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Meta-Analysis of Single-Case Evaluations of Child-Centered Play Therapy for Treating Mental Health Symptoms

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As the demand for childhood mental health intervention rises, there is a need for increased evidentiary support for developmentally sensitive approaches that address childhood mental health symptoms. Child-centered play therapy (CCPT) has been recognized as one of the most frequently used approaches for this population due to its responsiveness to cognitive and psychosocial developmental levels. A meta-analysis was conducted to evaluate the degree of effectiveness of CCPT for decreasing common childhood mental health symptoms based on single-case research design (SCRD) data. The systematic search strategy yielded 11 CCPT SCRD studies with 65 total effect sizes that were analyzed to determine omnibus treatment effect. Results indicated CCPT had a moderate effect for decreasing internalizing symptoms, externalizing symptoms, and social skill deficits. This study adds to the evidence base for CCPT incorporating SCRD data into the corpus of CCPT meta-analytic data and provides further support that CCPT should be considered an appropriate intervention to address common childhood mental health symptoms. Based on these results, the authors provide implications for CCPT practitioners and for future directions to build the intervention's evidence base.

Keywords: child-centered play therapy, childhood mental health, meta-analysis, single case research design

Research on human development has indicated that half of the individuals who develop mental health syndromes during their lifetime exhibit diagnosable symptoms before the age of 14 (Kessler et al., 2012; Paus, Keshavan, & Giedd, 2008). Currently, one third of the children with mental health diagnoses receive intervention, a ratio that is slowly increasing as population demands meet behavioral health workforce shortages and constricting consumer resources (Lin & Bratton, 2015). In some cases, developmentally appropriate interventions support adjustment that manifests across the life span through higher levels of confidence and competence, safety and security, love and respect, and experiences of caring and trusting relationships (Mental Health America, n.d.; Reynolds, Ou, Mondi, & Hayakawa, 2017). Yet in other instances, consumer needs are not met with best practices and result in deleterious effects that inhibit potential for a child's development and well-being (Modecki, Zimmer-Gembeck, & Guerra, 2017; O'Neal & Cotten, 2016). Therefore, counselors are called on to identify and implement developmentally sensitive interventions with potential to mitigate risk factors associated with the characteristics of mental health diagnoses.

If the symptoms associated with childhood mental health concerns remain unmitigated, harmful outcomes may persist into adolescence and adulthood. These outcomes include higher risk of suicide, incarceration, homelessness, and school drop-out (Carbonneau, Boivin, Brendgen, Nagin, & Tremblay, 2016; Mental Health

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America, n.d.; O'Neal & Cotten, 2016). Researchers have reported that adverse childhood experiences can perpetuate greater risk for developing health problems throughout their life span. Such results include heart and lung disease, an increased likelihood of substance use and addiction, and potentially higher rates of depression (Chapman et al., 2004; Dube et al., 2001, 2003, 2006; Dube, Anda, Felitti, Edwards, & Croft, 2002). If counselors are to address these issues, especially among younger children, they must use interventions, such as child-centered play therapy (CCPT), that are responsive to cognitive and psychosocial developmental levels.

Child-Centered Play Therapy

CCPT is an intervention created to respond to the developmental needs of children and has been recognized as one of the most popular therapeutic approaches for treating childhood mental health concerns (Ray, 2011). CCPT grew out of Axline's (1947) application of person-centered principles to play, based on the assumption that everyone has an internal desire to strive toward growth and healing within themselves. Early influencers in the modality believed that children were no different (Bratton, Ray, Edwards, & Landreth, 2009). If an environment can be created for children that facilitated their connection to this inherent growth process, children would naturally work toward growth, maturity, and healing. Because of a child's concrete view of the world, a child's ability to express complex thoughts and feelings through words is limited. Play has been identified as a natural part of a child's emotional, social, and cognitive growth (Piaget, 1962) and is therefore a more developmentally appropriate therapeutic modality for addressing childhood mental health issues when compared to traditional talk therapy modalities.

CCPT practitioners use a nondirective approach in which children can explore, make choices about their play, and express themselves freely. As the child engages in this type of play, they are able to integrate their internal emotion and insight with external experiences to move toward a healthy self-concept and self-actualization. To create this environment, counselors work under specific conditions. These conditions include the therapist's psychological contact with the child; the child's state of incongruence; the therapist's expression of congruence, unconditional positive regard, and empathic understanding; and the child's ability to receive empathy and unconditional positive regard. For CCPT, the primary technique is the use of the relationship formed between the therapist and child. Through this relationship, the therapist accepts the child in a way that creates permissiveness for the child to freely express their feelings and attitudes in a therapeutic structure of time and behavior maintained through the use of therapeutic limit setting. This structure allows the child to form insight and to integrate their internal and external experiences in a way that facilitates positive change (Ray, 2011).

There are currently 3,474 registered play therapists worldwide (A. Jarrell, personal communication, June 14, 2018). With CCPT identified as the most frequently used play therapy approach (Lin & Bratton, 2015), it is important to explore its evidentiary support. There have been two recent meta-analytic reviews of between-groups CCPT studies. Lin and Bratton (2015) conducted a meta-analytic review of CCPT studies implementing a control group or repeated-measure design. They found a medium treatment effect in which children with CCPT intervention performed one half of a standard deviation better on outcome measures than children who did not have treatment or who participated in an alternative treatment. When looking at moderator analyses, their findings suggested that CCPT intervention was most beneficial for children under the age of 7, children from non-Caucasian populations, and children with presenting issues such as broad-spectrum behavioral problems, self-esteem issues, and caregiver–child relationship stress. Ray, Armstrong, Balkin, and Jayne (2015) conducted a meta-analytic review of CCPT studies using experimental design in a school setting. They found statistically significant improvements between treatment and nontreatment groups. Their results also indicated that CCPT interventions yielded small effect sizes for internalizing outcomes, externalizing outcomes, total problem behaviors, self-efficacy, and academic outcomes. The results of these meta-analyses indicate that CCPT may be a beneficial therapeutic intervention for children. However, there is a need to better understand the nuance of these results on the individual

client level through the corpus of single-case research designs (SCRDs).

Single-Case Research Designs

Lenz (2015) identified SCRD analysis as an effective outcome research approach for the counseling and therapy fields due to their ability to facilitate causal inferences between interventions, such as CCPT, and outcomes of interest with smaller client populations. Researchers can use SCRDs to assess causal relationships based on a simple coding system in which *A* represents the baseline phase during which no intervention is provided, and *B* represents the treatment phase when an intervention such as CCPT is implemented. In this scenario, each letter represents a phase the researcher uses to establish a paradigm wherein each participant serves as their own experimental control by which comparisons/contrasts are made with the treatment phase. These A-B designs are the foundation for SCRD analysis, but many scholars do not consider them rigorous enough to establish strong evidentiary support. More rigorous designs within this modality include withdrawal designs and multiple baseline designs. Withdrawal designs might include *A-B-A* or *A-B-A-B* designs in which the intervention is withdrawn and potentially reintroduced, allowing for replication. Because withdrawal of an intervention is often inappropriate and/or unethical within our field, multiple baseline design is often the design of choice for counseling research because it provides *A-B* replication across participants, settings, or behaviors. Researchers can evaluate whether an intervention had its intended effect across multiple participants, establishing replication in a manner that does not necessitate withdrawing the intervention from participants who may need it (Ray, 2015).

SCRD evaluation is conducted using both visual and statistical analyses. Visual analysis is used to evaluate several variables: (a) the level or mean of each phase, (b) the trend or slope of each phase, (c) the variability or range of each phase, (d) the immediacy of the effect, (e) the rate of overlap between phases, and (f) the consistency of data across participants (Ray, 2015). Researchers embed this visual data within the unique experience of the individual participants to provide information about whether or not an intervention such as CCPT was effective, who it was effective for, and under what circumstances it was effective. Statistical analysis of SCRD data relies on estimations of treatment effect along with more traditional expressions of effect size. Measures of treatment effect tend to rely on proportions of treatment phase data that do not overlap with observations within the baseline phase. Examples of nonoverlap indices include (a) Percentage of Nonoverlapping Data (PND), (b) Percentage of Data Exceeding the Median (PEM), and (c) Nonoverlap of All Pairs (NAP). Selections of which nonoverlap method to use are based on the strengths and limitations of each approach in relation to best fit for the data (Vannest & Ninci, 2015). By contrast, effect sizes such as Tau-U reflect changes associated with interventions expressed in terms of magnitude and direction of effects and facilitate conclusions about the practical and clinical significance of their SCRD results.

Purpose of the Study and Research Questions

Although SCRDs of CCPT provide a helpful reference for practitioners, they are also limited to representing treatment effects to a particular time, place, and number of participants. Furthermore, previous meta-analyses of CCPT have been completed with between-groups designs whose findings tend to be limited to estimations of magnitude and direction of treatment effect. The purpose of this study was to address limitations of previous literature reporting outcomes of CCPT using primary research and meta-analytic methods to provide additional representation and inclusion of SCRD participants within an omnibus synthesis of CCPT studies. Therefore, our inquiry was guided by the following research questions: (a) What are the characteristics and methodological quality ratings for SCRDs evaluating CCPT? (b) What are omnibus estimates of nonoverlap and effect size for CCPT? and (c) What are the moderating effects of study and participant characteristics on magnitude of effect size?

Method

We implemented systematic search and coding strategies to identify and include published

and unpublished SCRDs estimating the efficacy of CCPT as a viable intervention among children. The data from eligible studies were collated, coded, and quantitatively synthesized using meta-analytic procedures that accounted for nonparametric characteristics and trend within baseline data to provide an omnibus estimation of CCPT effectiveness.

Inclusion and Exclusion Criteria

Inclusion of studies within our analyses was dependent on the following criteria: (a) Single-case research designs were implemented as defined by Lenz (2015) and Ray (2015), (b) CCPT was delivered to children or adolescents by trained mental health service providers (c) interventions were intended to mitigate the severity of mental health symptoms or developmental impairment, (d) researchers evaluated CCPT outcomes using standardized assessments during baseline and treatment phases, (e) studies included data for the computation of Tau-U effect size, (f) studies were published in peer-reviewed journals, dissertations, or theses, and (g) studies were published in English. Studies were excluded if they reported play-based interventions not identified as CCPT, interventions occurring outside of the context of mental health and developmental supports, implemented noneligible designs (quasi-experiments, single-group studies, time series, pre-experimental designs, correlational studies, qualitative studies), did not assess outcomes using a baseline phase, or reported previously published data.

Systematic Search Strategy

We implemented four search strategies to identify all eligible studies: (a) electronic database searches, (b) journal-specific searches, (c) reviewing of reference lists of eligible studies, and (d) expert consultation. We independently searched PsycINFO, Academic Search Complete, ProQuest Dissertations and Theses, and Google Scholar databases within a 30-year timeframe ranging from 1988 to 2017. The keyword phrases "Child-Centered Play" OR "CCPT" were used to identify the intervention and "Single-Subject" OR "Single-Case" were used to target the research design. We reviewed reference lists of eligible studies to detect any further studies for inclusion. All articles, dissertations, and theses of interest underwent title and abstract review by both authors. Once an initial corpus of eligible studies was developed, the related reference list was sent to the Director of the Center for Play Therapy at the University of North Texas for cross-reference with their repository of SCRD outcome research studies. Documents that met inclusion criteria were obtained and saved in hypertext markup language (HTML) or portable document format (PDF) files and pooled using online document management software.

Data Extraction and Coding Procedures

Data from eligible documents were coded to represent bibliographic information, study quality, treatment effect, and moderator data. Extraction of related data was completed by both authors during a series of conjoint meetings.

Study quality. Study quality was estimated using the protocol depicted by Maggin, Briesch, and Chafouleas (2013), which implements strategies based on the What Works Clearinghouse Standards for Single-Case Designs (Kratochwill et al., 2010). The Maggin et al. protocol is based on seven general criteria with the first five domains (manipulation of IV, repeated measurement of DV, sufficient interrater auditing, 80% interrater agreement, minimum of three attempts to demonstrate effect) receiving dichotomous (yes/no) responses and the final two items (minimum data per phase and design standard) being represented across three categories of determination (Meets Standard, Meets Standard With Reservations, and Does Not Meet Standard). These evaluations resulted in potential quality ratings ranging from 0 to 9, with higher scores representing greater study quality.

Data associated with treatment effect. Outcome data were coded as AB phase contrasts. In instances when data were only presented in graphs, images were digitally magnified and values estimated through a collaborative identification process until a consensus was established. All data were entered into a data management software program and categorized across four general domains: (a) externalizing behaviors, (b) internalizing behaviors, (c) social skills, and (d) self-regulation skills. These categories were selected to promote comparisons of results with previous between-groups meta-analyses available in the CCPT literature (Lin & Bratton, 2015; Ray et al., 2015).

Moderator data. We developed a theory of variables that may be associated with heterogeneous samples of effect sizes that was grounded in previous literature and assumptions inherent within the CCPT framework. We included two categories of variables related to design features (Number of Sessions, Treatment Setting [school or community-based]) and participant characteristics (age of participants, participant gender) in our coding database.

Reliability of data coding. The second author trained the first author in data extraction and coding procedures using manualized strategy. Three articles were used as pilot articles to bring data extraction and coding practices to 100% concurrence. All articles were concurrently coded and any discrepancies were discussed and negotiated between the two authors to arrive at consensus.

Data Analyses

Estimating omnibus nonoverlap. Percentage of data points exceeding the median (PEM) was computed for each individual AB phase contrast using the procedures described by Ma (2006). We selected this method in favor of other nonoverlap strategies based on the ability for analyses to control for the influence of outliers within the baseline phase (Lenz, 2013). PEM for individual participants was computed by identifying the median datum point within the baseline phase. Next, the number of data points within the treatment phase exceeding the baseline median on the therapeutic side was counted. Then, the number of therapeutic data points was divided by the total number of data points in the treatment phase. The resulting quotient was multiplied by 100 to represent the percentage of intervention phase observations that were associated with the therapeutic range of response. Omnibus PEM (PEM_O) was computed as the average of all individual PEM values (PEM_O = Sum(PEM)/N). PEM values were interpreted using the criteria proposed by Scruggs and Mastropieri (1998) as ineffective (less than 50%), debatable (50%–70%), effective (70%–90%), or very effective (greater than 90%).

Estimating omnibus treatment effect size. Tau-U effect sizes (Parker, Vannest, Davis, & Sauber, 2011) were estimated for AB phase contrasts by entering baseline and intervention data into the online Tau-U calculator (Vannest, Parker, Gonen, & Adiguzel, 2016) available at singlecaseresearch.org. Tau-U represents treatment effect as percentage of overlap and nonoverlap with baseline data. Vannest and Ninci (2015) suggested that the strengths of the Tau-U approach are the researchers' ability to control for the baseline trend, handle small data sets, discriminate at upper and lower limits of the ratio, and determine strong correlation with other indices. Tau-U outputs range from 0 to 1, provide confidence intervals, and yield a p value associated with the null hypothesis related to treatment effect. Combination of Tau-U values uses an inverse variance weighting procedure to control for the influence of smaller, less stable data sets on the values of omnibus Tau-U ($Tau\text{-}U_O$). Tau-U and $Tau\text{-}U_O$ values were interpreted based on the guidelines offered by Vannest and Ninci (2015) as small (.20), moderate (.20–.60), large (.60–.80), or very large (greater than .90).

Estimating publication bias. We estimated publication bias using three strategies. First, we examined symmetry of funnel plots depicting study effect sizes and related standard errors as Cartesian coordinates. Then, we interpreted Rosenthal's fail-safe N (N_f), which suggested the number of unpublished studies reporting null results needed to regard our detected $Tau\text{-}U_O$ as nonsignificant.

Results

Characteristics of Studies and Methodological Quality

Our search resulted in 21 studies that met criteria for eligibility. After applying the inclusion/exclusion criteria to these studies, 11 publications remained for analysis (see Figure 1, Table 1). There were 43 total participants and 65 total effect sizes across the included studies. Participants were girls (n = 16; 37.2%) and boys (n = 27; 62.7%) between the ages of 3 and 10 years old. Symptom domains in the included publications in decreasing order of effect size frequency were externalizing symptoms (j = 8; k = 31; n = 31), internalizing symptoms (j = 2; k = 14; n = 14), social skills (j = 3; k = 11; n = 11), and self-regulation skills (j = 2; k = 9; n = 9). Studies were conducted in both clinic (j = 2; 18.18%) and school settings (j = 9; 81.81%), with session numbers ranging from 8 to 22.

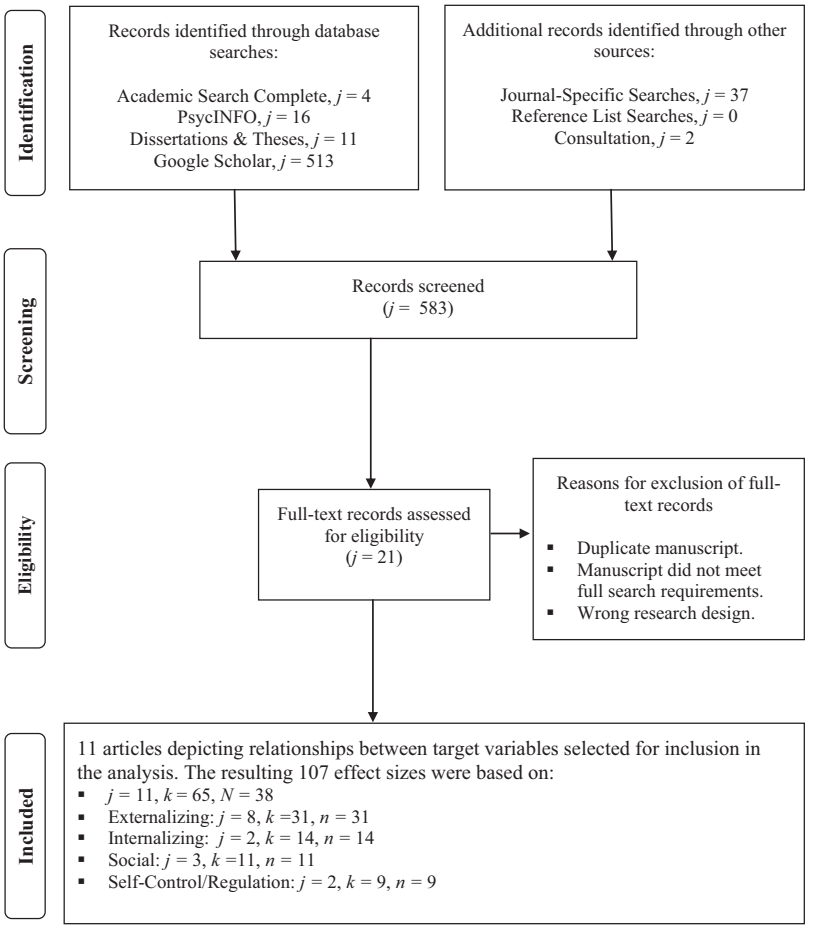

Figure 1. Flow diagram of systematic search strategy.

The methodological quality of the studies based on the Maggin et al. (2013) protocol ranged from 1 to 7, with an average rating of 3.81. Overall, the majority of studies met criteria in the first four domains: (a) manipulation of the IV, (b) repeated measurement of the DV, (c) sufficient interrater auditing, and (d) 80% interrater agreement. Only 4 out of the 11 studies met criteria for the fifth domain (using three attempts to demonstrate effect). The studies that met criteria in this domain implemented a multiple baseline design that Maggin et al. indicated as an appropriate study design to meet evidence standards. Studies that implemented AB, ABA, ABCA, or ACBA designs did not meet evidence standards. The last two items (*minimum data per phase* and *design standard*) were scored across three categories ranging from 0 to 2. The *minimum data per phase* domain had the lowest scores out of all of the domains. The majority of the studies earned a rating of 0 ($j = 8$), with only three studies earning a rating of 1. This domain required that ABAB designs establish four phases per case with 5 data points each and that multiple baseline designs establish six phases with at least 5 data points per phase. The majority of the studies in this analysis did not meet the phase threshold. The last domain measured the overall *design standard* of the studies. The majority of the studies ($j = 6$) received a rating of 1, indicating the study met design standards with reservations.

Table 1
Characteristics of Individual Studies Used in Meta-Analysis

Study	*N*	Age	Participant characteristics	Outcome assessment	Type of comparison	rating
Balch & Ray (2015)	5	6–8	Children (2 girls, 3 boys) with autism spectrum disorder receiving treatment at an autism clinic and speech and hearing clinic. Participants included three Caucasian children, one Latino child, and one African American child.	SEARS	Multiple baseline	4
Garofano-Brown (2007)	3	3–5	Children (1 girl, 2 boys) who performed at least 6 months below chronological age on the Gesell Developmental Observation receiving treatment at a clinic. Participants included one Caucasian child and two children whose ethnicity was not reported.	DAYC	ABA	2
Hall (2015)	3	8–9	Children (1 girl, 2 boys) who were identified as having a learning disability receiving treatment at their school. Participants included two African American children and one Caucasian child.	SSRS	Multiple baseline	6
Montemayor (2014)	12	3–6	Children (6 girls, 6 boys) who were identified as having behavioral difficulties in the classroom receiving treatment at their school. Participants included nine Hispanic children, two bi-racial children, and one Caucasian child.	C-TRF	ABA	1
Phipps (2017)	2	3	Students (2 boys) with the highest C-TRF scores were chosen for participation receiving treatment at their school. Participants included two Caucasian students.	C-TRF	Multiple baseline	6
Schottelkorb & Ray (2009)	4	5–10	Children (4 boys) who had borderline or clinical scores on the ADHD subscale of the TRF and borderline or clinical scores on the ADHD Index score of the CTRS-R:S receiving treatment at their school. Participants included two Caucasian students, one Brazilian-American student, and one Hispanic student.	DOF	ABCA, ACBA	7
Swan & Ray (2014)	2	6–7	Children (1 girl, 1 boy) who had borderline or clinical scores on the Hyperactivity and Irritability subscales of the ABC receiving treatment at treatment at their school. Participants included one Caucasian student and one Mexican-American student.	ABC	ABA	2
Wixson (2014)	3	5–6	Children (2 girls, 1 boy) who were referred for the study by the school counselor based on exhibiting challenging behaviors receiving treatment at their school. Participants included one Caucasian student, one African American student, and one Hispanic student.	BOSS	Multiple baseline	6
Robinson, Simpson, & Hott (2017)	3	6	Children (3 Hispanic boys) who were diagnosed with ADHD receiving treatment at their school.	DOF	ABA	3
Schottelkorb, Swan, Jahn, Haas, and Hacker (2015)	2	4	Children (1 girl, 1 boy) with symptoms of somatization receiving treatment at their school. Participants included two Caucasian students.	SOS	AB	1
Swank, Shin, Cabrita, Cheung, and Rivers (2015)	4	6–8	Children (2 girls, 2 boys) who were exhibiting behavioral problems receiving treatment at their school. Participants were African American.	DOF	ABA	4

Note. ABC = Aberrant Behavior Checklist; BOSS = Behavioral observation of students in schools; C-TRF = Caregiver-Teacher Report Form; DAYC = Developmental assessment of young children; DOF = Direct Observation Form; SEARS = Social Emotional Assets and Resilience Scales; SOS = Student observation system; SSRS = Social skills rating system.

Estimates of Omnibus Non-Overlap and Treatment Effect Size

Externalizing symptoms. The 31 effect sizes across nine studies (Montemayor, 2014; Phipps, 2017; Robinson, Simpson, & Hott, 2017; Schottelkorb & Ray, 2009; Schottelkorb, Swan, Jahn, Haas, & Hacker, 2015; Swan & Ray, 2014; Swank, Shin, Cabrita, Cheung, & Rivers, 2015; Wixson, 2014) included in the analysis of CCPT for reducing externalizing symptoms yielded an omnibus Tau-U effect size of .43 (95% CI = .28, .56), $p < .01$, indicative of a moderate effect size and suggesting that the null hypothesis related to therapeutic superiority of CCPT when compared to no treatment can be rejected. Convergent evidence was detected through inspection of an omnibus PEM estimate of 67%, which is within the debatable range of nonoverlap associated desired treatment response. The distribution of Tau-Uo effect sizes was homogeneous, $Q(30) = 31.52$, $p = .39$ and $I^2 = 4.85$, indicating that about 5% of the observed variance reflects actual differences in effect sizes; thus, exploration of moderating variables was not warranted.

Examination of the funnel plot for externalizing symptoms indicated potential for publication bias related to the underreporting of studies with larger effects. Trim and fill procedures indicated that 10 studies may be missing from the right (therapeutic side) of the mean effect, which may increase our observed value if located. However, our observed *N*f of 412 indicated that 412 effect sizes with null findings would need to be identified to bring our results to statistical nonsignificance.

Internalizing symptoms. The 14 effect sizes across two studies (Montemayor, 2014; Robinson et al., 2017) included in the analysis of CCPT for reducing internalizing symptoms yielded an omnibus Tau-U effect size of .51 (95% CI = .26, .75), $p < .01$, indicative of a moderate effect size and suggesting that the null hypothesis related to therapeutic superiority of CCPT when compared to no treatment can be rejected. Convergent evidence was detected through inspection of an omnibus PEM estimate of 71%, which is within the effective range of nonoverlap associated desired treatment response. The distribution of Tau-Uo effect sizes was homogeneous $Q(13) = 9.69$, $p = .71$ and $I^2 = 0$, indicating that about all of the observed differences in effect sizes may reflect actual differences; thus, exploration of moderating variables was not warranted.

Examination of the funnel plot for internalizing symptoms indicated minor potential for publication bias related to the underreporting of studies with smaller effects. Trim and fill procedures indicated that one study may be missing from the left (nontherapeutic side) of the mean effect, which may slightly decrease our observed value if located. Our observed *N*f of 57 indicated that 57 effect sizes with null findings would need to be identified to bring our results to statistical nonsignificance.

Social skills. The nine effect sizes across three studies (Balch & Ray, 2015; Garofano-Brown, 2007; Hall, 2015) included in the analysis of CCPT for improving social skills yielded an omnibus Tau-U effect size of .33 (95% CI = .14, .50), $p < .01$, indicative of a moderate effect size and suggesting that the null hypothesis related to therapeutic superiority of CCPT when compared to no treatment can be rejected. Convergent evidence was detected through inspection of an omnibus PEM estimate of 57%, which is within the debatable range of nonoverlap associated desired treatment response. The distribution of Tau-Uo effect sizes was homogeneous $Q(8) = 6.53$, $p = .58$ and $I^2 = 0$, indicating that about all of the observed differences in effect sizes may reflect actual differences; thus, exploration of moderating variables was not warranted.

Examination of the funnel plot for social skills indicated symmetrical distribution of effect sizes on either side of the mean effect. Trim and fill procedures confirmed this observation and indicated that no studies may be missing from either side of the mean effect. Our observed *N*f of 16 indicated that 16 effect sizes with null findings would need to be identified to bring our results to statistical nonsignificance.

Self-control and self-regulation. The 11 effect sizes across two studies (Balch & Ray, 2015; Swank et al., 2015) included in the analysis of CCPT for reducing internalizing symptoms yielded an omnibus Tau-U effect size of 0 (95% CI = 0, .25), $p = .95$, indicative of a less than small effect size and suggesting that the null hypothesis related to therapeutic superiority of CCPT when compared to no treatment cannot be rejected. Convergent evidence was detected through inspection of an omnibus PEM

estimate of 38%, which is within the ineffective range of nonoverlap associated desired treatment response. The distribution of Tau-Uo effect sizes was homogeneous $Q(7) = 7.04$, $p = .72$ and $I^2 = 0$, indicating that about all of the observed differences in effect sizes may reflect actual differences; thus, exploration of moderating variables was not warranted.

Examination of the funnel plot for self-control and self-regulation indicated symmetrical distribution of effect sizes on either side of the mean effect. Trim and fill procedures suggested that one study may be missing on the right (therapeutic side) of the mean effect. Findings for this value were not statistically significant.

Discussion

The results of this meta-analysis continue to build the case for CCPT as a viable treatment for childhood mental health symptoms, while also illuminating the need for increased rigor and variability of CCPT SCRD data. Although 6 out of the 11 included studies met design standards with reservation, the overall mean rating was only 3.81. This can be easily remedied if researchers conducting SCRD research utilized more rigorous SCRD designs (e.g., multiple baseline) and increased the number of phase contrasts to meet the phase thresholds.

When examining the treatment effect of the CCPT intervention, internalizing symptoms, externalizing symptoms, and social skill deficits all had statistically significant results with moderate effect sizes when compared to nontreatment. For internalizing and externalizing symptoms, children who received the CCPT intervention improved by almost one half of a standard deviation on average by the end of treatment. Similarly, children with social skill deficits improved by one third of a standard of deviation on average by the end of the CCPT intervention. These results indicate that CCPT is an effective treatment for the symptom domains of internalizing, externalizing, and social skills. Results for the self-regulation symptom domain suggested that CCPT had little to no effect on symptom reduction compared to nontreatment. Therefore, CCPT practitioners should use caution when using the intervention for this symptom domain as it may not be the most effective form of treatment for addressing self-regulation deficits.

The moderating effects of client age, gender, treatment setting, and total session number are often highlighted in discussions of CCPT. Our results indicated that the sample of effect sizes for CCPT versus baseline were homogeneous, thus suggesting that these participant and study characteristics did not introduce meaningful amounts of random error into the analyses. Therefore, the homogenous distribution of effect sizes across symptom domains indicated that any existing differences were representative of true differences and not a result of any of the above factors. This suggests that the estimates of CCPT effects were reasonably accurate across our representative population—boys and girls between 3 and 10 years of age receiving services in both clinic and school-based settings for 8 to 22 treatment sessions.

The two previous meta-analyses on CCPT did not address gender differences in treatment outcomes. Our results address this gap by providing evidence that CCPT is equally effective for both boys and girls. Additionally, Lin and Bratton (2015) found in their meta-analysis of between-group studies that CCPT was more effective for children 7 years old and younger. Our results run contradictory in that they indicate CCPT demonstrated equivalent effect across our age range of 3 to 10 years old. When looking at treatment setting, it is important to take into consideration that only two of our studies were conducted in clinic-based settings, making this evidence strongest for school-based intervention. The trend of available SCRD data for CCPT seems to run contrary to the clinical norm for the modality, where it is typically implemented at the highest rate in clinic-based settings or private practices rather than school-based settings. Because of this, further exploration is warranted to evaluate whether there truly is no difference in effect sizes between settings when more data is available from clinic-based settings. Last, our data provide important information about the number of CCPT sessions that are needed for the treatment to be effective. Typically, CCPT practitioners expect to conduct between 18 and 20 sessions for effective treatment. Our results indicate that effective treatment can include as few as 8 total sessions. Taken together, these results can have important

implications for the future directions of the CCPT modality.

Implications for CCPT Practitioners

The results of this meta-analysis provide evidence for CCPT to be used among a broad range of clients, settings, and presenting issues and warrant that it be considered an evidence-based practice for addressing childhood mental illness. Evidence supports its use across gender and age differentials. It also supports its use across school and clinic-based settings. Ray et al. (2015) in their meta-analysis on CCPT in school settings found that the intervention resulted in significantly different results than non-intervention. Our evidence builds on this foundation of support and provides additional evidence for the effectiveness of CCPT interventions in the school setting based on SCRD data. Taken together, this evidence base creates a strong argument for counseling professionals to leverage in their advocacy with school districts for the implementation of CCPT to address the mental health needs of the school-age children in their care.

To further build the case for the effective use of CCPT in clinic-based settings, clinicians using this modality must begin to take a more active role in monitoring the outcomes of their interventions over time. This active role as a practitioner scholar would allow the practice-based evidence for CCPT to expand, providing a more robust picture of effective CCPT intervention. CCPT practitioners observe the treatment effect of their interventions on a daily basis. For outcome research to reflect the reality of these daily experiences, practitioners must capture their outcomes through research activities that serve to expand the corpus of evidence for CCPT clinical practice. Practitioners conduct informal research on a daily basis—assessing client presenting problems, making hypotheses about treatment options, implementing these treatment options, assessing the outcomes of the treatment, and making adjustments to the treatment as determined by their therapeutic judgment. If practitioners could formalize these informal research activities, they could make a valuable contribution to the CCPT evidence base. Their continuous exposure to treatment intervention and outcomes is a commoditiy that most academics who conduct outcome research activities do not have. Thus, stronger relationships between practitioners and researchers are necessary for increasing the amount of quality outcome research on CCPT. Partnerships of this nature will help increase the rigor of CCPT outcome research and will create a more complete picture of effective CCPT intervention. This engagement in the practitioner–scholar identity is needed within the CCPT community to create outcome research that is rigorous and that more accurately portrays what practitioners know to be true about CCPT outcomes based on their regular interaction with the intervention and its impact on client well-being.

CCPT has the reputation of requiring a high number of sessions and high client commitment to treatment. Ray (2011) identified 15 to 20 sessions as the necessary number of sessions to see significant change in the client. Because of this high number, practitioners can face issues with client attrition. This can make CCPT inaccessible, unaffordable, and even unrealistic for clients with whom the modality would otherwise provide a good fit for their mental health needs. The data from our study has implications that address some of these traditional barriers to care. For example, our data indicate that CCPT can be effective in as few as eight sessions and that a lower number of treatment sessions does not have to mean decreased treatment outcomes. This suggests that a higher number of sessions provided in a CCPT intervention may not be as significant as previously thought. If CCPT can be just as effective in 8 sessions as 22, this has the potential to create easier access for children needing services and can make those services more realistic to be carried through to termination. Furthermore, it could also mean easier implementation of a CCPT protocol across different treatment settings that have traditionally been set up for short-term interventions, such as the school setting. Because the majority of children first access mental health services through their school environment (Foster, Rollefson, Doksum, Noonan, & Robinson, 2005; Rones & Hoagwood, 2000), implementing access to CCPT intervention in a higher number of schools has the potential to make a significant impact on the overall levels of childhood wellness.

Limitations of Present Study and Recommendations for Future Research

Although this study offers new insight about the effectiveness of CCPT based on available SCRD data, it is not without limitation. First, we were limited by the number of SCRD studies that were available to be included in our analysis. Out of the 583 articles that were scanned, only 11 met inclusion criteria creating a limited data set and a limited number of effect sizes to work with. Further research is needed in both school and clinic-based settings to increase the amount of available data. With the availability of more effect sizes and more completed SCRD studies on CCPT, we can move toward more precise results that represent a more diverse participant pool. An increase in SCRD data for CCPT would also mean that we would have more statistical power to be able to run moderator analyses and better understand the nuances of the treatment. A second limitation is found in our use of a parametric model for nonparametric data. Because of the current state of the research, we do not have a good fit for analyzing *Q*-tests with nonparametric data. This issue illuminates a gap in current SCRD research. Future research is indicated to develop a process to better examine nonparametric data. Third, our findings are limited to the CCPT modality. Future research should endeavor to look beyond this modality to analyze omnibus estimates for other play therapy approaches so that comparisons can be made between treatment approaches. This would allow the counseling field to establish a stronger evidence base for play therapy overall.

Conclusion

As counselors step up to the task of identifying and implementing developmentally sensitive interventions that can mitigate risk factors associated with childhood mental health diagnoses, CCPT should be considered an appropriate intervention for internalizing symptoms, externalizing symptoms, and social skill development. This study adds to the evidence base for CCPT incorporating SCRD data into the corpus of CCPT meta-analytic data. As the research on this modality continues to expand, we will be able to provide a better intervention that is both evidence based and practice based to support childhood adjustment.

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