaction between relationship ratings as a significant predictor of an autonomous psychological climate. There were no significant associations between the linear ($b = 0.17, SE = 0.29, p = .557$) relationship or curvature of the agreement ($b = 0.15, SE = 0.15, p = .324$) on relationship with clinician ratings on the TCU-ORC autonomy subscale. Further, the direction ($b = -0.09, SE = 0.34, p = .791$) of the discrepancy also was not significant. However, the degree ($b = 0.93, SE = 0.39, p = .02$) of the discrepancy was significantly associated with clinicians’ perceptions of an autonomous psychological climate, indicating that as the discrepancy increases, autonomy increases more sharply.

Discussion

This study examined the agreement and discrepancy in supervisor and clinician ratings of supervisory alliance (i.e. the supervisory relationship and working alliance), and associations with psychological climate and emotional exhaustion. The results indicated that discrepancy between clinicians’ and supervisors’ ratings may be higher than would be expected, given that we found approximately 30% agreement. Interestingly, disagreement comes from both supervisors and clinicians reporting the relationship higher, in nearly equal proportions. That is, supervisors being overly positive about the relationship and working alliance do not always explain discrepancy. The results indicate that both agreement and discrepancy matter. In this study, there was a linear relationship between the supervisory relationship and working alliance with clinicians’ perceptions of their organizational environment for all subscales except autonomy in the expected directions. However, the degree and direction of the discrepancy between clinicians’ and supervisors’ ratings of the supervisory relationship also was important, and significantly predicted a communicative and autonomous psychological climate. Agreement and direction of the discrepancy between supervisors and clinicians on working alliance also was associated with clinicians’ ratings of a cohesive and communicative psychological climate where clinicians’ ratings of cohesion and communication were the

Table 5 Supervisor and clinician reports on the SWAI associated with psychological climate and emotional exhaustion (polynomial regression)

	ORC communication				ORC cohesion			
	<i>Coeff</i>	<i>SE</i>	<i>t</i>	<i>P</i>	<i>Coeff</i>	<i>SE</i>	<i>t</i>	<i>p</i>
a_1	0.76	0.29	2.62	.01	0.74	0.22	3.32	.00
a_2	-0.08	0.12	-0.65	.52	-0.16	0.09	-1.72	.09
a_3	-0.28	0.16	-1.80	.07	-0.26	0.12	-2.23	.03
a_4	-0.06	0.08	-0.71	.48	0.06	0.07	0.88	.38
R^2	0.34		–	<.001	0.32		–	<.001

Bold values are statistically significant ($p < .05$)

Only models with significant overall F-tests are shown here

The following models were not significant: ORC Autonomy, ORC Stress, and Emotional Exhaustion

a_1 Slope of the line of agreement—indicates whether and how the predicted variable changes linearly when raters are in perfect agreement

a_2 Curvature of the line of agreement—indicates whether and how the predicted variable changes curvilinearly when raters are in perfect agreement

a_3 Slope of the line of incongruence—indicates whether the direction of the discrepancy matters (i.e. whether which rater had the highest rating impacts the predicted variable)

a_4 Curvature of the line of incongruence—indicates how much the outcome variable changes as a result of the discrepancy between rater scores

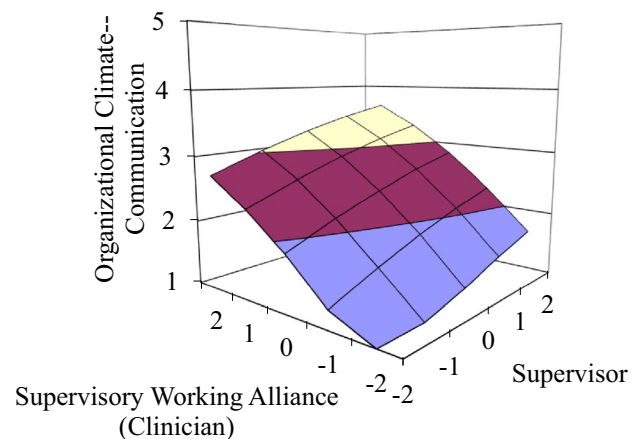
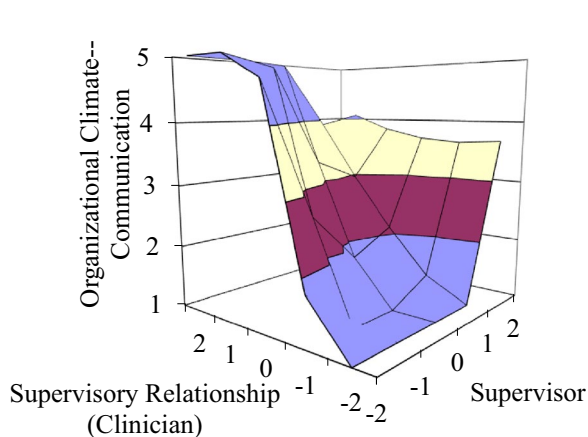


Fig. 1 The figure on the left depicts the supervisory relationship agreement, degree, and direction of the discrepancy associated with clinician-rated communication, whereas the figure on the right

depicts supervisory working alliance agreement, degree, and direction of the discrepancy with clinician-rated communication

lowest when supervisors rated working alliance high and clinicians rated it low (supervisors who are “over-estimators”).

In this study, there were more significant models including supervisory relationships in comparison to working alliance. These findings suggest that improving overall interpersonal supervisory relationships is important and has implications for collaboration among supervisors and clinicians within community mental health, and particularly within the context of EBT implementation. Findings suggest that it may be worth encouraging supervisors or senior leaders to explore the degree of alignment as an important factor in supporting therapists and promoting a positive psychological climate. Organizational behavior,

private industry, and some public universities have moved to 360° leadership assessments, in which leaders not only review subordinates, but are reviewed themselves, with attention to leadership, interpersonal communication, and interactions, among other areas (Toegel and Conger 2003). These procedures might better reveal discrepancies that can be acted on, to the benefit of psychological climate, and ideally, implementation effectiveness. Recently, Aarons et al. (2015) have developed and tested a training approach for leaders, the Leadership for Organizational Change for Implementation (LOCI) intervention to improve specific leader behaviors that may be used to improve supervisory relationship and working alliance.

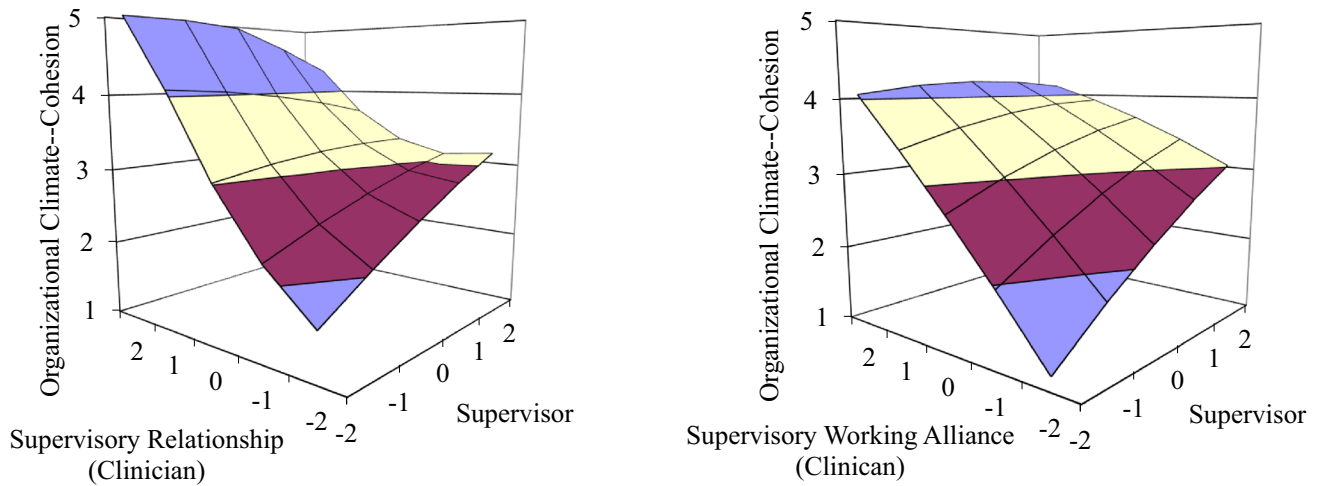


Fig. 2 The figure on the left depicts the supervisory relationship agreement associated with clinician-rated cohesion, whereas the figure on the right depicts supervisory working alliance agreement and direction of the discrepancy associated with clinician-rated cohesion

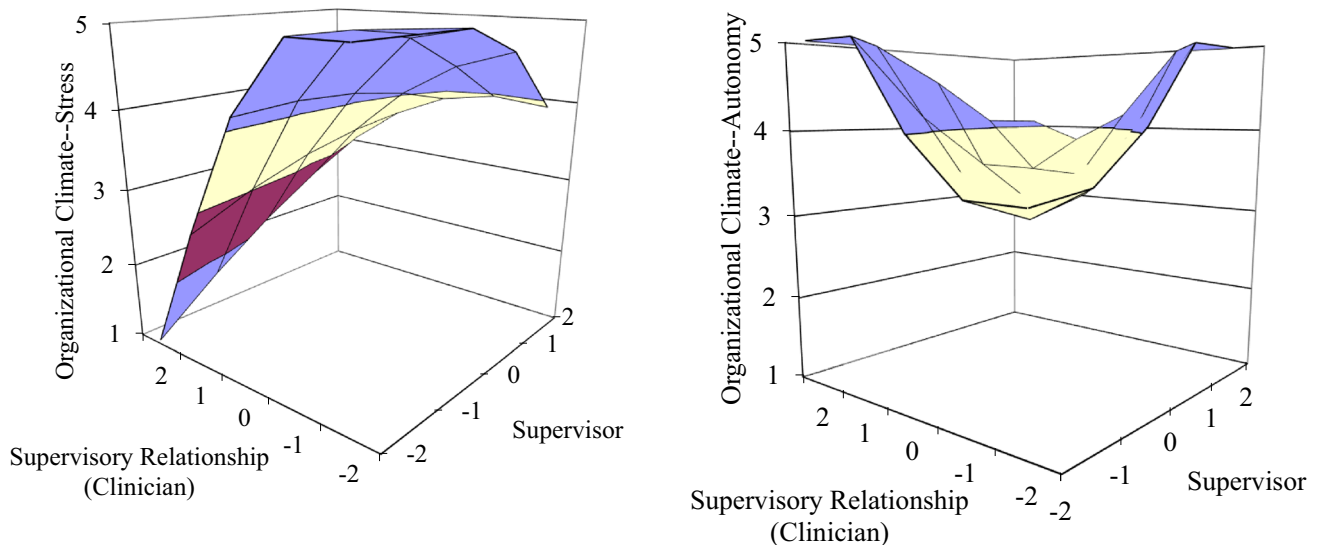


Fig. 3 Supervisory relationship agreement associated with clinician-rated stress

Fig. 4 Supervisory relationship degree of discrepancy associated with clinician-rated autonomy

When perceptions of the supervisory relationship align (supervisors and clinicians both rate the supervisory relationship as positive, neutral, or negative), associations with psychological climate factors are in the expected directions (e.g., positive relationship associated with a less stressful, more cohesive and more communicative working environment, and vice versa). However, when they did not align, effects were less associated. These findings, and Aarons et al. (2016, 2017) studies suggest that any interventions to support supervisors in implementation efforts should include an awareness of: (a) agreement/discrepancy between supervisors and their supervisees on ratings of relationship and working alliance; and (b) when in agreement, whether

perceptions are positive or negative. Perhaps, in situations where supervisors and clinicians have less positive relationships, it may be possible to work with supervisors and clinicians to improve the supervisory alliance, which may lead to improvements in psychological climate to support EBT implementation. Middle level managers or supervisors, and particularly their interactions with their supervisees, have been hypothesized to be important drivers in meeting organizational goals. For example, Liao and Chun (2016) found that a supervisors' monitoring style (observational or interactional) influences supervisees' feedback-seeking behaviors and innovation (idea generation and idea dissemination and

implementation), both of which are necessary for organizational growth (Zhang and Bartol 2010). However, middle level managers and supervisors are often overlooked stakeholders in implementation and may be one potential group to target (Birken et al. 2016, 2012).

Contrary to our hypotheses, we found that as the degree of discrepancy between supervisors' and clinicians' ratings of their supervisory relationship increased, perceptions of an autonomous psychological climate increased. This association was not influenced by the direction of discrepancy (e.g. in discrepant situations, it did not matter whether it was supervisors or clinicians who had higher ratings). In organizations that have a lot of autonomy, we hypothesize there may be looser connections between supervisors and clinicians, including perhaps less overall contact or oversight. This may result in supervisors and clinicians not knowing how the other feels about the supervisory relationship because they practice so independently, and thus rate each other in discrepant ways. These data raise the question as to whether high levels of autonomy in community mental health settings are an adaptive feature for the organization to increase job satisfaction or reduce burnout (Arches 1991; Webster and Hackett 1999). It is possible that some supervisors may prefer clinicians who are more autonomous, and it also is possible that some supervisors may worry about clinicians who practice too independently. In the context of EBT implementation, too much autonomy could be problematic, in that supervision is expected to help build clinician competence and maintain treatment fidelity.

Limitations

Several limitations should be noted. First, this study examined associations between supervisor- and clinician-rated measures of supervisory alliance (i.e. supervisory relationship and working alliance) and psychological climate and emotional exhaustion. The use of the same respondent (clinicians) for some independent and dependent variables may have led to bias. While supervisors' ratings of psychological climate and emotional exhaustion also were collected, the models would have been underpowered to detect meaningful associations with these supervisor-reported variables given the smaller number of supervisors in the study. Future studies should carefully consider varying data collection via measurement separation such as a time lag or counterbalancing question order to control for common method biases (Podsakoff et al. 2003). Second, as the data were cross-sectional, it was not possible to determine whether the associations between supervisors' and clinicians' ratings of the supervisory relationship, working alliance, and psychological climate and emotional exhaustion were causal and, if so, in what direction. Third, it is difficult to interpret the models associated with psychological climate given

that "positive" and "negative" psychological climates have not, to our knowledge, been clearly defined in the literature. There are no cut points on the measure that was used to classify organizations as "ideal," "positive," or "negative." Additional research in this area is needed. Lastly, both agreement and discrepancies in ratings of supervisory relationship and working alliance may hold different meaning if supervisors provided only clinical or only administrative oversight/supervision, as supervisors in this study provided both clinical and administrative supervision.

Conclusion

Among supervisors and clinicians trained in an EBT, the supervisory relationship and working alliance appear to matter with regard to clinicians' perceptions of their psychological climate and their level of emotional exhaustion. This further supports the view that supervisors are influential in the context where EBT implementation efforts are taking place. Examining the impacts of the supervisory relationship and working alliance for clinicians may yield important clues in addressing some challenging implementation barriers, notably factors associated with whether clinicians are likely to stay in their positions over time and the extent to which they deliver effective therapy.

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Compliance with Ethical Standards

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

Ethics Approval The University of Washington Institutional Review Board approved this study. All procedures performed were in accordance with the ethical standards of the University of Washington Institutional Review Board.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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