Collaborative supervision: a cross-validation assessment of the collaborative supervisor behavior scale

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COLLABORATIVE SUPERVISION:
A CROSS-VALIDATION ASSESSMENT OF THE
COLLABORATIVE SUPERVISOR BEHAVIOR SCALE

by

Michael Zlatev

A Dissertation Submitted to the
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Abstract

Collaboration is often cited as an important component of effective clinical supervision. Despite its frequent mention, the collaboration construct has often been poorly defined or confounded with other constructs. The present study sought to replicate and extend the work of Rousmaniere and Ellis (2013) on collaborative clinical supervision (CS) by evaluating the psychometric properties of a measure of collaborative supervision, the Collaborative Supervisor Behavior Scale (CSBS), and assessing its relation with the supervisory working alliance.

The factorial structure and measurement invariance of the CSBS were evaluated. Concurrent validity of the CSBS scores was assessed by exploring relations with measures of the supervisory working alliance, role conflict, role ambiguity, and satisfaction with supervision. It was hypothesized that CS would be moderately and directly related to supervisory working alliance and satisfaction with supervision scores, and inversely related to both role conflict and role ambiguity scores.

Trainees in mental health disciplines (N = 225) were contacted through listservs and training directors with a link to the web-based survey. Consistent with the results reported by Rousmaniere and Ellis (2013), a one-factor structure fit the data well. Assessment of measurement invariance in CSBS scores between the current sample and that of Rousmaniere and Ellis revealed full configural, metric, and scalar invariance. Moderate levels of CS were found in the current sample. Notably, 9.3% of trainees reported an absence of collaborative behaviors by their supervisor. A direct, moderate relation was found between CS and supervisory working alliance, and CS was directly related to satisfaction with supervision, and inversely related to both role conflict and role ambiguity. Results are discussed with theoretical and practical implications, salient limitations, and suggestions for future research.
Chapter 1

Introduction

Clinical supervision is a necessary and significant component of training for professional counselors and psychologists (Ladany, Mori, & Mehr, 2013). Successful supervision of competent clinicians is contingent upon a “strong supervisory relationship” (Ramos-Sanchez et al., 2002, p. 201) between a supervisee and his or her supervisor. The supervisory relationship has been most often investigated in terms of the supervisory working alliance (SWA; Bordin, 1983), which includes three components: an emotional bond between supervisor and supervisee, and agreements on the tasks and goals of supervision. Bordin (1983) referred to the alliance as a “collaboration for change” (p. 35), achieved through “collaborative tasks” (p. 36), implying that collaboration is necessary for building a strong working alliance. However, Bordin failed to define or explicate the construct of collaboration in the context of the SWA.

Since Bordin’s (1983) initial inclusion of the term in his model, many authors have used collaborative to describe their view or model of supervision, as in a “collaborative process” (Wood, 2005, p. 130), “collaborative experience” (Watkins, 2010, p. 242), and “collaborative empiricism” (Milne, Leck, & Choudhri, 2009, p. 112). Other authors identified collaborative supervisory relationships as “characterized by mutual respect” (Szymanski, 2003, p. 221), and suggested that “developing a positive collaboration” (Overholser, 2004, p. 2) is a useful strategy in supervision. Additionally, recently developed professional guidelines define supervision in part as a “collaborative relationship” (American Psychological Association [APA], 2015, p. 37).

Citing the lack of conceptual clarity and limited or flawed empirical evidence regarding collaboration, and attempting to understand the relationship between collaboration and the supervisory working alliance, Rousmaniere and Ellis (2013) defined collaborative clinical
supervision (CS) as “the extent to which the supervisor and supervisee(s) mutually agree and work together on the processes and activities of clinical supervision” (p. 3). These authors operationalized their definition using a newly constructed scale, the Collaborative Supervisor Behavior Scale (CSBS), and reported promising psychometric properties for the measure (confirmatory factor analysis: CFA, item factor loadings, $\lambda s = .86 - .89$, the single factor maximum likelihood solution accounted for 76.3% of variance with acceptable goodness of fit indices).

Additionally, CSBS scores were significantly although only moderately ($r = .57$) associated with scores on a measure of the SWA, the Supervisory Working Alliance Inventory – Trainee version (SWAI-T; Bahrick, 1990), suggesting that CS is related to but distinct from the supervisory working alliance. Rousmaniere and Ellis (2013) stated that this major finding is not consistent with the theorizing of Bordin (1983), who suggested that collaboration must be present for a strong SWA to occur. However, the CSBS has only been used in a single published study, and the viability of the CSBS measure has not been firmly established. Additional empirical testing of the relation between CS and the SWA is essential to provide support for or to disconfirm Bordin’s theorizing about collaboration in the context of the SWA.

Therefore, in agreement with current best practice recommendations for scale development (Ellis, D’Iuso, & Ladany 2008), the present study replicates the investigation of Rousmaniere and Ellis (2013) by: (a) cross-validating the psychometric properties of the CSBS scores with a new sample, thus assessing a viable measure of collaboration, (b) retesting the relation of the CSBS with a measure of the supervisory working alliance, providing evidence for or disconfirming Bordin’s (1983) theorizing, and (c) retesting relations between the CSBS and supervisee experience level. The present study also extends Rousmaniere and Ellis’s (2013)
work by testing the construct validity of the CSBS scores by assessing relations between these
scores and (a) other measures commonly used in clinical supervision and (b) a supervisee’s own
training as a supervisor.

A viable measure of collaboration will allow for future research on collaboration, perhaps
as a moderator between other constructs, and will allow current supervisors to assess and
monitor their use of collaboration in relation to supervision outcomes. Further, this study will
inform training of supervisors and therapists by providing details about the importance of
collaboration in supervision.

Collaboration in Clinical Supervision

Rousmaniere and Ellis (2013) raised three concerns about the previous research on CS.
First, some definitions of CS imply a consistently high and rather static level of collaboration
(Fine & Turner, 1997; Milne, 2007). However, previous studies (Britt & Gleaves, 2011;
Mangione et al., 2011; Szymanski, 2003) suggest that collaboration is not always present in
supervisory relationships.

Considering the nature of supervision, the limited amount of reported collaboration is not
surprising. Inherent in an ethical supervisory relationship is a hierarchy, due to the evaluation
component of supervision. Indeed, supervisors are admonished to “remember that supervision is
an unequal relationship” (Bernard & Goodyear, 2014, p. 25). This hierarchy would seem to
require at least momentary deviations from an otherwise completely collaborative relationship
(Rousmaniere & Ellis, 2013). Second, some authors used vague constructs in their definitions of
CS (e.g., "non-hierarchical,” Mangione et al., 2011, p. 149), or indicated that supervision cannot
be both collaborative and hierarchical (Prouty, Thomas, Johnson, & Long, 2001). Finally,
evidence on collaboration in supervision was either secondary to the purpose of the study (e.g.,
Britt & Gleaves, 2011), difficult to generalize outside of a specific theoretical framework (Szymanski, 2003), or gathered using measures which lacked sufficient psychometric support (Mangione et al., 2011).

Attempting to clarify the apparent ambiguity and lack of consensus on the nature of collaboration, Rousmaniere and Ellis (2013) offered a definition of CS as a viable option for use in supervision research. CS was operationally defined as the “supervisee’s report of the extent to which mutual verbal discussions, initiated by the supervisor, are explicitly aimed at achieving voluntary mutual agreement and working together on the processes and activities of clinical supervision (p. 302). The authors decided to assess collaboration from the supervisee’s perspective, reasoning that supervisees, who are in a position of lower authority in the supervisory relationship, need to recognize their supervisor’s collaborative behavior in order for the exchange to be considered collaborative. That is, if a supervisee fails to recognize his or her supervisor’s invitation for collaboration, then the invitation is not considered collaborative, despite the intention of the supervisor.

In operationalizing CS, Rousmaniere and Ellis (2013) included only observable verbal behaviors. While this approach necessarily excludes other potentially collaborative interactions (e.g., non-verbal behaviors, other para-linguistic cues), the authors reasoned that verbal behaviors “are the primary mechanism of supervision” (p. 302). Additionally, these authors theorized that the level of collaboration could change over time, even within a single supervision session, and proposed that CS is a continuum from non-collaborative to explicitly collaborative. For example, a supervisor might encounter a legal or ethical situation with a supervisee, which would require taking a more directive, single-minded approach than is typical for collaboration.
In developing the CSBS measure, Rousmaniere and Ellis (2013) generated four items that broadly described CS. Revisions were made based on qualitative feedback from 10 supervisors in training, and a fifth item was added in an attempt to capture the supervisee’s subjective experience of collaboration. Sample participants rated the first four items on a 5 point Likert-type scale from 1 (never) to 5 (always). The fifth item was rated on a 4-point scale (not collaborative, somewhat collaborative, very collaborative, and I don’t know) and was eventually dropped because it was not correlated with the other items ($r < .07$).

Rousmaniere and Ellis (2013) used a derivation sample of 252 predominantly female (88.9%) and Caucasian (84.9%) participants, mostly in counseling and clinical psychology (80.2%) and enrolled in doctoral programs (68.7%), receiving supervision in a variety of mental health settings. Evidence of the structural validity of the CSBS scores was provided by an item analysis, which showed that the final four items had strong inter-item correlations, $r_{s} .74 - .79$, $p_{s} < .0001$, item-to-total correlations, $r_{s} .82 - .84$, $p_{s} < .0001$, and confirmatory factor analysis (CFA) factor loadings, $\lambda_{s} .86 - .89$, with a single factor maximum likelihood solution that accounted for 76.3% of the variance. CFA goodness of fit indices were $\chi^2(2) = 6.87$, $p = .03$, RMSEA = .096, $p = .13$, CFI = .99, NFI = .99, SRMR = .012. Overall, these data indicated a good fit to the statistical model.

In testing the validity of their measure, Rousmaniere and Ellis (2013) reported that scores on the CSBS were directly and moderately related to scores on the Supervisory Working Alliance Inventory – Trainee Version (SWAI-T: Bahrick, 1990), $r = .57$, $p < .001$, $\hat{\rho} = .333$, 95% CI [0.247 - 0.436], accounting for 33% of the variance. The authors indicated that this moderate relationship between CS and SWA was in opposition to Bordin’s (1983) theorizing, and argued that CS and SWA would be more strongly related if Bordin’s conceptualization of
the SWA was supported. Additional convergent and divergent construct validity evidence was also provided. Specifically, CSBS scores were not significantly related to supervisee training level, year in graduate program, months of supervised clinical experience, age, professional discipline, degree program, gender, race, or theoretical orientation. Additionally, no meaningful relationships were found between CSBS scores and supervisors’ gender or theoretical orientation ($\tilde{\rho} < .05$). Perceived level of CS was not influenced by these supervisee or supervisor characteristics, suggesting that any variability in CSBS scores is more adequately explained through relations with other variables.

To test whether the findings of Rousmaniere and Ellis (2013) were not due to chance, the present study sought to retest the viability of the CSBS measure, its relation to SWA, and additional concurrent validity, in a new and more diverse sample of trainees (cf. Messick, 1995). The study also extended Rousmaniere and Ellis (2013) by testing hypothesized relations between CS and commonly studied constructs in clinical supervision (supervisee satisfaction, role conflict and role ambiguity; Bernard & Goodyear, 2014) to assess the practical and theoretical significance of CS. That is, if CS is directly and substantively associated with the supervisory working alliance, greater satisfaction, and fewer role difficulties, clinical supervisors may make greater use of this previously elusive construct, and researchers may pursue further study on its importance.

**Hypotheses**

**Cross-validation.** The following hypotheses were proposed for the cross-validation and replication:
**H1.** The single factor structure of the CSBS reported by Rousmaniere and Ellis (2013) will be replicated in a new sample of trainees, testing the factorial validity of the CSBS scores.

**H2a.** Based on Bordin’s (1983) premise that collaboration is inextricably tied to the SWA, supervisees’ perceptions of collaborative supervision were hypothesized to be strongly (value of $r = .8$ or greater; Cramer & Howitt, 2004) and directly associated with their perceived quality of the supervisory working alliance. The competing hypothesis, **H2b,** stated that CS would be moderately (value of $r$ between .3 and .8; Cramer & Howitt, 2004) and directly related to the SWA, since Rousmaniere and Ellis (2013) found that CS and SWA were related yet distinct constructs, sharing 33% of explained variance in the derivation sample.

**Construct Validity.** Due to the promising yet preliminary nature of the psychometric properties of the CSBS scores, it is important to assess the extent to which CSBS scores, and the underlying construct CS, relate to frequently studied and well supported aspects of clinical supervision (i.e., supervisees’ satisfaction, perceived role conflict and role ambiguity, as well as social desirability, experience level, and previous training as a supervisor). The subsequent hypotheses extend the study of Rousmaniere and Ellis (2013).

**Supervisee satisfaction.** Satisfaction with supervision has been defined as supervisees’ evaluation of their behavior in supervision, level of comfort in expressing themselves in supervision, and reaction to the supervisor’s performance and personal qualities (Holloway & Wampold, 1984). It is reasoned that when a supervisor is collaborative, supervisees are more likely to feel comfortable expressing themselves and discussing their reactions to their own and their supervisor’s performance because the supervisor explicitly invites them to do so. That is,
supervisees are likely to be more satisfied when a supervisor is collaborative. Thus, to test the convergent validity of the CSBS scores it was hypothesized that:

\[ H3. \] Supervisees’ perceptions of collaborative supervision would be at least moderately and directly associated with their satisfaction with supervision.

**Perceived role conflict.** Role conflict in supervision occurs “when a trainee is required by the supervisor (a) to engage in behaviors that are incongruent with the trainee's personal judgment or (b) to engage in multiple roles that require opposing behaviors” (Ladany & Friedlander, 1995, p. 220). An example of role conflict is when a supervisee perceives a supervisor’s recommendation to be unethical or illegal but feels pressured to comply with the recommendation. As defined by Rousmaniere and Ellis (2013), collaboration could include invitations by the supervisor to discuss a supervisee’s perception of role conflict, explore the sources of opposing expectations, and allowing for potential resolution of the perceived conflict. Thus, it was reasoned that supervisees who perceive their relationship with the supervisor as relatively more collaborative would be less likely to experience role conflict in supervision than supervisees who view their supervision experience to be relatively less collaborative. To test the divergent validity of the CSBS scores, it was hypothesized that:

\[ H4a. \] Supervisees’ perceptions of collaborative supervision will be moderately and inversely associated with their perceived role conflict.

**Perceived role ambiguity.** Role ambiguity in supervision occurs when supervisees are “unsure of supervisory expectations for their performance or evaluation” (Olk & Friedlander, 1992, p. 390). An example of role ambiguity occurs when a supervisee does not know the expectations for behavior in supervision. It is possible that collaboration could include invitations to discuss the supervisee’s role, responsibilities, and the method of evaluation. Thus,
it was reasoned that supervisees who perceived their relationship with the supervisor as relatively more collaborative would be less likely to experience role ambiguity in supervision than supervisees who viewed their supervision experience to be relatively less collaborative. To test the divergent validity of the CSBS scores, it was hypothesized that:

**H4b.** Supervisees’ perception of collaborative supervision will be moderately and inversely associated with their perceived role ambiguity.

It was also predicted that CSBS scores would be unrelated to scores on a measure of social desirability, as participants were expected to respond in an honest and straightforward manner to all study items. Thus, to test the divergent validity of the CSBS scores, it was hypothesized that:

**H5.** Supervisees’ perception of collaboration will not be related to social desirability.

**Concurrent validity.** Additionally, it was expected that three supervisee characteristics would be related to perceived collaborative supervision. Specifically, supervisee experience level (i.e., year in program, and months of supervised clinical experience) is likely to be directly related to collaborative supervision, because (a) supervisors may be more willing to share responsibility with more advanced trainees (Stoltenberg & McNeill, 2009), and (b) advanced trainees may be more attuned to the process and activities of supervision, making it more likely that they will recognize collaborative behaviors (Stoltenberg & McNeill, 2009). For the same reasons, supervisees who completed formal training as supervisors are likely to report relatively higher levels of CS than those without such training. The first two hypotheses below replicate Rousmaniere and Ellis (2013), who did not find a significant relation between CS and experience level, while the third hypothesis extends the work of Rousmaniere and Ellis, who did not collect data on supervisee training as a supervisor. The following hypotheses will be test the convergent validity of the CSBS scores:
**H6a:** Supervisees’ perceptions of collaborative supervision will be moderately and directly associated with their year in graduate program.

**H6b:** Supervisees’ perceptions of collaborative supervision will be moderately and directly associated with their months of supervised clinical experience.

**H7:** Supervisees’ perceptions of collaborative supervision will be moderately and directly associated with having completed training as supervisors.
Chapter 2

Method

Participants

Power analysis. An a priori power analysis was conducted using R software to determine the minimum sample size required to detect hypothesized effects. To achieve power = .90, an experiment-wise Type I error rate of $\alpha_{\text{EW}} = .05$ ($\alpha_{\text{pc}} = .0029$ based on a correction for multiple hypothesis tests; Holland & Copenhaver, 1988), and a medium effect size of .05 (Ellis, Ladany, Krengel, & Schult, 1996; Haase, Ellis, & Ladany, 1989), at least 120 participants were required. Because a minimum $N = 200$ is recommended for confirmatory factor analysis (CFA; Quintana & Maxwell, 1999), a sample of at least 200 participants was sought, providing statistical power of .95 or higher for tests of Hypotheses H2a through H7.

Inclusion/exclusion criteria. Graduate students in training in mental health fields (e.g., counseling, clinical, or school psychology, marriage and family therapy, community or mental health counseling, social work, school counseling, and substance abuse) in the U.S. or Canada were recruited to participate in the present study. Students were required to be actively engaged in psychotherapy or counseling with clients and receiving weekly individual clinical supervision. Exclusion criteria included individuals under 18 years of age, and those enrolled in clinical training programs outside of the U.S. or Canada.

Participant characteristics. Most participants were women (81.3%) ranging in age from 22 to 59 years ($M = 28.80$, $SD = 5.66$, $Mdn = 28.0$). The majority were Caucasian (76.4%), with 3.6% African-American, 8.4% Asian/Pacific Islander, 5.3% Hispanic/Latina, 0.4% Middle Eastern, 0.4% African, 4.0% Multiracial, and 0.4% Ashkenazi Jew. The majority (67.6%) of participants held a master’s degree (MSW/MA/MS/MEd), 29.3% held a bachelor’s degree, and
most participants were enrolled in a doctoral program (80.4%). The most common fields of study were clinical psychology (47.6%) and counseling psychology (29.8%). Participants ranged from first to eighth year in their current program of study.

Cognitive-behavioral was the most commonly endorsed theoretical orientation toward clinical work (35.6%), followed by psychodynamic/psychoanalytic (15.1%), interpersonal (11.1%), humanistic/existential (10.2%), eclectic (9.8%), integrative (3.6%), systems (3.6%), feminist (2.2%), behavioral (1.8%), and other (7.6%). The most frequently represented clinical settings were college counseling centers (24.0%) and community mental health agencies (24.0%). Table 1 presents more complete demographic information.

Participants reported between one and 120 total months of supervised clinical experience ($M = 24.63, SD = 24.93, Mdn = 10.0$), evidencing a strong positive skew in this variable, and endorsed between one and 30 hours of clinical work per week ($M = 10.85, SD = 6.69, Mdn = 10.0$). Fewer than half of the participants (44.0%) reported formal training as a clinical supervisor. Of the 99 participants who had received such training, 40 reported coursework or workshops only, with the remaining 59 reporting coursework in addition to a supervised practicum.

Most supervisors were women (60.9%). The majority were Caucasian (78.2%), with 5.8% African-American, 4.4% Asian/Pacific Islander, 6.2% Hispanic/Latina, 2.7% Multiracial, and 2.6% either unknown or not reported. Most supervisors held a PhD (61.8%) or a PsyD (18.2%). The most common supervisory degree fields were clinical psychology (50.7%) and counseling psychology (20.4%). Most supervisors were reported to be licensed (85.3%), with 4.4% never licensed, 4.4% pending licensure, and 5.9% either unknown or not reported. Cognitive-behavioral was the most commonly endorsed theoretical orientation toward clinical
work (28.4%), followed by psychodynamic/psychoanalytic (16.4%), interpersonal (8.9%),
eclectic (8.9%), humanistic/existential (4.9%), behavioral (3.6%), systems (3.1%), feminist
(2.2%), integrative (1.8%), with 21.8% either unknown or not reported. Participants reported
between one and 125 sessions with their supervisor ($M = 27.37$, $SD = 19.53$, $Mdn = 25.0$).

**Design**

An ex post facto design was used to evaluate relations between supervisees’ perceptions
of collaborative supervision and (a) the supervisory working alliance; (b) perceived role conflict
and role ambiguity; (c) satisfaction with supervision; (d) social desirability; and (e) demographic
variables, including supervisee experience level (i.e., year in program, months of supervised
clinical experience) and supervisee training in supervision. In addition to collecting a new
sample of trainees, the present study used the original sample of Rousmaniere and Ellis (2013),
hereby designated as the derivation sample, for the purpose of cross-validation using a two-group
confirmatory factor analysis (CFA; see Results section for details). Collaborative supervision
was measured by the Collaborative Supervisor Behavior Scale (CSBS; Rousmaniere & Ellis,
2013). The supervisory working alliance was measured by the Supervisory Working Alliance
Inventory – Trainee version (SWAI-T; Bahrick, 1990). Perceived role conflict and role
ambiguity were measured by the Role Conflict subscale and Role Ambiguity subscale,
respectively, of the Role Conflict and Role Ambiguity Inventory (RCRAI; Olk & Friedlander,
1992). Satisfaction with supervision was measured by the Trainee Personal Reaction Scale –
Revised (TPRS-R; Holloway & Wampold, 1984). Social desirability was assessed using a short
form of the Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960).
Instruments

**Collaborative Supervisor Behavior Scale.** The Collaborative Supervisor Behavior Scale (CSBS; Rousmaniere & Ellis, 2013) is a 4-item measure that assesses perceptions of collaborative behaviors in a given supervision session. The items, rated on a 5-point Likert-type scale from 1 (*never*) to 5 (*always*), include, for example, “How often does your supervisor openly discuss how helpful supervision is for you?” A total score on the CSBS is obtained by summing the raw item scores, with a potential range of 4 to 20. Higher scores represent more perceived collaborative behavior in session initiated by the supervisor.

Cronbach’s alpha for the CSBS was reported as 0.93; in the present study, a coefficient alpha of 0.90 was found. A series of *t* tests, or norm comparison tests, was used to compare scores on the measures in the present study to normative or comparison data. In the present study, a significant difference was found between the observed mean (*M* = 11.31, *SD* = 4.394) and that of Rousmaniere and Ellis (2013; *M* = 10.52, *SD* = 4.14), *t*(224) = 2.70, *p* = .0075, but the observed difference was not meaningful (*ρ* = .027, 95% CI [.003,.072]).

**Supervisory Working Alliance Inventory – Trainee version.** The Supervisory Working Alliance Inventory – Trainee version (SWAI-T; Bahrick, 1990) is a 36-item self-report instrument designed to measure trainees’ perceptions of the supervisory working alliance. The SWAI-T was based on Bordin’s (1979) theory and adapted from Horvath and Greenberg’s (1989) Working Alliance Inventory (WAI). The SWAI-T consists of three 12-item subscales that correspond to the three components of Bordin’s (1983) conceptualization of the supervisory working alliance: Emotional Bond, Agreement on Tasks, and Agreement on Goals. Participants rate each item on a 7-point Likert-type scale, from 1 (*never*) to 7 (*always*). Fourteen items are reverse scored. Total scores, obtained by summing individual item scores, range from 36 to 252.
Table 1

Means, Standard Deviations, and Intercorrelations for Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CSBS</td>
<td>11.31</td>
<td>4.39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(.90)</td>
</tr>
<tr>
<td>2. SWAI-T</td>
<td>193.43</td>
<td>43.95</td>
<td>.67*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(.98)</td>
</tr>
<tr>
<td>3. TPRS-R</td>
<td>45.67</td>
<td>10.61</td>
<td>.53*</td>
<td>.90*</td>
<td></td>
<td></td>
<td></td>
<td>(.91)</td>
</tr>
<tr>
<td>4. RC subscale</td>
<td>1.71</td>
<td>.80</td>
<td>-.45*</td>
<td>-.77*</td>
<td>-.83*</td>
<td></td>
<td></td>
<td>(.93)</td>
</tr>
<tr>
<td>5. RA subscale</td>
<td>2.02</td>
<td>.87</td>
<td>-.59*</td>
<td>-.81*</td>
<td>-.78*</td>
<td>.76*</td>
<td></td>
<td>(.94)</td>
</tr>
<tr>
<td>6. M-C SDS</td>
<td>4.08</td>
<td>2.20</td>
<td>-.09</td>
<td>-.03</td>
<td>-.02</td>
<td>-.02</td>
<td>.11</td>
<td>(.67)</td>
</tr>
</tbody>
</table>

Note. Diagonal entries contain Cronbach’s alpha values for study variables. CSBS = Collaborative Supervisor Behavior Scale (Rousmaniere & Ellis, 2013); SWAI-T = Supervisory Working Alliance Inventory – Trainee version (Bahrick, 1990); TPRS-R = Trainee Personal Reaction Scale – Revised (Holloway & Wampold, 1984); RC = Role Conflict (Olk & Friedlander, 1992); RA = Role Ambiguity (Olk & Friedlander, 1992); M-C SDS = Marlowe-Crowne Social Desirability Scale (Strahan & Gerbasi, 1972).

* $p$-value < .001 (two-tailed).

In developing the SWAI-T, Bahrick (1990) asked seven expert judges to rate each item in terms of its perceived relevance to each of the three supervisory working alliance factors. Inter-judge agreement was strongest for the bond factor (98%), with lower agreement for the other factors (goals, 60%; tasks, 64%). Bahrick also reported Cronbach’s $\alpha = .92$ (goals), .93 (tasks), and .91 (bond).

Ellis, Russin, and Deihl (2003) recommended using the total SWAI-T score due to high intercorrelations and a highly correlated factor structure. Thus, the total score was used. Previous
studies found that SWAI-T scores were negatively correlated with supervisee role conflict and role ambiguity (Ladany & Friedlander, 1995), and positively associated with supervisee satisfaction (Ladany et al., 1999). Bahrick (1990) provided descriptive statistics for the original sample of 10 participants \((M = 204.5, SD = 39.9)\), but the data of Ellis et al. (2003) were used for comparison, as they were derived from a much larger sample \((M = 197.05)\). The observed mean in the present sample \((M = 193.43, SD = 43.954)\) did not differ from Ellis et al.’s (2003) sample, \(t(224) = -1.24, p = .215, \rho = .002, 95\% \text{ CI} [.000, .024]\). In the present study, total score coefficient alpha = .98 was found.

**Trainee Personal Reaction Scale - Revised.** The Trainee Personal Reaction Scale – Revised (TPRS-R; Holloway & Wampold, 1984) is a well-known, 12-item self-report instrument that assesses trainees’ satisfaction with supervision. Participants are instructed to rate each item on a 5-point scale on the extent that the item is characteristic of their feelings, from 1 (*not characteristic*) to 5 (*highly characteristic*). An example is, “I was eager to hear what my supervisor had to say.” Eight of the 12 items are reverse scored. The total TPRS-R score, computed by summing the item raw scores, ranges from 12 to 60, with higher scores representing greater satisfaction with supervision.

In developing the TPRS-R, Holloway and Wampold (1984) used factor analysis and a sample of 140 doctoral and master’s counseling trainees to reduce the original number of items from 32 to 12, divided evenly among the 3 subscales: Evaluation of Supervisor, Evaluation of Self, and Level of Comfort. As in previous studies (Ladany, Ellis, & Friedlander, 1999; Olk & Friedlander, 1992), the present study used the total TPRS-R score as a measure of overall satisfaction. In previous studies, Cronbach’s alpha for the total score ranged from 0.83 (Olk & Friedlander, 1992) to 0.85 (Ladany et al., 1999). In the present study, \(\alpha = .91\). Olk and
Friedlander’s (1992) sample scored $M = 48.17$, $SD = 7.46$. The observed mean in the present study ($M = 45.67$, $SD = 10.611$) was significantly lower than Olk and Friedlander’s, $t(224) = -3.53, p < .001$, but this difference was not meaningful, $\hat{\rho} = .048$, 95% CI [.013, .104].

**Role Conflict and Role Ambiguity Inventory.** The Role Conflict and Role Ambiguity Inventory (RCRAI; Olk & Friedlander, 1992) contains 29 self-report items that assess the perceptions of role conflict and role ambiguity in supervisory relationships. Each item is rated on a 5-point Likert-type scale, from 1 (*not at all*) to 5 (*very much so*). There are two subscales; Role Conflict (RC) has 13 items, and Role Ambiguity (RA) has 16 items. The subscale scores are computed by summing the item raw scores and dividing by the number of subscale items, and range from 1 to 5 for each subscale. Higher scores indicate greater perceived role conflict or role ambiguity.

In developing the RCRAI, Olk and Friedlander (1992) composed 75 items from interviews with 15 supervisors and trainees which were reduced to 29 items after consulting a panel of 10 supervision experts. Validity evidence was derived from a sample of 240 doctoral-level trainees in counseling and clinical psychology. For the RC subscale, Olk and Friedlander reported item-scale correlations ranging from .37 to .77, $M = 1.57$, $SD = 0.62$, and $\alpha = .89$. Cronbach’s alpha = .93 was found in the present study. Although a difference was noted between the observed sample ($M = 1.71$, $SD = .803$) and the Olk and Friedlander (1992) sample, $t(224) = 2.62, p = .009$, $\hat{\rho} = .025$, 95% CI [.002, .070], the difference was not meaningful.

For the RA subscale, Olk and Friedlander (1992) reported item-scale correlations ranging from .50 to .72, $M = 2.04$, $SD = 0.73$, and $\alpha = .91$. Cronbach’s alpha = .94 was found in the present study. No difference was found for the RA subscale between the observed sample ($M =$
2.02, \(SD = .871\) and Olk and Friedlander’s (1992) sample, \(t(224) = -0.34, p = .73, \hat{\rho} = .000, 95\% \text{ CI [.000, .004]}.\)

**Marlowe-Crowne Social Desirability Scale – Form X1.** A short form (10 items) of the Marlowe-Crowne Social Desirability Scale (M-C SDS Form X1; Strahan & Gerbasi, 1972) was used to assess socially desirable responding by participants. One item is, “I’m always willing to admit it when I make a mistake.” Of the 10 true-false items, 5 are reverse scored. Total scores, obtained by summing the individual item scores, range from 0 to 10 (\(M = 4.44, SD = 2.14;\) Reynolds, 1982), with higher scores suggestive of more socially desirable responding. The SDS has variable internal consistency (\(\alpha = .88,\) Fischer & Fick, 1993; Kuder-Richardson reliability = .63, Reynolds, 1982) but improved fit compared to 7 other short forms of the M-C SDS (Fischer & Fick, 1993). In the present study, \(\alpha = .67\) was found. The observed difference between current study data (\(M = 4.08, SD = 2.20\)) and the Reynolds (1982) sample was not significant, \(t(224) = -2.45, p = .014, \hat{\rho} = .022, 95\% \text{ CI [.000, .071]}.\)

**Demographic questionnaire.** For descriptive purposes, participants were asked to report their age, race/ethnicity, gender, current training program, degree sought, theoretical orientation, current clinical setting, months of supervised clinical experience, approximate number of clients per week, training level (beginning practicum, advanced practicum, or internship), and whether or not they completed formal coursework in supervision (see Appendix B). Participants were also asked to report their supervisor’s race/ethnicity, gender, highest degree held (M.A., MSW, Ph.D., Psy.D.), licensure status, prior training in supervision (yes/no), primary theoretical orientation, and number of sessions with their current supervisor. For descriptive purposes, participants were also asked to evaluate whether they (a) liked their supervisor, (b) enjoyed
supervision with their supervisor, and (c) collaborated with their supervisor. Each of these three items was rated on a 7-point Likert-type scale from 1 (never) to 7 (always).

Procedure

Participants were solicited through professional email listservs in mental health related disciplines, personal contacts, and academic and internship training directors. A cover letter (see Appendices C and D) and link to the online study were included in the email. The study was described as an attempt to “understand relationships between trainees and their supervisors.” Snowball sampling was also used in recruitment, as participants were asked to forward the invitation to eligible peers.

Volunteers completed the online study at the password protected website Psychdata.com. Once at the website, participants read the informed consent statement (see Appendix E). Participants were able to click a link indicating consent to participate in the study and were provided with brief directions. Instruments were counterbalanced in four different orders and presented randomly to participants, with the M-C SDS and demographic questionnaire presented at the end for all participants.

Participants who completed the survey were eligible to win a $50 Amazon gift card by submitting their email address at the conclusion of the survey. One gift card was to be awarded for 50 surveys completed, with a maximum of 5 gift card awards. For purposes of the drawing, individual email addresses were stored in a separate online database, and were not linked to participants’ survey responses, thereby maintaining participants’ anonymity.
Chapter 3

Results

Missing Data

Three hundred ten (310) individuals initiated participation in the online study. Several procedures were used to handle cases with missing data. Participants were dropped from analyses if they left 10% or more items blank on any one of the major scales used as study variables (i.e., collaborative supervision, role conflict/role ambiguity, supervisory working alliance, or supervisee satisfaction) or if they failed to complete the demographic questionnaire. Sixty-five participants (21%) were excluded using these criteria. Responses for an additional 20 participants (6.5%) indicated that they did not meet inclusion criteria for the study (i.e., they either were not receiving individual supervision or were not involved in clinical work). These participants were also excluded from analysis, resulting in a final sample of 225 participants.

Of the remaining 225 cases, 187 (83.1%) had no missing values, 31 (13.8%) had one missing value, 4 (1.8%) had two missing values, and 3 (1.3%) had three missing values). For the 38 cases with missing values, deductive/logical imputation was used to derive missing values. The investigator examined each item with missing values and found the most similar item on the same scale (or subscale if applicable). The response for the similar item was used to replace the missing value.

Preliminary Analyses

Counterbalancing. The effectiveness of counterbalancing to control for order effects was assessed using a one-way multivariate analysis of variance (MANOVA), with the instrument scores as dependent variables and order of presentation (four different orders were used) as the independent variable. Box’s M’s multivariate test for homogeneity of dispersion matrices
revealed $M = 106.79$, $F(63, 113452) = 1.61, p = .001$. Robustness of the multivariate significance test is expected given the relatively equal group sizes (57, 58, 53, 57) and Box’s M’s $p$-value not less than .001 (Tabachnick & Fidell, 2001). Pillai’s Trace multivariate test of significance was $V = .072$, $F(15, 657) = 1.082, p = .37$, $\tilde{\rho} = .024$, 95% CI [.000, .027], indicating that no significant order effect was present.

**Tests of assumptions.** A series of preliminary analyses were conducted to test for violations of the assumptions required for and prior to conducting the major analyses. The assumptions of normality, linearity, and homoscedasticity of errors were examined. The data were also screened for the presence of outliers. Violations of assumptions underlying the statistical procedures (normality, linearity, homoscedasticity) were addressed as needed. The presence of outliers and influential cases was explored and found to be within acceptable limits (e.g., Mahalanobis distance, centered leverage, studentized deleted residuals, Cook’s distance, and dfBetas).

**Major Analyses**

**Descriptive results.** On average, supervisees in the current sample reported only a moderate level of collaboration with their primary clinical supervisor ($M = 11.31$, $SD = 4.39$, $Mdn = 12.0$). The average score falls just below the midpoint (12) in the range of possible scores (4-20). Closer inspection of the data reveal that 9.3% of supervisees in the current sample reported the lowest possible CSBS score of 4, or a score of 1 (*never*) on each item, indicating that they perceived their supervisor as never engaging in any of the collaborative behaviors described by the CSBS items. This result is similar to the 11.1% of Rousmaniere and Ellis’s (2013) sample who endorsed the lowest possible CSBS score.
Conversely, 9.8% of trainees in the current sample reported a score of greater than 16. This cutoff was reported by Rousmaniere and Ellis (2013) and chosen because it requires a participant to endorse at least one of the scale items as a 5 (always), thereby endorsing a significant amount of collaboration in their supervisory relationship. For comparison, only 3.6% of Rousmaniere and Ellis’s (2013) sample endorsed similarly high levels of collaboration.

As noted earlier, participants completed three Likert-type items, on a 1 (never) to 7 (always) scale, describing their supervisory relationship in the demographic questionnaire. For “I like my primary clinical supervisor,” results were $M = 5.75, SD = 1.46, Mdn = 6.0$. For “I enjoy supervision with my primary clinical supervisor,” results were $M = 5.44, SD = 1.66, Mdn = 6.0$. For “I collaborate with my primary clinical supervisor,” results were $M = 5.48, SD = 1.47, Mdn = 6.0$. Correlations and shrunken effect sizes between CSBS scores and these three items were $r = .57, .61, \text{and} .60$, and $\tilde{\rho} = .322, .357, \text{and} .369$, respectively.

**Confirmatory factor analysis.** To test H1, a cross-validation of the results of Rousmaniere and Ellis (2013) involved the use of a two-group CFA. Several goodness of fit indices for the cross-validation CFA were examined, including the chi-square test of overall fit and $p$-value, Comparative Fit Index (CFI; Bentler, 1990), Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) and its $p$-value, and Standardized Root Mean Square Residual (SRMR; Bentler, 2006). CFA analyses were carried out using LISREL 8.80 Student Edition.

For this two group CFA, a multistep procedure was used to assess the measurement invariance of the CSBS, or the extent to which the measure provides comparable scores on the same construct in different samples (Brown, 2015; Steenkamp & Baumgartner, 1998). In this case the two samples were the derivation sample of Rousmaniere and Ellis (2013) and the
present sample. First, following guidelines for evaluation of measurement invariance (Steenkamp & Baumgartner, 1998) a test was conducted of the equivalence of the covariance matrices and mean vectors, both jointly and separately, of CSBS scores in the two samples. The test of equality of covariances and means yielded $\chi^2 (14) = 44.27, p < .001$, RMSEA = .095, $p = .011$, and CFI = .980. The statistics for the equality of covariances were: $\chi^2(10) = 36.84, p < .001$, RMSEA = .106, $p = .007$, CFI = .982; while the statistics for the equality of means test were: $\chi^2(4) = 7.33, p = .12$, RMSEA = .059, $p = .34$, CFI = .998. The significant $p$-values and slightly elevated values of RMSEA for the pooled test and the separate test of covariances suggested inadequate fit for these models, while the separate test of means indicated good fit. It was apparent that the item covariances rather than the item means were responsible for the overall lack of invariance between covariance matrices and mean vectors. Due to the observed differences between the covariances, a series of progressively more constrained CFA analyses was conducted to determine what meaningful comparisons could be made between the two groups (cf. Son & Ellis, 2013).

First, the one-factor model was fitted separately to the derivation and current samples to assess for overall goodness of fit. For the derivation sample, results were nearly identical to those of Rousmaniere and Ellis (2013), with $\chi^2(2) = 6.87, p = .03$, RMSEA = .096, $p = .13$, CFI = .99, and SRMR = .012. In the current sample, fit statistics were $\chi^2(2) = 6.75, p = .03$, RMSEA = .097, $p = .13$, CFI = .99, and SRMR = .016. Additionally in the current sample, inter-item correlations ranged from .66 - .72, the item-total correlation was .88 for each item, and factor loadings ranged from .83 - .84. It was noted that, for both samples, the computed RMSEA values exceeded the proposed cutoff of .09. However, RMSEA values may erroneously indicate a poor fit in models with small degrees of freedom (Kenny, Kaniskan, & McCoach, 2015), highlighting the
importance of examining all calculated fit indices. Overall, the one factor model appeared to fit both samples reasonably well.

To test for configural invariance, defined as the same number of factors and similar patterns of factor loadings, the one-factor structure was fitted to both samples together, thereby establishing a baseline model to which subsequent models could be compared (Steenkamp & Baumgartner, 1998). The fit of the configural invariance model was acceptable, with $\chi^2(4) = 13.62, p = .009$, RMSEA = .097, $p = .08$, CFI = .994, SRMR (derivation) = .012, and SRMR (current) = .016. These results suggested that the one-factor model was appropriate in both samples, indicating that the samples demonstrated full configural invariance.

The next step was a test of the metric invariance, or equivalence of the measurement scale, between the two groups by constraining the factor loadings to be equivalent across groups. Metric invariance allows for meaningful comparisons of difference scores between different populations (Steenkamp & Baumgartner, 1998). The fit of the metric invariance model was good, $\chi^2(7) = 14.14, p = .05$, RMSEA = .062, $p = .30$, CFI = .995, SRMR (derivation) = .015, and SRMR (current) = .020. A chi-square difference test was conducted to compare the configural invariance model to the metric invariance model. The $p$-value for $\chi^2(3) = 0.52$ was non-significant ($p > .25$), which, along with the other fit indices, indicated that the model fit was not degraded by constraining the factor loadings to be equivalent. It was concluded that the samples demonstrated full metric invariance.

Finally, the equivalence of the intercepts between the two samples, or scalar invariance, was assessed. Evidence of scalar invariance would indicate that the two groups have the same zero-point on the measure, making group mean difference comparisons meaningful. The fit of the scalar invariance model was good, with $\chi^2(10) = 17.83, p = .06$, RMSEA = .055, $p = .38$, CFI
=.995, SRMR (derivation) = .016, and SRMR (current) = .021. The chi-square difference between the metric invariance and scalar invariance models, \(\chi^2(3) = 3.69, p = .32\), indicated that constraining the intercepts to be equivalent did not result in model degradation. The fit indices suggested good model fit, indicating that the samples demonstrate full scalar invariance. Collectively, the two-group CFA results indicated the presence of configural, metric, and scalar invariance between the derivation and current samples, supporting H1.

**Construct validity.** A series of analyses was conducted to assess the relationship between CSBS scores and scores on the other study measures, testing hypotheses H2a – H5. Recall that the experiment-wise Type I error rate was set at .05 (\(\alpha_{\text{EW}} = .05, \alpha_{\text{PC}} = .0029\)) to maximize statistical power (Holland & Copenhaver, 1988). Subsequent analyses were conducted using SPSS Version 22.0 statistical software.

To test H2a and H2b, the relationship between CSBS scores and SWAI-T scores was tested. Results were significant with \(r = .672, p < .001, \bar{\rho} = .446, 95\% \text{ CI} [.362-.524]\), indicating a moderate and direct relationship between CSBS and SWAI-T scores. A post-hoc test was conducted to compare the value of \(r = .57\) found by Rousmaniere and Ellis (2013) and the value in the current sample. Results indicated that the values were not significantly different, Fisher’s \(z = 1.78, p = .077\). Thus, hypothesis H2a was rejected, whereas H2b was supported.

To test H3, the relationship between CSBS scores and TPRS-R scores was assessed using correlation analysis. Results were significant with \(r = .529, p < .001, \bar{\rho} = .274, 95\% \text{ CI} [.192-.358]\), indicating a moderate and direct relationship between CSBS and TPRS-R scores and supporting H3.

To test H4a and H4b, the relationships between CSBS scores and scores on the RC and RA subscales of the RCRAI were assessed using separate correlation analysis. For the hypothesis
regarding RC scores, results were significant with $r = -0.454, p < 0.001$, $\tilde{\rho} = 0.199$, 95% CI [.124-.280], indicating a moderate and inverse relationship between CSBS and RC scores and supporting H4a. For the hypothesis regarding RA scores, results were significant with $r = -0.587$, $p < .001$, $\tilde{\rho} = 0.339$, 95% CI [.254-.422], indicating a moderate and inverse relationship between CSBS and RA scores and supporting H4b.

To test H5, the relationship between CSBS scores and M-C SDS scores was assessed using correlation analysis. Results were not significant with $r = 0.091, p = .176$, $\tilde{\rho} = 0.000$, 95% CI [.000-.004], indicating no relationship between CSBS and M-C SDS scores and supporting H5.

**Concurrent validity.** A series of analyses were conducted to test hypotheses H6a, H6b, H7. First, the hypothesis that CSBS scores would be moderately and directly related to year in graduate program was not supported, $F(7,217) = 2.046$, $p = .051$, $\tilde{\rho} = 0.054$, 95% CI [.016-.111]. Second, the hypothesis that CSBS scores would be moderately and directly related to months of supervised clinical experience was not supported, $r = .078, p = .246$, $\tilde{\rho} = 0.003$, 95% CI [.000-.026]. Third, the hypothesis that CSBS scores would be moderately and directly related to having completed their own training as a supervisor was also not supported, $t(223) = 1.059, p = .291$, $\tilde{\rho} = .005$, 95% CI [.000-.032]. Results indicate no significant relationship between CSBS scores and training as a supervisor or experience level. Thus hypotheses H6a, H6b, and H7 were not supported.

**Post-hoc tests.** Post-hoc tests were conducted to examine differences between the current and derivation samples on select demographics. Results indicated no significant difference between the samples on current field of study, $F(1,475) = 2.99, p = .08$, $\hat{\epsilon}^2 = .003$, 95% CI [.000-.023], or months of supervised clinical experience, $t(475) = 1.345, p = .18$, $d = 0.12$, 95% CI [.000-.30]. Significant differences were found between the two samples on current year in
graduate program, \( t(474.06) = 3.152, p = .004, d = 0.29, 95\% \text{ CI} [.108-.470] \), gender, \( z = 2.34, p = .019 \), and race/ethnicity (Caucasian versus non-Caucasian), \( z = 2.36, p = .018 \), with the derivation sample having a greater proportion of female (88.9\% versus 81.3\%) and Caucasian (84.9\% versus 76.4\%) participants than the current sample.
Chapter 4

Discussion

Overview of the Present Study

The purpose of the present study was to replicate and extend previous work on collaboration in clinical supervision (Rousmaniere & Ellis, 2013). In the context of assessing the psychometric properties of the CSBS, the major findings include (a) descriptive data about the occurrence of CS, (b) support for the proposition that CS is related to but distinct from the supervisory working alliance, and (c) concurrent validity data for the CSBS measure. Before examining these findings and their implications, I will consider the strengths and limitations of the current study.

Limitations

Several limitations in the present study must be noted. First, all data collected were from the supervisee’s perspective. Without corroborating data from other sources (e.g., observer judgments, supervisor perspective) it is not possible to verify the accuracy of the self-reported data. The potential mono-method bias may make it difficult to detect inconsistent or favorable responding, even with the inclusion of the SDS measure. However, due to the confidential and anonymous nature of the study, it was anticipated that respondents would feel safe enough to respond truthfully to all items. Further issues of sample bias may exist in the context of missing data. It is unclear if participants who were dropped from the analyses due to excessive missing data differed from participants whose data were included.

Second, the study design did not allow the establishment of temporal precedence among variables, only simple cross-sectional associations. Simple associations between measures do not imply causation. For this reason, care must be taken in making inferences from the findings.
Third, the CSBS only asks about specific verbal behaviors that invite collaboration. Since non-verbal behaviors and paralinguistic cues also contribute to all interpersonal interactions, it is possible that a participant might fail to recognize his or her supervisor’s invitations for collaboration. An invitation to collaboration, even one that is recognized, does not necessarily imply that collaboration occurred in the supervisory experience.

Next, the sample was one of convenience. Self-selection bias is a potential threat to validity that may influence the results in unpredictable ways. The sampling procedure relied heavily on training directors to distribute the recruitment email to their students, and on participants to share the survey link with peers through snowball sampling, which introduced additional selection bias. Participants interested in or faced with current issues in their own supervision may have been more (or less) likely to complete the study.

Although the intent was to collect a more diverse sample of trainees than the derivation sample, cursory examination of the two samples reveals similar demographic characteristics. Post-hoc tests indicated that the derivation sample had a greater proportion of female and Caucasian participants than the current sample, suggesting that the current sample included greater gender and ethno-cultural diversity than the derivation sample.

Examination of recently published supervision studies (Bertsch et al, 2014; Deemer, Thomas, & Hill, 2011; Ellis et al, 2014; Ladany et al, 2013; Son & Ellis, 2013; Yamada, Cappadocia, & Pepler, 2014) that used similar sampling procedures (convenience samples, national surveys, etc.) revealed samples of trainees that were mostly women (between 78% and 88%) and mostly Caucasian (between 80 and 86%). The current sample (81% female and 76% Caucasian) is comparable to those in the studies cited, and may encompass more diversity in
terms of gender and ethno-cultural background, as suggested by post-hoc test results comparing the current sample to that of Rousmaniere and Ellis (2013).

**Strengths**

A primary strength of the current study was its design to replicate and extend previous research on collaboration in clinical supervision (Rousmaniere & Ellis, 2013). The study systematically evaluated the measurement invariance of the CSBS and provided additional construct validity data for the measure. The study tested Bordin’s (1983) theorizing about collaboration in the context of the SWA, and tested two competing hypotheses concerning the relation between CS and SWA.

The current study set forth meaningful, theoretically and empirically derived hypotheses for testing, matching appropriate statistical procedures to test these hypotheses. Well-established, psychometrically sound instruments were used, and current scores were compared with normative scores for each survey instrument. Other strengths included collecting an adequate sample for desired statistical power, controlling Type I and Type II error rates, minimizing order effects of instrument presentation, and ruling out social desirability as a confound.

**Major Findings**

The first major finding was empirical data describing the level of perceived collaboration among supervisees. Supervisees in the current sample reported a moderate level of collaboration with their primary clinical supervisor, consistent with previous findings (Britt & Gleaves, 2011; Rousmaniere & Ellis, 2013; Szymanski, 2003). The range and distribution of scores supports Rousmaniere and Ellis’s conceptualization of CS as a continuum as opposed to a fixed quality. The full measurement invariance of CSBS scores is also notable, given that the current sample had greater gender and ethno-cultural diversity than the derivation sample.
The second major finding was support for Rousmaniere and Ellis’s (2013) proposition which stated that CS and the SWA are related but distinct constructs. Bordin’s (1983) assertion that collaboration is essential for the supervisory working alliance was not supported empirically. In the current study, CS and SWA shared 45% of explained variance ($\hat{\rho} = .446$), whereas Rousmaniere and Ellis (2013) reported 33% shared explained variance ($\hat{\rho} = .333$), a difference which was found to be non-significant ($z = 1.78, p = .077$) with a test of abundant statistical power.

The third major finding was evidence of construct validity in observed relations between CS and other study variables. Specifically, CS was found to be inversely and substantively related to both perceived role conflict (sharing 20% of explained variance; $\hat{\rho} = .199$) and perceived role ambiguity (sharing 34% of explained variance; $\hat{\rho} = .339$), as well as moderately and directly related to satisfaction (sharing 27% of explained variance; $\hat{\rho} = .274$). Practical implications will be discussed.

A final finding concerns the non-significant relationships between CS and (a) experience level and (b) supervisee training as a supervisor. Although it seems intuitive that a supervisor would share more responsibility with a more advanced trainee (Stoltenberg & McNeill, 2009), i.e., collaborate more, this premise was not supported empirically.

**Theoretical Implications**

Rousmaniere and Ellis (2013) proposed that CS and SWA were moderately related, which was supported by current study data. It is conceivable that a strong alliance could develop in the absence of collaborative behaviors as defined by Rousmaniere and Ellis (2013), or that a strong working alliance may fail to develop despite a supervisor’s explicitly collaborative invitations. Yet it is apparent that supervisees in collaborative relationships tend to report
stronger working alliances than those who are not. This finding provides support for
Rousmaniere and Ellis’s theorizing that a higher order factor may encompass both CS and SWA,
which is in opposition to Bordin’s (1983) model, in which collaboration is subsumed by the
working alliance.

**Practical Implications**

The results of the current study have implications for the practice of supervision. In the
current study, CS and role conflict shared 20% of explained variance ($\rho = .199$), while CS
shared 34% of explained variance with role ambiguity ($\rho = .339$), both moderate relationships.
These significant relations suggest that supervisees involved in supervisory relationships which
include discussions about the process of supervision are less likely to face confusion and discord
about their role in supervision. Thus supervisors may wish to incorporate more frequent
discussions regarding expectations of their supervisees to prevent or at least minimize role
difficulties. The CSBS provides explicit behaviors supervisors could use in session to minimize
potential supervisee confusion over role expectations.

A moderate, direct relation was found between satisfaction and CS, implying that
supervisees tend to be more satisfied with collaborative supervisory relationships. In fact, CS and
satisfaction shared 27% of explained variance in the current study ($\rho = .274$). Given this
significant finding, supervisors who intentionally engage their supervisees in discussing the
processes of supervision may create more satisfactory relationships. As a supervisor’s use of
collaborative behavior increases, so does the level of supervisee satisfaction. Thus supervisors
would do well to make use of collaborative behaviors as appropriate.

Current guidelines for professional supervisors (APA, 2015) suggest that “collaborative
relationships” are essential for effective supervision. Yet the current and previous studies reveal
that collaboration is often not present, or present at only moderate levels, in supervisory
relationships (Mangione et al., 2011; Rousmaniere & Ellis, 2013). This apparent discrepancy
between what is “essential” and what actually occurs seems to imply that supervision as
currently practiced may be less than ideally effective. If collaboration is essential for effective
supervision, training programs may wish to emphasize the importance of implementing
collaborative behaviors to their supervisors-in-training, especially considering the evidence that
supervisees often fail to disclose important information to their supervisors (Mehr, Ladany, &
Caskie, 2010). Explicit invitations to discuss difficult material could make trainees more likely to
disclose such information. Current and future supervisors can be more intentional with their
invitations to collaborate, instead of assuming that this process is taking place.

Future Directions for Research

Several lines of research are suggested. First, although preliminary support has been
provided for Rousmaniere and Ellis’s (2013) theorizing about CS, questions remain. For
instance, does CS change over time as proposed? Future research could explore the use of the
CSBS as a weekly, session by session measure of collaboration to (a) test the assertion that CS
varies over time within supervisory relationships, and (b) attempt to link the use of collaborative
behaviors to favorable outcomes, such as enhanced supervisee development or improved client
outcomes (Ellis & Ladany, 1997). Longitudinal studies measuring supervisory working alliance,
collaboration, satisfaction, and so forth would allow for tests of temporal precedence and inform
supervisory practice to ultimately enhance supervisee development. Information about when and
how much collaboration is helpful in a supervisory relationship could benefit supervisors and
supervisees.
Second, researchers might consider gathering data about collaboration from a supervisory perspective, or from supervisee-supervisor dyads (Bernard & Goodyear, 2014). Having dual perspectives would provide validity data and help mitigate the effects of mono-method bias. Additionally, it would be helpful to ascertain the kinds of behaviors that are considered collaborative by practicing supervisors; differences may exist between what is assumed to be collaborative and what is actually perceived as such by supervisees.

Third, the nature of the CSBS, specifically its brevity and focus on explicit supervisor verbal behaviors, necessarily limits the type of collaboration that can be investigated. A moderate relationship was found ($r = .60, p < .001, \hat{\rho} = .357$) between CSBS scores and a simple, single item asking how often a supervisee collaborates with their supervisor, with 36% shared variance between CSBS scores and the single item. One might expect a stronger association, but the use of a single item measure necessitates cautious interpretation. Still, this finding does suggest that focusing on explicit verbal behavior by the supervisor may be insufficient to fully encompass different types of collaboration. Future researchers may wish to investigate other types of collaboration to provide greater clarity of this construct.

Finally, collaboration could be studied as a potential mediator or moderator variable in the supervisory process. For example, does collaboration influence the strength of supervisory working alliance differently in cross-cultural supervisory dyads? Additionally, might supervisees from one culture rate their SWA higher than members of another culture based on their perception of collaboration in the supervisory relationship?

Conclusion

The purpose of the study was to replicate and extend previous research on collaborative supervision (Rousmaniere & Ellis, 2013) by assessing the psychometric properties of a new
measure, the CSBS, testing competing hypotheses, and assessing the concurrent validity of the
measure. Results supported use of the CSBS as a viable measure of collaboration and provided
evidence for the importance and utility of collaboration in supervision, which is especially
relevant considering recently published professional guidelines for clinical supervision (APA,
2015).

In this study, supervisees who recognized collaborative efforts by their supervisors
tended to be more satisfied, had less ambiguity and conflict regarding their role in supervision,
and reported a stronger working alliance with their supervisor than those trainees whose
relationships were not seen as collaborative. Due to the observed importance of collaboration,
supervisors would be wise to continue and enhance their efforts to openly and explicitly
collaborate with their supervisees.
References


Appendix A. Sample Demographics

Table A1. *Supervisee Characteristics as a Percentage of the Sample (n=225)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>% of sample</th>
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Table A2.
*Supervisor Characteristics as a Percentage of the Sample (n=225)*

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</table>
Appendix B. Demographic Questionnaire

DIRECTIONS: Please answer each of the following questions. As with the previous questions, please keep your primary clinical supervisor in mind as appropriate.

1. Today’s date (mm/dd/yyyy)

2. Age (in years)

3. Gender: Male
   Female
   Other (Please Specify)

4. Race/Ethnicity:
   African-American
   Asian/Pacific Islander
   Caucasian
   Hispanic/Latina
   Middle-Eastern
   Native American
   Multiracial
   Other (Please Specify)

5. Highest Degree earned thus far:
   AA
   BA/BS
   BSW
   MSW
   MA/MS/Med
   PhD
   Psyd
   EdD
   MD
   Other (Please Specify)

6. Graduate degree currently pursuing
   MSW
   MA/MS/Med
   PhD
   Psyd
   EdD
   MD
   Other (Please Specify)

7. Field of Study for current degree:
Child/adolescent Psychology
Clinical Psychology
Community Counseling
Counseling Psychology
Health Psychology
Marriage/Family Therapy
Mental Health Counseling
Neuropsychology
Rehabilitation Counseling
School Counseling
Social Work
Substance Abuse
Other (Please Specify)

8. In what country is your training program located?
   USA
   Canada
   Other (Please Specify)

9. Year in your current degree program (e.g., for 3rd year enter 3)

10. Current Level of Training:
    Pre-practicum
    First practicum
    Advanced practicum
    Internship (Masters)
    Internship (Pre-doctoral)
    Post-Masters
    Post-doctoral
    Other (Please Specify)

11. In what setting are you currently delivering clinical services with your primary supervisor?
    College counseling center
    Community mental health
    Forensic/prison
    Primary/secondary school
    Private practice
    Private psychiatric hospital
    State psychiatric hospital
    Substance abuse facility
    University-based training clinic
    VA hospital
    Other (Please Specify)

12. Approximate total years and months of supervised clinical experience:
13. Approximate number of face-to-face clinical hours you provide per week:

14. Your Primary Theoretical Orientation in your clinical work:
   - Behavioral
   - Biological
   - Cognitive
   - Cognitive-Behavioral
   - Eclectic
   - Humanistic/Existential
   - Interpersonal
   - Psychodynamic/Psychoanalytic
   - Systems
   - Other (Please Specify)

15. Have you completed training in clinical supervision (as a supervisor; e.g., supervised practicum, workshop, other)?
   - Yes
   - No

   If yes, specify the type of training:

*Please answer the following questions about your primary clinical supervisor, i.e., the person who provides individual supervision of your clinical work. If you have more than one supervisor, choose the one who supervises the majority of your clinical work.*

1. Your supervisor is: Female
   - Male
   - Other (please specify)

2. Your supervisor’s race/ethnicity:
   - African-American
   - Asian/Pacific Islander
   - Caucasian
   - Hispanic/Latina
   - Middle-Eastern
   - Native American
   - Multiracial
   - I Don’t Know
   - Other (Please Specify)

3. What is your supervisor’s theoretical orientation toward clinical work?
   - Behavioral
   - Biological
   - Cognitive
Cognitive-Behavioral
Eclectic
Humanistic/Existential
Interpersonal
Psychodynamic/Psychoanalytic
Systems
I Don’t Know
Other (Please Specify)

4. Is your supervisor trained in clinical supervision?
   Yes
   No
   I Don’t Know

   If known, specify type of training:

5. What degree does your supervisor possess?
   AA
   BA/BS
   BSW
   MA/MS/MEd
   CAS
   MSW
   PsyD
   PhD
   EdD
   MD
   I Don’t Know
   Other (Please Specify)

6. In what field of study?
   Child/adolescent Psychology
   Clinical Psychology
   Community Counseling
   Counseling Psychology
   Health Psychology
   Marriage/Family Therapy
   Mental Health Counseling
   Neuropsychology
   Rehabilitation Counseling
   School Counseling
   School Psychology
   Social Work
   Substance Abuse
   I Don’t Know
Other (Please Specify)

7. What is your supervisor’s licensure status in his or her professional field?
   - Never licensed
   - Licensure pending
   - Currently licensed
   - Previously licensed (not currently)
   - I Don’t Know
   - Other (Please Specify)

8. Total number of individual clinical supervision sessions you have had with your primary clinical supervisor

9. I like my primary clinical supervisor:

   Not at all  Rarely  Occasionally  Sometimes  Often  Very Often  Always
   1           2        3             4          5        6         7

10. I enjoy supervision with my primary clinical supervisor:

    Not at all  Rarely  Occasionally  Sometimes  Often  Very Often  Always
    1           2        3             4          5        6         7

11. I collaborate with my primary clinical supervisor:

    Not at all  Rarely  Occasionally  Sometimes  Often  Very Often  Always
    1           2        3             4          5        6         7

12. What prevents greater collaboration, if anything?
Appendix C. Recruitment Letter

Greetings,

My name is Michael Zlatev, and I am a doctoral candidate in the Department of Educational and Counseling Psychology at the University at Albany. I am asking you to: (a) complete my dissertation survey, which has been reviewed and approved by the Institutional Review Board at the University at Albany; and (b) forward my invitation to four eligible participants that you know personally. I know your time is valuable, and I appreciate your consideration.

The study involves clinical supervision. I am seeking participants who are graduate student counselor and therapist trainees over the age of 18, currently providing counseling services and engaged in clinical supervision to participate in this study. The survey takes approximately 15-20 minutes to complete.

Participants will be eligible to win a $50 Amazon gift card; one winner will be selected at random for every 50 completed questionnaires, with a maximum of 5 gift cards awarded.

Your responses will be confidential and password protected.

To participate, please click on the following link, or cut and paste into your internet browser’s address bar:

https://www.psychdata.com/s.asp?SID=159180

The password to access the survey is CS85

My deepest thanks,

Michael Zlatev, M.A.
Doctoral Candidate
Division of Counseling Psychology
University at Albany
mzlatev@albany.edu
Appendix D. Solicitation to Clinical/Internship Directors

Dear Training Director:

My name is Michael Zlatev, and I am a doctoral candidate in the Department of Educational and Counseling Psychology at the University at Albany. I am conducting a study on relationships in clinical supervision, the results of which may have implications for the training of current and future supervisors.

I would like to invite master’s and doctoral students in your program to complete my survey, which takes approximately 15-20 minutes to complete. Your help in forwarding my invitation is much appreciated. After completing the survey, participants can register to win a $50 Amazon.com gift card (one winner will be selected for every 50 completed questionnaires, with a maximum of 5 gift card awards).

To qualify for participation, trainees must be at least 18 years of age, currently providing counseling services, and currently engaged in clinical supervision.

Responses are confidential and password protected. Participants may withdraw at any time without penalty. This study is approved by University at Albany’s Institutional Review Board. For more information, you may contact the Office of Regulatory Research Compliance at the University at Albany, at (518) 442-9050 or at orrc@albany.edu.

The study can be accessed here: https://www.psychdata.com/s.asp?SID=159180

The password to access the survey is CS85

Please feel free to contact me with any questions or concerns. Thank you!

Sincerely,

Michael Zlatev, M.A.
Doctoral Candidate
Division of Counseling Psychology
University at Albany
mzlatev@albany.edu
Appendix E. Informed Consent

Greetings! My name is Michael Zlatev, and I am a doctoral candidate in the Department of Educational and Counseling Psychology at the University at Albany. I invite you to participate in my research study on clinical supervision that has been approved by the Institutional Review Board at the University at Albany.

To be eligible, you must be:
- A current graduate student at least 18 years of age,
- Currently providing counseling or psychotherapy services, and
- Currently engaged in individual clinical supervision as a counselor or therapist trainee

I am trying to understand relationships between trainees and their supervisors. While there is no direct benefit to you for completing the survey, it is hoped that the results will inform current and future practices of supervisors to make for better training experiences and enhance clinician competencies.

The survey will take approximately 15-20 minutes to complete. Completion of the online materials indicates your consent to participate.

After completing the questionnaire, you can register for a chance to win a $50 Amazon gift card; one winner will be chosen for every 50 completed questionnaires, with a maximum of 5 gift cards awarded. Register by submitting your e-mail address at the end of the study. Your e-mail address will not be linked to your survey responses.

Online Data Collection

This project has been approved by the University at Albany Institutional Review Board. Approval of this project only signifies that the procedures adequately protect the rights and welfare of the participants. Please note that absolute confidentiality cannot be guaranteed due to the limited protections of Internet access. All information obtained in this study is strictly confidential unless disclosure is required by law. Data collected will be password protected. In addition, the Institutional Review Board, the sponsor of the study, and University or government officials responsible for monitoring this study may inspect these records.

As a participant in this research, you should read and understand the following statements:

• Because this research is CONFIDENTIAL, you will not be identified in any presentation or publication of this research. Results of this research study may be presented in professional mediums; however, no individual participants will ever be identified. All information you provide will be combined with the data from other respondents and reported as grouped data.

• You have a right to be informed of all potential risks associated with your participation in this research. There is no more than minimal risk associated with participation in this
survey. Possible psychological risks are likely to be small and unlikely to occur. You may at any time discontinue participation without penalty or loss of privilege.

• There are no codes or any other information contained on the questionnaire or any other materials associated with it that identifies you as an individual respondent to this survey.

• All participant responses will be completely CONFIDENTIAL. In order to assure anonymity, please do not put your name (or any other identifying information) anywhere on the web survey.

**NOTE For On-Line Participants:** Because the research questionnaire may ask you to provide information that you may not want other people to know, there is a small risk associated with the unlikely chance that somebody else might view the information you provide. Thus, you should protect yourself from the types of occurrences identified below:

• There is a possibility that your responses could be viewed by an outside party if you do not **EXIT/CLOSE** your Internet browser (e.g., Netscape Navigator, Internet Explorer, etc.) as soon as you finish responding to the questionnaire because your responses might be visible if you (or someone else) click the **BACK** button on the browser. In order to **ELIMINATE** this possibility, you should **EXIT/CLOSE** the browser as soon as you finish responding to the survey and have submitted your responses.

You may contact me at mzlatev@albany.edu if you have any questions about the study. Alternately, contact my academic advisor, Michael Ellis, at mvellis@albany.edu. If you have questions about your rights as a research participant, please contact the Office of Regulatory Research Compliance at the University at Albany at (518) 442-9050, or orrc@albany.edu.

Many thanks,

Michael Zlatev, M.A.
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To provide your consent to participate and complete the survey, please click the "Continue" button below.