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Examining the Relation between Technical and Global Competence in Two Treatments for Youth Anxiety

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Abstract

Although technical (quality of delivering techniques from a specific treatment) and global (general clinical expertise) competence are believed to be important ingredients of successful psychosocial treatment with youth, there have been few empirical efforts to measure both dimensions. Efforts to understand the role that each competence dimension plays in the process and outcome of youth treatment starts with determining whether the dimensions can be measured separately. This study examined whether scores from measures designed to assess technical and global competence were distinct. Treatment sessions (N = 603) from 38 youths (M age = 9.84 years, SD = 1.65; 60.5% White; 52.6% male) treated for primary anxiety problems within a randomized effectiveness trial were coded. Four coders used observational measures designed to assess technical competence, global competence, protocol adherence, and the alliance. Mean item interrater reliability was .70 (SD = .09) for technical competence and .66 (SD = .05) for global competence. While most components of global competence were distinct from technical competence scores, two components showed redundancy (r > .70). Scores on both competence measures were empirically distinct (r < .70) from scores on measures of protocol adherence and the alliance. Although the measures did not fully distinguish between technical and global competence, our findings do indicate that some components of technical and global competence may provide unique information about competence.

Keywords

technical competence; global competence; CBT; youth anxiety

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Conceptualization and measurement issues can hamper progress in understanding the role of competence in the process and outcome of youth psychosocial treatment (McLeod et al., 2013) as well as other health-related fields (see Mills et al., 2020). The past two decades have witnessed an increased emphasis on competence-based practice, which focuses on promoting the core competencies required for effective youth psychosocial treatment (e.g., Fouad et al., 2009; Humphreys et al., 2018; Kaslow et al., 2009). Competence in the delivery of a psychosocial treatment (hereafter called *treatment*) is seen as a critical element of successful treatment, yet various definitions and conceptualizations of competence exist (Barber et al., 2007; Mills et al., 2020). To date, measures of competence developed for youth treatment have primarily been developed as tools to assess clinician competence in the delivery of specific treatments (see Collyer et al., 2019). Though these measures assess important dimensions of competence, they may not be as well suited for assessing some global dimensions of competence-based practice that are not associated with delivering a specific treatment (Barber et al., 2007), such as clinicians eliciting clients' feedback (Norcross, 2011). Clarifying conceptualization and measurement issues regarding competence in youth treatment research may thus prepare future work to be better suited to examine the impact of competence on youth clinical outcomes.

Most definitions of competence in youth treatment can be categorized into two broad dimensions (e.g., Barber et al., 2007): (a) *global competence*, defined as the clinical skills and judgement that cut across treatment modalities (e.g., individual-, parent-, family-focused treatments) and types (e.g., cognitive-behavioral therapy [CBT], psychodynamic therapy), and (b) *technical competence*, considered a subset of global competence that is defined as skillfulness and responsiveness in delivering techniques found in a treatment protocol. Global competence thus focuses on dimensions of competence-based practice (e.g., ability to establish an alliance with a client; Kaslow et al., 2009) that are considered part of the "common factors" tradition (i.e., there are elements of treatment that are therapeutic across treatment modalities and types; Castonguay, 1993; Frank, 1971; Grencavage & Norcross, 1990). Yet, few measures have been designed to assess global competence (Brown et al., 2018). Developing an improved understanding of how global competence is measured and to what degree it is distinct from technical competence is an important next step in studying competence in youth treatment.

To date, there have been few efforts to measure global competence (Anderson et al., 2016; Barber et al., 2007; Brown et al., 2018). Broadly speaking, global competence reflects a combination of metacognitive skills (e.g., regulation of one's cognitive processes and the impact of one's behavior on others; McLeod et al., 2018), case conceptualization (Christon et al., 2015), and clinical skills that cut across various treatment modalities and types (e.g., alliance-building; Brown et al., 2018; Castonguay & Beutler, 2006; Grencavage & Norcross, 1990). The measurement of the different components of global competence may be important for evaluating general practice readiness (i.e., core competencies associated with delivering various treatment modalities and types; Sharpless & Barber, 2009) as well as for promoting positive clinical outcomes (Barber et al., 2007). However, few measures specifically designed to assess different components of global competence exist. Most measures that assess global competence in youth treatment focus on observable clinical skills and employ a single item (e.g., "overall session competence"; Bjaastad et al., 2016;

Gutermann et al., 2015). Though such measures may provide useful information, they do not measure different components of global competence (e.g., facilitative interpersonal skills; Anderson et al., 2016). To our knowledge, only one measure, the Global Therapist Competence Scale for Youth Psychosocial Treatment (G-COMP; Brown et al., 2018), is designed to assess the interpersonal (i.e., alliance building, responsiveness), motivational (i.e., positive expectancies), and structural (i.e., focusing treatment, instigating change) components of global competence in youth treatment.

Technical competence focuses on how well a clinician delivers the techniques, often specified within a treatment protocol, from a particular treatment program (Barber et al., 2007; Mills et al., 2020). Technical competence is manifested only when a clinician delivers a specific treatment program or type (Barber et al., 2007). As a result, technical competence is conceptualized as a component of treatment integrity, which refers to the degree to which a specific treatment program was delivered as intended (Perepletchikova et al., 2007). Though definitions of treatment integrity vary, most definitions used in mental health research focus on three components: (a) *protocol adherence*, defined as the extent to which a clinician delivers the treatment as articulated in the protocol (Southam-Gerow et al., 2016), (b) *competence*, defined as how well a clinician delivers the treatment as defined in the protocol (Barber et al., 2007; Hogue et al., 2008a), and (c) *differentiation*, defined as the clinician's delivery of techniques that are proscribed by a treatment model or protocol (Perepletchikova et al., 2007). Measures that assess technical competence have primarily been used to evaluate the success of training clinicians to deliver a specific treatment protocol (e.g., McLeod et al., 2018) and the relation between competence and clinical outcomes (e.g., Hogue et al., 2008b).

Though most efforts to assess competence in youth treatment have focused on technical competence (e.g., Bjaastad et al., 2016; McLeod et al., 2018), researchers have yet to adopt a consistent approach to measurement. Some measures define technical competence in broad terms. For example, the Therapist Behavior Rating Scale-Competence (TBRS-C; Hogue et al., 2008a) is comprised of items that assess broad treatment goals (e.g., "establishing a working relationship", "drug-use monitoring"). In contrast, some measures define technical competence in more discrete terms. For instance, the CBT for Anxiety in Youth Competence Scale (CBAY-C; McLeod et al., 2018) assesses clinician competence in the techniques commonly found within CBT programs for youth anxiety (e.g., exposures).

Though technical competence is considered a subset of global competence, the two dimensions are hypothesized to assess distinct aspects of clinician competence (Barber et al., 2007). Global competencies are hypothesized to represent clinical acumen that generalizes across treatment modalities and types and allows clinicians to help clients achieve treatment goals (Barber et al., 2007; Sharpless & Barber, 2009). These skills map onto the more general skills emphasized in competence-based assessment (e.g., interpersonal skills, affective skills; Kaslow et al., 2009) and common factors research (Castonguay, 1993; Frank, 1971; Grencavage & Norcross, 1990). In contrast, technical competence focuses on the unique competencies associated with delivering a specific treatment program or type. These skills are also emphasized in competence-based practice (e.g., skills in delivering a treatment program; Kaslow et al., 2009). It may be possible for a clinician to possess global

competencies but struggle to deliver a technique associated with a particular treatment program (e.g., exposures in CBT). The opposite may also be true in that a clinician may be highly skilled in the delivery of techniques from a treatment program, but struggle with global competencies. Technical and global competencies are thus not expected to completely overlap (Barber et al., 2007). Yet, few studies have evaluated both dimensions to determine if measures can distinguish between the two dimensions.

The studies that have evaluated technical and global competence exhibited within treatment sessions have not provided a definitive answer to whether existing measures can distinguish between global and technical competence. Some studies (e.g., Bjaastad et al., 2016) suggest that technical and global competence measures may be largely redundant with one another ($r > .70$; Kline, 1979). Conversely, a more recent study suggests that it may be feasible to distinguish between global and technical competence in youth treatment (Brown et al., 2018). It is possible that conceptual and measurement issues may have contributed to the mixed findings. For example, studies reporting correlations that are redundant (defined as $r > .70$; Kline, 1979) have used single items to assess global competence (e.g., Bjaastad et al., 2016), which may not be adequate to measure the different components of global competence (Brown et al., 2018; Mills et al., 2020). Thus, further research is needed to determine if it is possible to discriminate between the technical and global competence dimensions.

The current study sought to determine the amount of overlap between the global and technical competence dimensions in treatment programs for youth anxiety. To accomplish this goal, two design features were considered. First, we selected measures designed to assess global and technical competence. The G-COMP was selected, as it was designed to assess five clinical skills associated with global competence that can be observed within a treatment session: (a) Alliance Building (e.g., ability to establish a strong client-clinician relationship; Castonguay & Beutler, 2006; Norcross, 2011); (b) Positive Expectancies (e.g., ability to strengthen client's expectation of change; Frank, 1971; Norcross, 2011); (c) Focusing Treatment (e.g., ability to structure and focus treatment; Castonguay & Beutler, 2006); (d) Instigating Change (e.g., ability to instigate social, emotional, or behavioral change in a client; Castonguay & Beutler, 2006; Norcross, 2011), and (e) Responsiveness (e.g., ability to manage resistance; Norcross, 2011). The CBAY-C was selected to represent technical competence, as the items were designed to assess the quality of discrete practice elements (i.e., distinct clinical techniques utilized as components of a treatment program; Chorpita & Daleiden, 2009) found in protocols of CBT programs for youth anxiety. Both measures have evidenced initial score reliability and validity (Brown et al., 2018; McLeod et al., 2018). Second, it is important to assess the relation between global and technical competence within specific treatment programs. Though global competence can be assessed across treatment modalities and types, the measurement of technical competence requires specific treatment programs (Barber et al., 2007). Here, we focused on measuring global and technical competence within two treatment programs for youth anxiety.

To evaluate the amount of overlap between global and technical competence, the G-COMP and CBAY-C were used to code treatment sessions from a randomized effectiveness trial (Child Services and Treatment Enhancement Project [STEPs] Multisite Trial; Weisz

et al., 2012). We investigated whether G-COMP and CBAY-C scores were distinct in treatment programs evaluated in the Child STEPs Multisite Trial. To gauge the amount of overlap between the competence dimensions, we used a multicomponent treatment integrity measurement model that included dimensions of competence (i.e., CBAY-C, McLeod et al., 2018; G-COMP, Brown et al., 2018), protocol adherence (i.e., extent to which practice elements found in a treatment protocol were delivered; Southam-Gerow et al., 2016), and the alliance (i.e., quality of the client-clinician relationship; McLeod, 2011). This measurement model maps onto the multi-trait, multi-method framework used to establish construct validity, and is designed to help differentiate between treatment integrity and process components (protocol adherence, competence, alliance) that are hypothesized to be distinct from each other. Based on this model, and previous empirical work in the treatment integrity literature (e.g., Carroll et al., 2000; Hogue et al., 2008a), it was hypothesized that the strength of association between the two competence measures would be "large" (Rosenthal & Rosnow, 1984), but not so large as to indicate redundancy ($r < .70$; Kline, 1979). Correlations between scores on the competence and protocol adherence measures were expected to be positive and "large" (e.g., Bjaastad et al., 2016; Brown et al., 2018; Gutermann et al., 2015; McLeod et al., 2018), but smaller than the correlations between technical (CBAY-C) and global competence (G-COMP) scores. The correlations between scores on the competence and alliance measures were hypothesized to be "small" to "medium" (Rosenthal & Rosnow, 1984) and smaller than the magnitudes of the correlations between competence and protocol adherence scores (e.g., Hogue et al., 2008a; McLeod et al., 2018). This pattern of associations between competence, protocol adherence, and the alliance has been established in previous studies (e.g., Brown et al., 2018; Carroll et al., 2000; Hogue et al., 2008a; McLeod et al., 2018).

Method

Data Sources and Participants

Treatment data were collected from 38 youth and 26 clinicians who participated in the Child STEPs Multisite Trial (Weisz et al., 2012), a randomized effectiveness trial. Youth participants in the Child STEPs Multisite Trial had to meet DSM-IV-TR (American Psychiatric Association, 2000) criteria as determined by the Children's Interview for Psychiatric Symptoms (Weller et al., 2000) or demonstrate clinically elevated problems (T-score > 65) on the Child Behavior Checklist or the Youth Self Report (Achenbach & Rescorla, 2000) in one or more of three areas: anxiety, depression, or conduct problems. Youth were allocated to one of three conditions: modular manualized treatment (Modular), standard manualized treatment (Standard), or usual clinical care. Recorded treatment sessions collected in the Child STEPs Multisite Trial served as the data for the current study. To be included in the current study, the youth had to (a) have a primary presenting anxiety problem, (b) have at least two treatment sessions that could be coded, (c) have received treatment from only one clinician during the trial, and (d) be assigned to the Modular or Standard condition, as the clinicians in these conditions were trained to deliver a specific treatment protocol, which allowed us to assess both technical and global competence. See Weisz et al. (2012) for more information about recruitment procedures.

The 38 youth participants ranged in age from 8 to 13 years old (*M age* = 9.84 years, *SD* = 1.65; 47.4% female, 52.6% male; 60.5% White, 5.3% Black or African American, 2.6% Asian American, 2.6% Latinx or Hispanic, 26.3% Multiracial, and 2.6% Other). Sixteen youth (*M* age = 9.94 years, *SD* = 1.88) were in the Modular condition and identified as: 43.7% female, 56.3% male, 43.8% White, 12.5% Black or African American, 37.5% Multiracial, and 6.3% Other. Twenty-two youth (*M* age = 9.77 years, *SD* = 1.51) were in the Standard condition and identified as: 50% female, 50.0% male, 72.7% White, 4.5% Asian American, 4.5% Latinx or Hispanic, and 18.2% Multiracial (see Table 1).

The 26 clinicians ranged in age from 27 to 59 years (*M* age = 40.34 years, *SD* = 9.67). The clinicians volunteered to participate and were randomly assigned to condition. Ten clinicians were in the Modular condition (*M* age = 35.20 years, *SD* = 6.81) and identified as: 80.0% female, 20.0% male, 40.0% White, 10.0% Black or African American, 40.0% Asian American, and 10.0% Other. Sixteen clinicians were in the Standard condition (*M* age = 43.56 years, *SD* = 9.96) and identified as: 81.2% female, 18.8% male, 50.0% White, 18.8% Black or African American, 12.5% Asian American, and 6.3% Multiracial (see Table 2).

Treatment Conditions

Modular—Clinicians in the Modular condition used the Modular Approach to Therapy for Children with Anxiety, Depression, and Conduct Problems (MATCH; Chorpita & Weisz, 2005) protocol, which is comprised of treatment modules that address anxiety, depression, and conduct problems. Modules in MATCH correspond to the content delivered in (a) Coping Cat, an individual CBT program for anxiety (Kendall & Hedtke, 2006), (b) Primary and Secondary Control Enhancement Training (PASCET), a CBT program for depression (Weisz et al., 1999), and (c) Defiant Children, a behavioral parent training program for conduct problems (Barkley, 2013). There were flowcharts for each problem area in MATCH, each suggesting a default sequence of modules. Clinicians chose the flowchart associated with the primary problem area suggested by scores on baseline measures and by the problems identified as the highest treatment priority by the youth and their caregiver. Since the present study focused on youth with a primary anxiety problem, clinicians used the flowchart associated with anxiety. If interference (e.g., a crisis, stressor, or comorbid condition) arose during treatment, clinicians could reference the flowchart to incorporate modules designed to address those conditions, allowing a return to the focus on anxiety. The protocol also enabled clinicians to shift the focus of treatment entirely, if evidence arose that another problem warranted primary consideration (e.g., depression).

Standard—The Standard condition of the Child STEPs Multisite Trial (Weisz et al., 2012) was comprised of three treatment protocols and a prescribed order of treatment sessions: (a) Coping Cat, (b) PASCET, and (c) Defiant Children. As the current study only included youth with a primary anxiety problem, clinicians delivered Coping Cat. Coping Cat is comprised of 16–20 sessions that are designed to address anxiety symptomology through skill-building (e.g., cognitive restructuring, relaxation, problem solving), graduated exposure to feared stimuli or situations, and continued practice of skills both in and out of the treatment sessions.

Clinician Training and Consultation

Child STEPs Multisite Trial clinicians participated in six days of training; two days were designated for each of the three problem areas. Clinicians received weekly consultation on cases from consultants. A feedback system allowed consultants to track the delivery of treatment practices (see Chorpita et al., 2008; Weisz et al., 2012). Protocol adherence checks revealed that 82.9% of content in the Modular sessions was protocol specific and 17.1% of content was not part of the MATCH protocol; 92.8% of Standard session content was model specific and 7.2% of content was not part of the Coping Cat protocol. Findings from the Child STEPs Multisite Trial indicated that youth in the Modular condition showed better outcomes on multiple clinical measures than youth in the Standard and usual care conditions (Weisz et al., 2012).

Measures

The *Global Therapist Competence Scale for Youth Psychosocial Treatment* (G-COMP; Brown et al., 2018) is an observational measure designed to assess observable global clinical skills in youth treatment. The G-COMP is comprised of five items: Alliance Building (i.e., empathy and demonstrating understanding), Positive Expectancies (i.e., bolstering client's beliefs about the helping process), Focusing Treatment (i.e., structuring and focusing treatment sessions), Instigating Change (i.e., encouragement of emotional reactions and guided self-exploration), and Responsiveness (i.e., handling resistance and tailoring treatment). After watching or listening to an entire treatment session, coders produced competence ratings on each item using a seven-point Likert-style scale with the following anchors: 1 (*very poor*), 3 (*acceptable*), 5 (*good*), and 7 (*excellent*) (Brown et al., 2018). Scores on the G-COMP have previously demonstrated interrater reliability with intraclass correlation coefficients (ICC[2,2]s) ranging from .61 to .79 (M = .70, SD = .07) and construct validity (Brown et al., 2018). Following recommendations from previous work (Brown et al., 2018), the G-COMP items were used as separate indicators of global competence. Scores generated by the two G-COMP coders were averaged for each item for each session.

The *Cognitive-Behavioral Treatment for Anxiety in Youth Competence Scale* (CBAY-C; McLeod et al., 2018) is an observational measure designed to assess technical competence in the delivery of core practice elements commonly found in CBT protocols for youth anxiety. The 23 items assessed three categories: Standard (five items; practices commonly used in CBT but not unique to CBT for anxiety; e.g., "homework review"), Model (12 items; core practices specific to CBT for youth anxiety; e.g., "exposure"), and Delivery (six items; how model practices are delivered; e.g., "rehearsal"). Coders watched or listened to an entire session and then used a 7-point Likert-style competence scale with the following anchors to generate item scores: 1 (*very poor*), 3 (*acceptable*), 5 (*good*), and 7 (*excellent*). In making each rating, coders considered both skillfulness (i.e., technical quality of a practice element) and responsiveness (i.e., the timing and appropriateness of delivery of a practice element for the given youth and situation) for each item. The CBAY-C model items can be combined to create the CBAY-C Total scale, Skills Phase subscale, and Exposure Phase subscale. In previous research, scores on the CBAY-C items demonstrated adequate interrater reliability with ICC(2,2)s ranging from .37 to .80 (M = .67, SD = .11) for the model items. Also, scores

on the CBAY-C items, subscales, and scale demonstrated evidence of construct validity (see McLeod et al., 2018). In this study, the 11-item CBAY-C Total scale comprised of the Psychoeducation, Emotion Education, Fear Ladder, Relaxation, Cognitive Anxiety, Problem Solving, Self-Reward, Coping Plan, Exposure: Preparation, Exposure, Exposure: Debrief items was used, as the Skills Phase and Exposure Phase subscales were highly correlated (r > .70; Kline, 1979). The CBAY-C Total scale has previously been used to assess competence in the delivery of practice elements found in the Coping Cat protocol (see McLeod et al., 2018; McLeod et al., 2019). The CBAY-C Total scale score was created by first averaging the scores generated by the two coders for each item and then taking the highest competence score for that session (McLeod et al., 2018).

The *Cognitive Behavioral Therapy Adherence Scale for Youth Anxiety* (CBAY-A; Southam-Gerow et al., 2016) is an observational measure designed to capture the delivery of practice elements commonly found in CBT protocols for youth anxiety. Similar to the CBAY-C, the 22-item CBAY-A is comprised of four standard, 12 model, and six delivery items. Scores on CBAY-A have previously demonstrated evidence of item-, subscale-, and scale-level score reliability (ICC[2,2]s ranged from .48 to .80; M = .77, SD = .15) and construct validity for use with a CBT protocol for youth anxiety (i.e., Coping Cat; Southam-Gerow et al., 2016). Coders watched or listened to entire treatment sessions and generated scores on a 7-point Likert-style extensiveness scale with the following anchors: 1 (*not at all*), 3 (*somewhat*), 5 (*considerably*), and 7 (*extensively*). Like the CBAY-C, items on the CBAY-A can be used to generate a Total scale, Skills Phase subscale, and Exposure Phase subscale. In this study, the CBAY-A Skills Phase and Exposure Phase subscales were used, as each provided unique information about protocol adherence (r < .70; Kline, 1979). To generate subscale scores, scores produced by the coders were averaged for each item and then the subscale scores were generated by taking the item with the highest score for each session (McLeod et al., 2018; Southam-Gerow et al., 2016). In this study, interrater reliability for the CBAY-A Skills Phase subscale was ICC(2,2) = .87 and was ICC(2,2) = .88 for the CBAY-A Exposure Phase subscale.

The *Therapy Process Observational Coding System-Alliance Scale* (TPOCS-A; McLeod & Weisz, 2005) is a 9-item observational measure of the youth-clinician alliance that assesses the bond (i.e., affective aspects of the client-clinician relationship) and task (i.e., client participation in the activities of treatment) dimensions of the alliance. Coders watched or listened to an entire session and generated scores on a 6-point Likert-style scale with the following anchors: 0 (*no presence*), 1 (*little to some presence*), 3 (*medium to large presence*), and 5 (*a great deal*). Scores on the TPOCS-A have demonstrated evidence of interrater reliability (ICC[2,2]s ranged from .40 to .75; M = .59, SD = .10), convergent validity with a self-report alliance measures, and predictive validity with child clinical outcomes (Fjermestad et al., 2012; McLeod & Weisz, 2005). TPOCS-A scores were generated by averaging item scores across coders and then producing a mean score across the nine items. In the current sample, interrater reliability was ICC(2,2) = .84 for the TPOCS-A scale, and internal consistency was α = .87.

Coding and Session Sampling Procedures

One coding team scored the CBAY-C and G-COMP, and another scored the CBAY-A and TPOCS-A. The CBAY-C and G-COMP coding team was comprised of two female clinical psychology doctoral students (50.0% Latinx, 50.0% White). The CBAY-A and TPOCS-A coding team was comprised of three female clinical psychology doctoral students (33.3% Asian-American; 66.7% White). One coder served on both teams. Coder training progressed through three steps. First, coders read and discussed the scoring manual and coded sessions were reviewed in team meetings. Second, coders scored treatment sessions independently and participated in weekly meetings in which results of the practice coding were discussed. Lastly, coders entered in a certification phase in which they independently coded 40 sessions and were required to reach an adequate level of reliability (ICC[2,2] ≥ .60).

After coders achieved adequate reliability, they began independently coding randomly assigned sessions. Coders met regularly to prevent coder drift (Margolin et al., 1998) and were naïve to study hypotheses. First and last sessions were not coded, as these treatment sessions may contain content focused on intake or termination. Additionally, sessions were not coded if the recording was missing or damaged or if there was less than 15 minutes of audible content, as this would not afford an accurate estimate of what happened over the entire treatment session. The final sample consisted of 603 coded sessions (n = 244 in Modular, n = 359 in Standard).

Measure Collected in the Original RCT

The Child Behavior Checklist (CBCL; Achenbach, 2000) was used in the Child STEPs Multisite Trial to assess broad symptom categories. In this study, we used T-scores on three CBCL scales to describe participants' clinical symptomology: Total, Internalizing, Externalizing.

Results

Preliminary Analyses

We conducted sample bias analyses to ascertain if the 38 youth and 26 clinicians included in this study differed from the other participants with a primary anxiety problem in the Child STEPs Multisite Trial. Neither youth (p's > .13) nor clinicians (p's > .08) included in the current study differed from the other participants with a primary anxiety problem in the Child STEPs Multisite Trial on any of the key demographic or clinical variables listed below in Table 1 or Table 2 . Moreover, there were six youth participants with a primary anxiety problem who were excluded from the current study's analyses because they had fewer than two recorded sessions. Youth participants who were excluded from analyses did not differ from the current sample on any of the key demographic or clinical variables listed in Table 1 (p's > .16).

Differences between youth and clinician participants in the Modular and Standard conditions included in the current study were also examined. Youth participants in the two conditions did not differ on any of the key demographic or clinical variables (see Table 1). Demographic data were also compared between clinicians. There was one significant

difference; clinicians in the Modular condition (M = 35.20, SD = 6.81) were significantly younger than clinicians in the Standard condition (M = 43.56, SD = 9.96), $t(24) = -2.33$, p = .03.

Next, we tested whether the distributions of coded sessions in the Modular and Standard conditions were comparable. A total of 813 sessions were held and 603 (74.2%) were coded (73.7% Modular, n = 244; 74.5% Standard, n = 359). Reasons for not coding sessions were (a) the first/last session (n = 76) or (b) did not meet criteria for coding (i.e., missing or less than 15 minutes of codable content; n = 134). There was not a significant difference in percent of sessions coded between the Modular and Standard conditions, $t(36) = .06$, p = .95.

Primary Analyses

Interrater Reliability—The interrater reliability of technical (CBAY-C Total) and global competence (G-COMP) items was evaluated by estimating ICCs. Interrater reliability was calculated for the 11 items on the CBAY-C Total scale and the five items on the G-COMP. The model ICC(2,2) based on a two-way random effects model was used, as it provides a reliability estimate of the average score of the coders and allows for generalizability of the findings to other samples (Shrout & Fleiss, 1979). Cicchetti's (1994) guidelines were used to evaluate the ICC(2,2)s: below .40 was considered "poor", between .40 and .59 was considered "fair", between .60 and .74 was considered "good", and .75 and above was considered "excellent".

As shown in Table 3, the interrater reliability of the CBAY-C items ranged from ICC(2,2) = .57 to .84 (M = .70, SD = .09). The ICC(2,2)s for four of the 11 items fell within the "excellent" range, five in the "good" range, and two in the "fair" range. Interrater reliability for the five G-COMP items ranged from ICC(2,2) = .59 to .72 (M = .66, SD = .05). The ICC(2,2)s for four of the five items fell within the "good" range, with one in the "fair" range. These findings indicate that all competence items demonstrated at least "fair" interrater reliability.

Construct Validity—To evaluate construct validity, the magnitude and pattern of correlations between scores on competence (CBAY-C Total subscale, G-COMP items), protocol adherence (CBAY-A Skills and Exposure Phase subscales), and alliance (TPOCS-A) measures were evaluated. Rosenthal and Rosnow's (1984) guidelines were used to interpret the magnitude of the correlations, such that r was considered "small" if r = .10 – .23, "medium" if r = .24 – .36, and "large" if r > .36.

As shown in Table 4, correlations between the scores on the measures ranged from "small" to "large" in magnitude (Rosenthal & Rosnow, 1984). The strongest correlation was between CBAY-C Total and G-COMP Instigating Change (r = .86), suggesting that these scores may be redundant (r > .70; Kline, 1979). Correlations between CBAY-C Total and G-COMP item scores ranged from .62 to .86 (M r = .71; SD = .10). The correlations between scores on the CBAY-C Total scale and the CBAY-A Skills Phase subscale (r = .53), the CBAY-A Exposure Phase subscale (r = −.04), and the TPOCS-A subscale (r = .35) ranged from "small" to "large" (Rosenthal & Rosnow, 1984). Correlations between scores on the G-COMP items and the CBAY-A subscales ranged from "small" to "large" (Rosenthal & Rosnow, 1984),

with a mean of r =.17 (SD = .20). Correlations between scores on the G-COMP items and the TPOCS-A ranged from “medium” to “large” (Rosenthal & Rosnow, 1984), with a mean of r = .46 (SD = .10).

Follow-up contrasts were examined using Fisher r-to-z transformation (Fisher, 1921; Silver & Dunlap, 1987). The mean of the correlations between CBAY-C Total and G-COMP subscale scores (r = .71) was significantly higher than the correlation between the CBAY-C Total scale and the (a) the CBAY-A Skills Phase subscale scores (r = .53; z = 4.58; p = <.001), (b) CBAY-A Exposure Phase subscale scores (r = −.04; z = 14.30; p < .001), and (c) TPOCS-A scores (r = .35; z = 7.91; p <.001). The mean inter-item correlation between CBAY-C Total and G-COMP subscale scores (r = .71) was also significantly higher than the mean inter-item correlation between the G-COMP items and the (a) CBAY-A Skills Phase subscale scores (r = .33; z = 8.87; p <.001), (b) CBAY-A Exposure Phase subscale scores (r = .006; z = 14.36; p <.001), and (c) TPOCS-A scores (r = .46; z = 6.35; p < .001).

Overall, the findings were mixed. Correlations between the CBAY-C Total and G-COMP items were significantly higher than correlations between the competence (CBAY-C Total, G-COMP items), protocol adherence (CBAY-A subscales), and the alliance (TPOCS-A) scales. Two correlations between the CBAY-C Total and G-COMP items (i.e., Focusing Treatment, Instigating Change) were redundant (r > .70; Kline, 1979), while the rest of the correlations were distinct (r < .70; Kline. 1979).

Discussion

Global and technical competence have been conceptualized as related but distinct dimensions of competence, although research has not adequately tested this hypothesis. The purpose of the current study was to assess the magnitude and pattern of scores on measures of technical and global competence in two treatment programs for youth anxiety. Most of the correlations between the technical and global competence measures were large, but not so high as to indicate redundancy (r > .70; Kline, 1979). However, two global competence items that overlapped with the structure of CBT (i.e., Instigating Change, Focusing Treatment) were redundant with technical competence scores. Both the technical and global competence scores were distinct from scores on measures designed to assess protocol adherence and alliance.

Correlations among technical and global competence subscale scores suggested that some aspects of global competence (i.e., alliance building, positive expectancies, responsiveness), could be measured distinctly from technical competence in two treatment programs for youth anxiety. However, two components of global competence, focusing treatment and instigating change, could not be distinguished from technical competence. One way to interpret these findings is that not all elements of technical and global competence are distinguishable from one another. This interpretation is consistent with previous findings (e.g., Bjaastad et al., 2016), and suggests that global and technical competence may be highly related. That is, clinicians who demonstrate high levels of general clinical skills (i.e., global competence) may be just as likely to demonstrate high levels of skillfulness and responsiveness when delivering more specific treatments (i.e., technical competence). An

alternative interpretation is that the structured nature of the two treatment programs may increase the inter-relations between certain components of global and technical competence. As a directive approach, CBT involves a focused and change-oriented approach to treatment (Kazdin & Weisz, 1998). Hence, the G-COMP Focusing Treatment and Instigating Change items are likely to overlap with the directive approaches used in CBT. In contrast, the other three G-COMP items that are not as likely to overlap with a directive approach were not redundant with technical competence.

Previous efforts to assess global competence have primarily relied upon single items that do not assess different components of global competence (e.g., Bjaastad et al., 2016; Gutermann et al., 2015). Thus, we do not know if the components of global competence vary across different treatment modalities or types. If the G-COMP was used to score sessions from a non-directive treatment approach (e.g., client-centered play therapy), scores on other items (e.g., Alliance Building) may evidence stronger correlations with scores on a technical competence scale made for that treatment type. The pattern of correlations in this study is consistent with Brown et al. (2018) who found that the Focusing Treatment and Instigating Change items were more strongly associated with technical competence (*r*s = .52 to .53) than were the other global competence items in CBT for youth anxiety (*r*s. = .24 to .26).

Scores on the technical and global competence measures were distinct from scores on protocol adherence and alliance measures, supporting the discriminant validity of these scores. The technical and global competence scores were more strongly associated with scores on the alliance (*rs* = .32 to .56) than with protocol adherence measures (*rs* = −.04 to .53). This pattern runs counter to previous research in which competence has evidenced higher correlations with protocol adherence (*r*s .39 to .65; Brown et al., 2018; McLeod et al., 2018) than alliance (*r*s .25 to .32, Brown et al., 2018; McLeod et al., 2018). Though our findings run counter to previous research, this pattern is consistent with some conceptualizations of competence. That is, some posit that competence bolsters the effectiveness of treatment by strengthening the client-clinician alliance (Smith et al., 2013). That competence scores were more strongly associated with alliance than protocol adherence scores in this study provides some evidence to support this conceptualization of competence (e.g., Smith et al., 2013).

Several limitations of the current study should be noted. First, we only examined technical and global competence in two directive treatment programs for anxiety; conclusions cannot be generalized to other treatment types or problem foci. Second, since CBT is a structured treatment type (e.g., Kazdin & Weisz, 1998), it may have been easier to detect examples of technical competence (i.e., quality of the implementation of specific practice elements) than it was to differentially detect global competence (i.e., individual instances of a clinician being responsive outside of the implementation of practice elements). Third, the same coders rated both competence measures in the current study. Hence, it could be that some of the redundancy in competence scores was due to the same coder rating both technical and global competence (Brown et al., 2018; Campbell & Fiske, 1959). Fourth, the intensive procedures used to generate scores on the treatment integrity measures are costly in terms of time and money and—as is true of many research measures—may not be feasible for use by staff in routine clinical service settings. That said, session recordings made during routine care

could be coded by research teams using these procedures. Fifth, while the nesting of our data do not bias comparisons between correlations among the measures (i.e., the correlations are not biased; see McNeish et al., 2017), it is possible that the nesting may impact the standard errors and thus influence the inferential analyses. Lastly, our definition and measurement of global competence was limited in that it did not account for other global competencies identified in the treatment literature (e.g., integrative reasoning, considerations of diversity, coordination of problem detection and relevant action; Christon et al., 2015; McLeod et al., 2018).

Our findings point to several avenues of future research to help improve the conceptualization and measurement of competence in youth treatment. First, as technical competence measures are specific to the types of treatment in which they are utilized, it would be helpful to test the current study's hypotheses in the context of different treatment types (e.g., client-centered or psychodynamic) and for other problems (e.g., depression). As noted earlier, it is possible that technical and global competence may evidence a different pattern of correlations in other treatment types and modalities. Second, revisiting how competence is conceptualized may help improve measurement. Mills et al. (2020) proposed a new framework in which *competence* (i.e., "observable ability of a person, integrating knowledge, skills, and attitudes in their performance of tasks," p. 12) is distinguished from *tasks* ("observable units of work as part of an activity, which draw on knowledge, skills, attitudes and behaviors," p. 12) and *activities* ("an area of work that encompasses groups of related tasks," p. 12). Global competence overlaps with the Mills et al. (2020) concept of *competence*, whereas technical competence overlaps most with their concept of *activities*. More clearly defining the boundaries between dimensions of competence may benefit efforts to assess each dimension with observational measures. Third, the same scoring strategy was used in this study for technical and global competence, which asks coders to consider "responsiveness". Though this scoring strategy is commonly used (e.g., Bjaastad et al., 2016; Hogue et al., 2008a), rating clinician responsiveness for both technical and global competence may make it more difficult to distinguish between the technical and global competence dimensions. Perhaps skillfulness should be used to define technical competence, whereas responsiveness could be reserved for defining global competence. Fourth, future studies may consider measuring the aforementioned aspects of global competence not accounted for by the G-COMP (e.g., metacognitive skills, McLeod et al. 2018). Future studies might also examine the predictive validity of technical and global competence measures to further test whether these constructs are only theoretically distinct and not empirically or practically distinct (e.g., Anderson et al. 2016). Finally, future studies can use these findings to develop more accessible measures to assess competence that could be more easily used across a wider range of settings and applications (e.g., supervision for community clinicians).

In sum, our findings indicate that technical and global competence scores were not fully empirically distinct in two treatment programs used with youth presenting with anxiety problems. Only certain aspects of global competence (i.e., alliance building, positive expectancies, responsiveness) were distinct from technical competence. Future research will need to determine if this overlap is due to the treatment type, method limitations, or other factors.

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Highlights for "Examining the Relation between Technical and Global Competence in Two Treatments for Youth Anxiety"

- Competence measures demonstrated good interrater reliability
- Technical and global competence were not completely distinct; yet.
- Some facets of technical and global competence may be empirically distinct

Table 1

Youth Descriptive Data and Group Comparisons: Modular vs. Standard

	Modular	Standard	*p*	*df*	*F*
Youth (*n*)	16	22			
Age	9.94 (1.88)	9.77 (1.51)	.77	37	.09
Sex			.7	1, 38	.15
Female	43.7%	50%			
Male	56.3%	50%			
Race/Ethnicity			.15	5, 38	8.18
White	43.8%	72.7%			
Black or African American	12.5%	–			
Asian American	–	4.5%			
Latinx or Hispanic	–	4.5%			
Multiracial	37.5%	18.2%			
Other	6.3%	–			
CBCL Total Pre-Tx	63.62 (10.39)	65.27 (7.49)	.57	37	.32
CBCL Internalizing Pre-Tx	69.56 (9.33)	70 (6.72)	.87	37	.03
CBCL Externalizing Pre-Tx	55.06 (11.64)	59 (11.28)	.3	37	1.1
Family Income (below $60k)	31.30%	54.5%	.27	1, 36	1.22
Number of Sessions	20.69 (6.15)	21.91 (11.17)	.7	37	.16
Weeks in Treatment	30.38 (7.71)	32.05 (13.50)	.66	37	.2
Length of Session in Minutes	42.07 (8.82)	41.1 (6.34)	.7	37	.16
Number of Coded Sessions per Case	15.25 (5.98)	16.32 (8.71)	.68	37	.18

Note. CBCL = Child Behavior Checklist

Table 2

Clinician Descriptive Data and Group Comparisons: Modular vs. Standard

	Modular	Standard	*p*	*df*	*F*
Clinician (*n*)	10	16			
Age	35.2 (6.81)	43.56 (9.96)	.03	25	5.42
Sex			.94	1, 26	.01
Female	80%	81.2%			
Male	20%	18.8%			
Race/Ethnicity			.35	4, 24	4.46
White	40%	50%			
Black or African American	10%	18.8%			
Asian American	40%	12.5%			
Multiracial	–	6.3%			
Other	10%	–			
Degree Type			.87	3, 26	.7
MSW	50%	37.5%			
MA Psych	20%	31.3%			
PsyD/PhD	10%	6.3%			
Other	20%	25%			
License	60%	62.5%	.94	2, 26	.12
Years of Experience	5.25 (4.83)	7.17 (7.75)	.53	22	.4
Theoretical Orientation			.81	4, 26	1.59
CBT	40%	31.3%			
Psychodynamic	20%	25%			
Family Systems	–	6.3%			
Eclectic	40%	31.3%			
Other	–	6.3%			

Note. MSW = Master of Social Work; MA = Master of Arts; PsyD = Doctor of Psychology; PhD = Doctor of Philosophy.

Table 3

CBAY-C and G-COMP Item and Subscale Descriptive Data and Interrater Reliability

Item	N	Range	Minimum	Maximum	*M*	*SD*	Skewness	Kurtosis	ICC(2,2)
Psychoeducation	122	4.00	2.00	6.00	3.69	.79	.40	.11	.57
Emotion Education	77	5.00	2.00	7.00	4.18	1.02	.54	.49	.78
Fear Ladder	84	4.50	1.50	6.00	3.66	1.05	.24	−.77	.79
Relaxation	52	3.50	2.50	6.00	3.85	.82	.77	1.04	.62
Cognitive Anxiety	36	4.50	2.00	6.50	4.33	1.00	−.05	−.34	.68
Problem Solving	11	4.00	2.50	6.50	4.50	1.30	.00	−1.23	.67
Self-Reward	14	3.50	3.00	6.50	4.18	1.12	.77	−.52	.84
Coping Plan	99	4.50	2.00	6.50	4.03	.91	.44	−.10	.68
Exposure: Preparation	132	5.00	1.50	6.50	3.01	1.06	1.02	.47	.77
Exposure	120	4.50	2.00	6.50	3.18	.94	1.29	1.53	.57
Exposure: Debrief	85	4.50	2.00	6.50	3.32	1.07	.73	−.14	.72
CBAY-C Total	479	5.00	2.00	7.00	3.88	1.06	.37	−.34	.74
Alliance Building	603	5.50	1.50	7.00	4.29	.89	.30	.41	.64
Positive Expectancies	603	4.50	2.00	6.50	3.84	.88	.39	.08	.59
Focusing Treatment	603	4.50	2.00	6.50	3.68	.98	.38	−.46	.64
Instigating Change	603	5.50	1.50	7.00	3.67	1.00	.65	.16	.72
Responsiveness	603	5.50	1.50	7.00	4.03	1.02	.38	.34	.69

Note. CBAY-C = CBT for Anxiety in Youth Competence Scale; G-COMP = Global Therapist Competence Scale for Youth Psychosocial Treatment

Table 4

1 Correlations between Competence, Protocol Adherence, and Alliance Subscale Scores

	1	2	3	4	5	6	7	8	9
1. G-COMP 1	–	.72**	.43**	.69**	.87**	.63**	.19**	−.03	.55**
2. G-COMP 2		–	.58**	.75**	.68**	.67**	.30**	−.04	.46**
3. G-COMP 3			–	.78**	.43**	.78**	.49**	.10*	.32**
4. G-COMP 4				–	.71**	.86**	.45**	.01	.42**
5. G-COMP 5					–	.62**	.21**	−.01	.56**
6. CBAY-C Total						–	.53**	−.04	.35**
7. CBAY-A Skills							–	−.16**	.18**
8. CBAY-A Exposure								–	.11**
9. TPOCS-A									–

Note. G-COMP 1 = Alliance Building, G-COMP 2 = Positive Expectancies, G-COMP 3 = Focusing Treatment, G-COMP 4 = Instigating Change, G-COMP 5 = Responsiveness; Skills = Psychoeducation, Emotion Education, Fear Ladder, Relaxation, Cognitive Anxiety, Problem Solving, Self-Reward, Coping Plan. Exposure = Coping Plan, Exposure Prep, Exposure, Exposure Debrief.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).