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A Meta-Analytic Review of Child-Centered Play Therapy Approaches

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The authors explored the overall effectiveness of child-centered play therapy (CCPT) approaches through a meta-analytic review of 52 controlled outcome studies between 1995 and 2010. Hierarchical linear modeling techniques estimated a statistically significant moderate treatment effect size (.47) for CCPT, as well as statistically significant relationships between effect size and study characteristics, including child's age, child's ethnicity, caregiver involvement, treatment integrity, publication status, and presenting issue.

Keywords: meta-analysis, play therapy, child-centered play therapy, controlled outcome studies

The number of young children in the United States with significant emotional and behavioral concerns is increasing at an alarming rate. According to Mental Health America (MHA, n.d.), approximately 20% of children develop mental health problems severe enough to meet diagnostic criteria, but less than one third of them receive help. This gap in services is partly the result of a lack of widely available counseling interventions that have been proven responsive to the developmental needs of young children (President's New Freedom Commission on Mental Health, 2003; U.S. Public Health Service, 2000).

Play therapy is an empirically supported counseling intervention (Bratton, Ray, Rhine, & Jones, 2005) that is grounded in child development principles, including the essential role of play in children's holistic development (Russ, 2003; Vygotsky, 1967). From a maturational perspective, young children tend to possess concrete views of the world and thus are limited in their ability to express complex thoughts and feelings through words alone (Piaget, 1951). Play therapy provides children with a nonverbal and universal means of expression that allows them to bridge the gap between concrete and abstract thought (Landreth, 2012).

According to a survey of members of the American Counseling Association and the Association for Play Therapy, child-centered play therapy (CCPT) was the most frequently used approach among counselors who use play therapy and adhere to a specific theoretical approach (Lambert et al., 2005). Based on Carl Rogers's (1951) person-centered theory, CCPT is differentiated from other theoretical models by the steadfast belief in children's inherent striving toward growth and maturity, in addition to their capacity for self-directed healing. Virginia Axline (1947) first applied person-centered principles to counseling with children and named her approach nondirective play therapy. Other pioneers in the field of child counseling, including Clark Moustakas (1951), Louise Guerney (2001), and Garry Landreth (2012), continued to develop and popularize the approach, now commonly referred to in North America as CCPT. The development of filial therapy (B. Guerney, 1964) and, later, child–parent relationship therapy (CPRT; Landreth & Bratton, 2006) expanded the practice of CCPT by training and directly supervising parents in using CCPT procedures with their children.

Research Support for CCPT

Counseling professionals are ethically responsible for providing interventions based on empirical evidence (American Counseling Association, 2014). With studies dating back to the early 1940s, CCPT has one of the longest histories of intervention research in the field of child counseling (Baggerly, Ray, & Bratton, 2010). In intervention research, the statistically significant superiority of the experimental condition in comparison with a no-treatment, alternative-treatment, or placebo condition is considered an important criterion for evidence of treatment effect (Nezu & Nezu, 2008). A review of the CCPT literature found approximately 110 outcome studies from 1953 to 2010 meeting the aforementioned criterion. The vast majority of individual findings showed that CCPT approaches were statistically significantly superior to no treatment (Bratton, Landreth, & Lin, 2010; Bratton &

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Ray, 2000; Ray & Bratton, 2010). As is typical of research in counseling and the broader mental health field, most studies were hindered by small sample sizes, which limit statistical power to validate results as well as the ability to generalize findings. Meta-analytic methodology, through statistically combining research findings across studies, computing an overall treatment effect size, and analyzing study characteristics, may provide precious information that is unable to be generalized by individual studies (Lipsey & Wilson, 2001; Whiston & Li, 2011).

Meta-Analyses in Child Counseling

Meta-analysis is a quantitative and systematic method of integrating research findings from a collection of quantitative studies (Glass, 1976). A comprehensive review of the literature revealed several meta-analytic reviews of child-counseling interventions, including studies that analyzed overall treatment effects and other studies that examined specific intervention effects on a single presenting issue. To compare findings from the present study regarding the overall effectiveness of CCPT, we limited our review to similar meta-analyses that examined the overall treatment effects of child interventions. Results and summary information of these reviews are shown in Table 1. Casey and Berman (1985); Kazdin, Bass, Ayers, and Rodgers (1990); Weisz, Weiss, Alicke, and Klotz (1987); and Weisz, Weiss, Han, Granger, and Morton (1995) published their meta-analyses using data from the studies of child counseling from 1953 to 1993, with overall average effect sizes ranging from .54 to .84. Bratton et al. (2005) and LeBlanc and Ritchie (2001) are the only two meta-analytic reviews to date that focus exclusively on play therapy studies from 1942 to 2000. The overall average effect sizes they found were .66 (LeBlanc & Ritchie, 2001) and .80 (Bratton et al., 2005). Recently, two meta-analyses (Huey & Polo, 2008; Reese, Prout, Zirkelback, & Anderson, 2010), based on studies dated from 1976 to 2008, revealed moderate overall treatment effects for child counseling (both average effect sizes = .44).

Government reports over the past decade identified the critical need to identify empirically based interventions for young children (President's New Freedom Commission on Mental Health, 2003; U.S. Public Health Service, 2000). CCPT is a developmentally responsive intervention that is popular among child-counseling practitioners (Lambert et al., 2005), with a long history of research (Landreth, 2012). Despite the history of examining the effectiveness of CCPT, small samples in most individual outcome studies limit the generalization of findings. Furthermore, early CCPT research efforts, although important in advancing the field of play therapy, do not meet the more rigorous methodological standards applied in current research. The purpose of this study was to conduct a contemporary meta-analytic review of controlled outcome studies in CCPT from 1995 to 2010. Specifically, this study addressed two pri-

TABLE 1

Meta-Analytic Studies on the Effects of Child Counseling

Study and Publication Status	No. of *ESs*	*ES* Formula	Treatment Model	Control Type	Statistical Model	*M* Age	Ave. *ES*
Casey & Berman (1985; $N = 75$)[a]							
Published studies only	64[b]	$(m_e - m_c)/Sp_{post}$	Behavioral and nonbehavioral	NTC/AC	ULS	8.9	.71
Weisz et al. (1987; $N = 108$)							
Published studies only	163[c]	$(m_e - m_c)/SD_{post\_c}$	Majority behavioral	NTC/AC	ULS	10.2	.79
Kazdin et al. (1990; $N = 223$)[d]							
Published studies only		$(m_e - m_c)/Sp_{post}$	Majority behavioral	NTC/AC/Com	ULS	10.2	.84
Weisz et al. (1995; $N = 150$)							
Published studies only	150[b]	$(m_e - m_c)/SD_{post\_c}$	Majority behavioral	NTC/AC	WLS	10.5	.54
LeBlanc & Ritchie (2001; $N = 42$)							
Published and unpublished studies	166[e]	$(m_e - m_c)/Sp_{post}$	Play therapy (majority nondirective)	NTC	WHLM	7.8	.66
Bratton et al. (2005; $N = 93$)							
Published and unpublished studies	93[b]	$(m_e - m_c)/Sp_{post}$	Play therapy (majority humanistic)	NTC/AC/Com	WMLR	7.0	.80
Huey & Polo (2008; $N = 25$)							
Published studies only	25[b]	$(m_e - m_c)/Sp_{post}$	Mixed	NTC/AC/TAU	WLS	N/A	.44
Reese et al. (2010; $N = 65$)							
Dissertation and theses only	73[c]	$(m_e - m_c)/SD_{pre\_c}$	Cognitive-behavioral and skills training	NTC/Com	Unweighted	N/A	.44
Present study ($N = 52$)							
Published and unpublished studies	239[e]	$(\Delta_e - \Delta_c)/Sp_{pre}$	Child-centered play therapy	NTC/AC/Com	WHLM	6.7	.47

Note. Ave. = average; *ES* = effect size; m_e = the mean score of experimental group at posttest; m_c = the mean score of control group at posttest; Sp_{post} = the pooled standard deviation of posttest; NTC = no treatment control; AC = active control; ULS = unweighted least square method; SD_{post_c} = posttest standard deviation of control group; Com = comparison of control; WLS = weighted least square method; WHLM = weighted hierarchical linear model; WMLR = weighted multiple linear model; TAU = treatment as usual; N/A = study failed to report specific information; SD_{pre_c} = the pretest standard deviation of control group; Δ_e = the mean change of experimental group from pretest to posttest; Δ_c = the mean change of control group from pretest to posttest; Sp_{pre} = the pooled standard deviation of pretest.

[a]Casey & Berman (1985) reported an overall *ES* for 64 of the 75 collected studies. [b]One average *ES* per study. [c]One average *ES* per treatment condition. [d]Kazdin et al. (1990) did not report an overall *ES*, but Weisz et al. (1995) estimated an overall *ES* of .84 for them. [e]Multiple *ES*s per study.

mary research questions: (a) What is the overall effectiveness of CCPT? and (b) What, if any, relationships exist between CCPT's effectiveness and study variables?

Method

Selection of Studies

One of the major criticisms of meta-analyses is that the results might be based on a biased collection of studies, specifically the practice of including only published studies (Rothstein, 2007). To address this concern, we used a combination of online and offline search procedures to exhaust all resources in locating controlled, outcome research studies from peer-reviewed publications, non-peer-reviewed publications, and unpublished research between 1995 and 2010. Electronic sources included Biosis Previews, Cambridge Scientific Abstracts, Dissertation Abstracts, Electronic Collections Online, Education Research Complete, Education Resources Information Center, Family and Society Studies Worldwide, Guilford Publications, MEDLINE, Professional Development Collection, PsycARTICLES, Psychology and Behavioral Sciences Collection, PsycInfo, Sage Journals Online, Social Work Abstracts, SpringerLink, Web of Science, and Wiley Journals Online. Keywords for searching studies in the online databases included *child-centered play therapy, nondirective play therapy, person-centered play therapy, humanistic play therapy, filial therapy,* and combinations of the aforementioned terms. For the offline search, we reviewed the publications and their bibliographies collected in the Garry Landreth Play Therapy Research Library at the University of North Texas to obtain additional unpublished studies. In addition, we contacted noted scholars and researchers in relevant fields for eligible and unpublished manuscripts.

The initial study pool included 61 studies that appeared to meet the following criteria: (a) the use of CCPT or nondirective play therapy methods in the treatment, (b) the use of control or comparison repeated-measure design, (c) the use of quantitative psychometric assessment, and (d) clear reporting of effect size or sufficient information for calculating effect size. In addition, only studies written in English were reviewed.

Five doctoral research assistants with advanced training in play therapy, research methods, and assessment reviewed and examined the full text of each study in the initial pool. A coding manual was developed to ensure the consistency and accuracy of coding (Whiston & Li, 2011). Prior to the study, we conducted four intensive training sessions to ensure the research assistants' coding competency and the reliability of coding procedures. We preselected and coded sample studies to use for practice. Before each training session, the five research assistants blind-coded the same two studies using the coder manual as a guide. During the training meetings, we first recorded raters' individual codes for each study for the purpose of calculating intercoder and interrater reliability, followed by research assistants discussing their coding results until a consensus was reached. The intercoder agreement percentages for the four trial codings were 88.4%, 92.0%, 95.5%, and 100%. We also calculated multirater kappa coefficients (Randolph, 2008) for the four trials: .88, .91, .95, and .99, respectively.

Following random assignment of the collected studies to all raters, two raters coded each study following coding manual procedures. Raters coded approximately four studies per week over a 6-week period, submitting coding sheets as completed. When any discrepancy between codings was noted, we immediately met with coder pairs and facilitated discussion of their ratings until agreement was reached. Through the coding process, we determined that eight studies did not meet inclusion criteria: Four did not report sufficient information for effect size calculation, one did not use quantitative assessments for outcome measurement, and three did not qualify as applying a child-counseling intervention using CCPT methodology. As a result, we determined that 53 studies met criteria for inclusion in the meta-analysis.

Independent Variables

Individual study characteristics were coded as independent variables to explore the relationships between effect sizes and study characteristics. Characteristics of interest in this meta-analysis included (a) publication status, (b) demographics of child participants, (c) family demographics, (d) setting of the study, (e) population focus of the study, (f) presenting issues, (g) clinical level of child participants, (h) participant recruitment, (i) research design, (j) treatment model, (k) treatment format, (l) treatment group, (m) sample size, (n) duration and intensity of treatment, (o) treatment provider demographics, (p) randomization, and (q) treatment integrity.

Dependent Variable

The dependent variable in this meta-analysis was the effect size of the CCPT treatment for each outcome measure in each individual study. To ensure accuracy and avoid possible contamination, an effect size calculator on the Excel spreadsheet software was created to calculate the effect sizes instead of coders calculating them manually. During the coding process, we found that 27 of the collected studies used analysis of covariance or multivariate analysis of covariance. Furthermore, 13 of those 27 studies did not apply random assignment or did not report sufficient information regarding group assignment. Because of the concern regarding homogeneity of pretest results within these studies, we decided to use the effect size formula that takes into account both pre- and posttest results to generate the most accurate effect size findings. The formula is shown as follows:

$$ES = (\Delta_e - \Delta_c)/S_{pre})$$

where ES is the effect size; Δe and Δc are the mean score differences between pretest and posttest scores of the ex-

perimental group and control group, respectively; and *Spre* is the pooled standard deviations of the samples. The pooled standard deviation was calculated as follows:

$$S_{pre} = [\sqrt{(n_e - 1)S_e^2 + (n_c - 1)S_c^2}]/(n_e + n_c - 2)$$

in which *ne* and *nc* are the number of participants in the experimental group and the control/comparison group, respectively; and *Se* and *Sc* represent standard deviations of the experimental group and the control group at pretest (Lipsey & Wilson, 2001, p. 173). For the studies in which authors failed to report necessary statistics for the formulas described above, we used Lipsey and Wilson's (2001) recommended summary statistics and formulas to calculate effect sizes. Twenty-two of the collected studies used sample sizes smaller than 30 total participants, and only five studies included at least 30 participants in each treatment group. Lipsey and Wilson (2001) suggested two effect-size-weighting methods to handle the small sample bias: Hedges and Olkin's (1985) sample size weight method and the inverse variance weight approach. In the present meta-analysis, we first used the correction formula advocated by Hedges and Olkin (1985, p. 80) to make *ES* an unbiased estimator of effect size, and where *N* is the number of total participants in both groups.

$$ES_{\text{unbiased}} = ES \times \{1 - [3/(4N - 9)]\}$$

The Statistical Analysis section will explain the inverse variance weight included in the hierarchical linear model (HLM) techniques used in this study.

Publication Bias

According to Rubin (1992), the vast majority of peer-reviewed published research in the social sciences reported statistically significant results, whereas studies with statistically nonsignificant results tended to remain unpublished. In the present study, we used multiple strategies to detect publication bias, including the fail-safe *N* (Orwin, 1983), funnel-plot technique (Rothstein, 2007; Sterne & Harbord, 2004), and linear regression method (Sterne, Gavaghan, & Egger, 2000; Sterne et al., 2011). First, we calculated fail-safe *N* to determine the number of unpublished studies needed to make the overall effect for the present meta-analysis nonsignificant. The result for fail-safe *N* was 28,835, which greatly exceeded the value, 260, calculated via the tolerance formula (5k + 10), where *k* is the number of collected studies (Orwin, 1983).

Following the recommendation of Sterne et al. (2011), we visually and statistically analyzed the effect size data for funnel-plot symmetry. Visual inspection of the funnel plot indicated a fairly symmetrical shape, except for one extremely large effect size ($d = 2.9$) that fell outside the ideal symmetric shape. After closer examination of this outlier from a peer-reviewed published study (Raman & Kapur, 1999), we determined that this particular study had the lowest sample size among the collected studies. Furthermore, Raman and Kapur (1999) did not report the majority of the study characteristics established for the present study to explore relationships between study variables and treatment effects. As a result, Raman and Kapur's (1999) study along with the corresponding effect size were removed from the current study. Upon a visual reexamination of the funnel plot, the shape appeared more symmetric. Next, we conducted the linear regression method based on Stern et al.'s (2000) recommendations. The nonstatistically significant result (t ratio = –0.066, $p = .948$) also suggested funnel-plot symmetry. Results from the above-mentioned strategies indicated that the collection of studies, omitting Raman and Kapur (1999), appeared robust enough to alleviate publication bias concern. Therefore, the final study collection for this meta-analysis included 52 studies (see Appendix for complete list). The 52 collected studies involved 1,848 participants with a mean of 35.5 participants and a standard deviation of 2.01. The average number of sessions was 11.87 with a standard deviation of 4.20.

Statistical Analysis

For the purpose of this study, we used HLM (Raudenbush & Bryk, 2002) to estimate an overall effect size for CCPT and to explore the relationships between study characteristics and treatment effect. Techniques of HLM take into account the dependence between effect sizes within each individual study and thus enable meta-analysts to use multiple effect sizes per study without violating the assumption of independent data. Accordingly, this meta-analysis included 239 effect sizes generated from the 52 collected studies.

The overall effect size was estimated through the unconditional analysis in HLM, which included two models: Level 1 and Level 2. The 239 effect sizes were added as the dependent variable into the Level 1 (within-study) model: $d_{ij} = B_{0j} + e_{ij}$, where d_{ij} was the i effect size of the j study. The parameter B_{0j} was the mean effect size estimated by d_{ij}. The parameter e_{ij} represented the Level 1 error value and was assumed to follow a normal distribution with a mean of zero and a constant variance of σ^2. The parameter σ^2 was the corresponding parameter of e_{ij}. Level 2 represented the between-study model $B_{0j} = \gamma_{00} + \mu_{0j}$, where γ_{00} was the grand mean effect size across studies. The parameter μ_{0j} was the Level 2 error value and followed a normal distribution with a mean of zero and a variance of τ, which was a parameter of μ_{0j}. The combination of these two models yielded the mixed model $d_{ij} = \gamma_{00} + \mu_{0j} + e_{ij}$, where d_{ij} was assumed to be normally distributed with a mean of γ_{00} and a variance of $\sigma^2 + \tau$. In HLM, the γ_{00} is estimated through the least-squares method with the weights of inverse variances, $(\sigma^2 + \tau)^{-1}$: $\hat{\gamma}_{00} = \sum[(\sigma^2 + \tau)_j^{-1} d_j]/\sum(\sigma^2 + \tau)_j^{-1}$ (Raudenbush & Bryk, 2002, p. 40), which is the same inverse variance method suggested by Lipsey and Wilson (2001). The studies with larger sample sizes (i.e., the studies with smaller error variances) are thus given more weight in the HLM effect size estimation. Effect size interpretation

followed Cohen's (1988) guidelines, in which $ES \leq .2$, $ES = .5$, and $ES \geq .8$ represent small, medium, and large treatment effect, respectively.

Results and Discussion

Overall Mean Effect Size

Across the 52 treatment–control comparisons, the estimated overall treatment effect size was .47 with a standard error of .06, which was statistically significantly larger than zero (t ratio = 7.660, $p < .001$; 95% CI [0.35, 0.59]), indicating a moderate treatment effect (Lipsey & Wilson, 2001) for CCPT interventions with children. On average, children receiving CCPT interventions performed approximately half of one standard deviation better on given outcome measures than children who received no treatment or received an alternative intervention. This finding provides support for the overall effectiveness of child-counseling interventions using CCPT methodology.

Upon initial observation (see Table 1), the finding of a moderate overall mean effect size in this study appears consistent with the findings from two recent meta-analyses of child-counseling interventions (Huey & Polo, 2008; Reese et al., 2010) and discrepant with the results from the majority of older meta-analytic reviews of intervention outcomes for children (Bratton et al., 2005; Casey & Berman, 1985; Kazdin et al., 1990; LeBlanc & Ritchie, 2001; Weisz et al., 1987). However, we found it difficult to make a direct comparison between the results of the present study and previous meta-analyses because of differences in the formulas used to calculate individual effect sizes and in the methodology used to estimate overall mean effect sizes. For example, HLM techniques used in the present meta-analysis allowed us to include multiple effect sizes from each individual study without violating the assumption of independent data (Raudenbush & Bryk, 2002). The inclusion of multiple effect sizes for the current study allowed for a more accurate exploration of the relationship between study characteristics and treatment outcomes. Among the meta-analytic reviews listed in Table 1, LeBlanc and Ritchie's (2001) study was the only other meta-analysis using HLM techniques. Another important consideration in interpreting results is the publication status of included studies. The methodology of using only published studies may lead to an overestimation of the effect size (Rothstein, 2007; Rubin, 1992). The effect size findings in the majority of the included meta-analytic reviews were estimated based on collections of published studies. Only two previous meta-analyses (Bratton et al., 2005; LeBlanc & Ritchie, 2001) included both published and unpublished studies as we did in this meta-analysis.

Study Characteristics

Meta-analysts hope to use individual study characteristics to explain the differences when statistically significant between-study variance is detected. First, we tested the homogeneity assumption to explore whether effect sizes nested onto the collected studies contained sufficient between-study differences. The results of the homogeneity test in HLM unconditional analysis showed that the between-study variance accounted for 49.2% of total variance, a statistically significant amount of effect size difference among the collected studies ($\chi^2 = 260.134$, $p < .001$). Accordingly, each study characteristic was added into either Level 1 or Level 2 models separately to explore its relationship with effect sizes. Among the study characteristics, the presenting issue varied between effect sizes and was thus added into Level 1, the within-study level in the HLM model; the remaining characteristics were added into Level 2, the between-study level. Among the study characteristics added into the Level 2 model, child's age, child's ethnicity, caregiver involvement, publication status, and treatment integrity contributed a positive amount of variance larger than 2% of the between-study variance. The following sections discuss the findings of these study characteristics, and Table 2 presents the mean effect sizes and confidence intervals of their subcategories.

Child's age. The average age of child participants in the present meta-analysis was 6.7 years, with a standard deviation of 1.8. As presented in Table 1, the average age in this meta-analysis is similar to the reported average ages of 7.0 and 7.8 years in Bratton et al.'s (2005) and LeBlanc and Ritchie's (2001) meta-analyses, respectively. However, the average age of child participants for the current study is noticeably younger than the mean ages ranging between 8.9 and 10.5 years in the other meta-analytic reviews. The results of HLM indicated that the study characteristic of child's age explained 7.3% of the between-study variance. Also, the 42 studies with a mean participant age of 7 years and younger yielded an average effect size (.53) that was statistically significantly higher than the average effect size (.21) produced from the 10 studies reporting an average age of 8 years and older (t ratio = –2.477, $p = .017$). This finding suggests that CCPT demonstrated a more beneficial effect on younger children than on children over 7 years of age. It is important to interpret this finding in light of the small number of studies targeting older children. Only two of the meta-analyses summarized in Table 1 reported statistically significant findings for child's age (Weisz et al., 1987, 1995), and the average age for children in those studies was 10.2 and 10.5 years. Weisz et al. (1987) reported a greater benefit of counseling interventions, the majority of which were behavioral, for younger children when compared with older children; whereas Weisz et al. (1995) reported results suggesting that older child participants demonstrated better treatment outcomes than did younger children.

The present findings are particularly promising considering the critical need to identify effective early interventions in response to the national crises in children's mental health care (MHA, n.d.; U.S. Public Health Service, 2000). In addition, the majority of child interventions identified as

TABLE 2

Effect Sizes (*ES*s) by Study Characteristics

Study Characteristic	*M ES*	No. of Studies	No. of *ES*s	95% CI
Child's age				
7 years and younger	.53	42		[0.39, 0.67]
8 years and older	.21	10		[–0.03, 0.45]
Child's ethnicity				
> 60% Caucasian	.33	15		[0.13, 0.53]
> 60% non-Caucasian	.76	15		[0.48, 1.04]
Mixed	.42	16		[0.22, 0.62]
Not stated	.20	6		[0.03, 0.37]
Caregiver involvement				
Full parental involvement	.59	24		[0.40, 0.78]
Full teacher involvement	.53	4		[0.17, 0.89]
Partial or no caregiver involvement	.33	24		[0.15, 0.51]
Treatment integrity				
Meet all criteria	.58	15		[0.31, 0.85]
Meet two criteria	.49	19		[0.32, 0.66]
Meet only one criterion	.24	13		[0.09, 0.39]
No description	.63	5		[–0.22, 1.48]
Publication status				
Published journal article study	.56	36		[0.41, 0.71]
Non-peer-reviewed study	.21	16		[0.03, 0.39]
Presenting issue				
Global behavior problems	.48	36	56	[0.34, 0.62]
Internalizing behavior problems	.42	29	52	[0.33, 0.50]
Externalizing behavior problems	.33	29	53	[0.00, 0.66]
Caregiver–child relationship stress	.59	23	29	[0.33, 0.85]
Self-efficacy	.63	13	14	[0.33, 0.93]
Academic performance	.46	3	12	[0.33, 0.59]
Other behavior problem	.52	9	23	[0.34, 0.70]

Note. CI = confidence interval.

evidenced-based treatments (Chorpita et al., 2011) are not proven effective for young children. Because CCPT uses the developmentally responsive properties of play to facilitate children's expression of their feelings, thoughts, and experiences, it is particularly suited for young children. Further research is needed to examine the effectiveness of CCPT on older children.

Child's ethnicity. Because of the limited numbers of studies targeting specific ethnic groups other than Caucasian, the 52 studies were categorized into the following four categories: (a) Caucasian (more than 60% of child participants were Caucasian), (b) non-Caucasian (more than 60% of child participants were non-Caucasian), (c) mixed groups (none of the represented ethnic groups were more than 60% of total child participants), and (d) not stated. A proportion of 19.1% of the variance for the between-study difference was attributed to this study characteristic. The mean effect size (.76) for non-Caucasian studies, which included African American, Latino/Hispanic, Asian/Asian American, and other ethnic minority groups, was statistically significantly higher than the mean effect size (.33) for Caucasian studies (t ratio = –2.721, p = .009). This finding for CCPT's greater benefit for non-Caucasian populations suggests that CCPT is particularly responsive to the needs of diverse populations of children and provides support for its consideration as a culturally responsive counseling intervention for children.

Previous meta-analytic researchers examining the overall effectiveness of counseling interventions on children and adolescents (see Table 1) did not examine child's ethnicity as a predictor for treatment effect. Huey and Polo's (2008) meta-analysis on 25 studies, which targeted interventions for ethnic minority children and adolescents, reported a mean effect size of .44. The larger mean effect size found in the present study provides further evidence to support CCPT's utility cross-culturally.

CCPT is grounded in the belief that play is the universal language for children to express their emotions and thoughts without relying on verbalizations (Landreth, 2012). Thus, CCPT provides children with a nonverbal and symbolic means of expression that transcends language, sociopolitical, and cultural barriers that children of ethnic minority groups can experience on a daily basis, as well as in more traditional forms of talk-oriented counseling approaches. The fully accepting environment and opportunity for free expression in a counseling relationship based on CCPT may be an additional therapeutic factor that accounts for the present finding regarding CCPT's superior benefit for ethnic minority children, who may experience challenges in the degree of acceptance and belonging within the dominant culture.

Caregiver involvement. The collected studies were coded into three categories: (a) full parental involvement, (b) full teacher involvement, and (c) partial or no caregiver involvement. The first category of full parental involvement included

studies in which parents or significant caregivers were fully involved in the treatment process by receiving training and supervision as therapeutic agents for their children. The second category of full teacher involvement included studies in which teachers were fully involved in the treatment process by receiving training and supervision as therapeutic agents for their students. The final category of partial or no caregiver involvement included studies involving parents, caregivers, or teachers in consultations; studies specifically excluding parents and teachers in the treatment process; and studies with no description of caregiver involvement.

This variable of caregiver involvement contributed 4.4% of the between-study variance. The results indicated that the effect size (.33) yielded by the studies of partial or no caregiver involvement was statistically significantly different from the effect size (.59) generated from the studies of full parental involvement (t ratio = 2.071, p = .043) and the effect size (.53) produced by the studies of full teacher involvement (t ratio = 2.052, p = .045). The findings confirmed the benefits of involving caregivers in the therapeutic process of child counseling shown in several previous meta-analytic reviews. Similarly, Bratton et al. (2005), LeBlanc and Ritchie (2001), and Weisz et al. (1995) reported that studies fully involving paraprofessionals, including parents or teachers, in the treatment process yielded a statistically significantly larger mean effect size than studies only involving counselors or therapists.

In a recent meta-analysis, Dowell and Ogles (2010) collected 48 outcome studies using methodology in which an individual intervention was compared with a family therapy intervention or the combination of individual and parent-only interventions. The authors reported an overall weighted mean effect size of .27, which suggested a statistically significantly additional treatment effect for the counseling interventions directly involving parents in comparison with individual child counseling with no parental involvement (Dowell & Ogles, 2010). The findings from previous meta-analytic reviews and the present study evidently encourage counselors working with children to include caregivers within the treatment process.

Although the findings on caregiver involvement in the present study are consistent with research findings in the literature, they should be interpreted with caution. We recognized that the studies categorized in full parental involvement used filial therapy modalities, in which caregivers served as treatment providers for their children. In many of these studies, parents also served as data sources rating child behavior or reporting parenting stress on assessments. In addition, Bratton et al. (2005) stated that possible factors for enhanced treatment results for those studies fully involving caregivers in the treatment process may include stringent treatment procedures, close professional supervision, intensive training, dual roles of parents or teachers as treatment providers and outcome measure sources, and the distinctly challenging levels of the child participants. Studies fully involving caregivers in the treatment process tend to produce better treatment results; however, CCPT interventions provided by mental health professionals are still considered effective and imperative in the field of child counseling. When caregivers are not emotionally available or their children are experiencing severe emotional disturbances, caregivers may be unable to meet children's needs, and interventions requiring full caregiver involvement may not be appropriate at that time. Also, many parents or caregivers may not be willing to participate in the child's treatment process because of personal reasons. Therefore, counseling interventions fully involving caregivers should not completely replace traditional interventions provided by therapists, and mental health professionals should always use sound judgment when determining treatment modalities, given the findings of this meta-analytic study.

Study quality. One of the major criticisms of meta-analysis has been related to the quality of collected studies (Eysenck, 1994; Lipsey & Wilson, 2001). To address this issue, study quality was assessed by two independent variables: treatment integrity and randomization. The purpose of including treatment integrity as an independent variable was to explore the relationships between overall treatment effect and the levels of treatment integrity measured by three criteria: use of a treatment manual, description of treatment procedure, and depiction of therapist training in CCPT methodology. The average effect size (.58) produced by the studies meeting all three criteria was somewhat higher than the effect size (.49) produced by the studies that met only two of the criteria, although the two effect sizes were not statistically significantly different. When the level of treatment integrity lowered to meeting only one criterion, the average effect size dropped to .24, a value statistically significantly lower than the average effect sizes found for the studies meeting all three criteria (t ratio = 2.249, p = .029) and the studies meeting two of the criteria (t ratio = 2.235, p = .030). A proportion of 5.3% of the variance for the between-study difference was attributed to the variable of treatment integrity. This finding clearly indicated the positive relationship between treatment integrity and treatment outcome and further suggested the importance of a rigorous treatment procedure and therapist training to empirical research.

The purpose of random assignment in an empirical research study is to ensure that different treatment conditions are comparable and to avoid selectivity bias (Rubin, 2008). Although the HLM results revealed a trivial amount of variance attributed to this variable and no statistically significant differences between subcategories, the mean effect size (.51) generated by studies using random assignment appears observably higher than the effect size (.38) yielded by the studies in which researchers did not use random assignment or did not report a relevant description. None of the previous meta-analytic researchers investigated the potential influence of study quality on the treatment effect. The positive relationships found between treatment outcome and the variables

of treatment integrity and randomization in this present meta-analysis validated the importance of study quality for empirical research. In addition, the finding suggested that counselors should maintain high integrity in their treatment practice to ensure treatment effects.

Publication status. The 52 collected studies were divided into two categories: peer-reviewed journal article studies and non-peer-reviewed studies. This variable was attributed as explaining 12.1% of Level 2 variance in this analysis model. The estimated mean effect size (.56) found for the peer-reviewed journal article studies was statistically significantly higher than the mean effect size (.21) found for the non-peer-reviewed studies, including dissertations, theses, and unpublished research documents (t ratio = –3.152, p = .003). As mentioned earlier, the majority of previous meta-analytic reviews were based on collections of published studies. Although LeBlanc and Ritchie (2001) did not report any statistically significant differences between journal articles, dissertations, and unpublished studies, Bratton et al. (2005) found a statistically significant difference between the mean effect sizes for published studies and unpublished studies. The publication status findings in this present meta-analysis and meta-analytic review of Bratton et al. (2005) both support the claim that studies with significant results are more likely to be accepted for publication in peer-reviewed journals (Rubin, 1992).

Presenting Issue

The independent variable of presenting issue is discussed separately from study characteristics because it varies between effect sizes instead of studies. There are seven categories in presenting issue: global behavioral problems, internalizing behavior problems, externalizing behavioral problems, caregiver–child relationship stress, self-efficacy, academic performance, and other presenting issues. Although only 1.7% of Level 1 variance was attributed to this variable, the effect size values ranging from .33 to .63 indicated positive effects of CCPT interventions on a variety of presenting issues (see Table 2). The mean effect size (.33) for the category of externalizing behavior problems was found to be statistically significantly different from the mean effect sizes for categories of global behavior problems (.48, t ratio = 2.021, p = .044), caregiver–child relationship stress (.59, t ratio = 2.207, p = .029), and self-efficacy (.63, t ratio = 2.156, p = .032). Comorbidity of symptoms may be a reason for the greater improvement on children's global behavioral problems, which is a term representing children's broad-spectrum behavior problems. Young children often show multiple symptoms across various presenting issues (Copeland, Shanahan, Costello, & Angold, 2009). The improvement on children's broad-spectrum behavioral problems may result from the combination of changes on multiple internalizing and externalizing behavioral concerns and thus appears to be greater than the improvement for a single behavioral symptom.

Although CCPT interventions were observed to be effective for reducing caregiver–child relationship stress, it should be noted that the majority of studies addressing caregiver–child relationship stress fully involved caregivers as the treatment providers in the therapy process. As mentioned previously, involving parents or teachers in children's counseling may benefit the therapeutic process. In other words, including parents in the treatment process may not only enhance treatment effects for child clients but at the same time improve caregiver–child relationships.

The medium to large mean effect size for the category of self-efficacy suggested the effectiveness of CCPT on improving children's self-esteem. The greater change on enhancing children's self-esteem forms a reasonable and understandable observation because building self-esteem responses is clearly listed as one of the play therapy skills on the CCPT protocol (Giordano, Landreth, & Jones, 2005; Ray, 2009). The mean effect size for the category of academic performance appeared to be small, indicating the limited effects of CCPT on children's academic improvement. Nevertheless, given the low numbers of effect sizes coded in this category, we highly encourage readers to interpret and apply the finding with caution.

The majority of researchers of the previous meta-analytic reviews in the literature of child counseling reported no statistically significant differences between presenting issues or target behavior problems. Although Casey and Berman (1985) found statistically significant differences between target problems, the differences fell between social adjustment and other target problems, including impulsivity/hyperactivity, phobia, and somatic problems. Bratton et al. (2005) found no statistically significant difference between target problem behaviors and reported large average effect sizes for internalizing behavior problems, externalizing behavior problems, and combined behavior based on Cohen's (1988) guidelines. LeBlanc and Ritchie (2001) also reported no statistically significant differences between the six categories of presenting problems, including emotional maladjustment, social maladjustment, reaction to or anticipation of identified traumatic event, academic problems, family maladjustment, and behavioral problems. Weisz et al. (1987, 1995) compared the target problem types of overcontrolled problems and undercontrolled problems, which appeared to be similar to internalizing and externalizing behavior problems, and found no statistically significant difference. Although these findings, especially the differential mean effect sizes for target problems or presenting issues, varied among all the meta-analyses mentioned above, the positive and statistically significant results in this present study confirmed the effectiveness of CCPT as a child counseling methodology for a variety of presenting issues.

HLM Final Model

In the HLM final model, we hoped to further explore the relationships between several specific study characteristics and

CCPT effectiveness. First, we purposefully selected the variable of presenting issue in the final model. This step allowed us to consider the effect size variance between categories of presenting issue before any further analysis. We further chose the study characteristics of child's age, child's ethnicity, and caregiver involvement because of CCPT theoretical beliefs and the significant amount of between-study variance they contributed in the individual models. Although the publication status and treatment integrity also contributed fair amounts of between-study variance in the individual models, they did not provide meaningful information specifically for CCPT effectiveness and were thus excluded from the final model. To detect multicollinearity among these variables, we calculated variance inflation factors (VIFs) through the linear regression analysis (Cohen, West, Aiken, & Cohen, 2003). The VIFs, which ranged between 1.236 and 1.895, did not indicate a risk of multicollinearity among these variables.

Child's age appears to be the most important among the three independent variables because of the theoretically developmental perspective that CCPT is an appropriate counseling intervention for young individuals (Lambert et al., 2005). Although the importance of both child's ethnicity and caregiver involvement has increased in recent play therapy literature (Baggerly, Ray, & Bratton, 2010; Landreth, 2012), we decided to consider child's ethnicity before caregiver involvement because the level of caregiver involvement may vary among families of different ethnicities. The order of variables for the HLM final model appeared as presenting issue, child's age, child's ethnicity, and caregiver involvement. After we entered the variable child's age into the HLM final model, the analysis results indicated that 5.8% of the between-study variance was accounted for by this variable. Child's ethnicity, after being added into the model, contributed a relatively large decrease of between-study variance, and the proportion of between-study variance explained by both variables increased to 27.7%. After adding the variable child's ethnicity into the model, however, the proportion of between-study variance explained by all three variables lowered to 22.9%. Table 3 presents the analysis results of the final model.

The results in the final model revealed statistically significant differences between the non-Caucasian child group and other child ethnicity groups as well as between externalizing behavior problems versus global behavioral problems and self-efficacy. Although the difference between child age groups became no longer statistically significant, the regression coefficient revealed a visible discrepancy between them. The differences between categories of caregiver involvement also shrank substantially and were no longer statistically significant. A possible reason is that the majority of the caregiver–child relationship stress findings were from the studies with full parental involvement. Accordingly, the differences between categories of caregiver involvement decreased when the effect size variances between presenting issues were controlled in the HLM model. This change in the final model also reiterates that the results of caregiver involvement in the individual model should be interpreted with caution.

TABLE 3

Results of the Final Model

Fixed Effect	Coefficient	*SE*	*t* Ratio	*p*
Intercept	0.35	0.08	4.59	< .001*
Child's age				
7 years and younger	0.30	0.18	1.67	.101
8 years and older[a]				
Child's ethnicity				
Non-Caucasian[a]				
Caucasian	–0.42	0.18	–2.39	.021*
Mixed	–0.37	0.18	–2.10	.041*
Not stated	–0.55	0.16	–3.50	.001*
Caregiver involvement				
Full parental involvement	0.11	0.22	0.52	.601
Full teacher involvement	0.07	0.15	0.46	.645
Partial or no caregiver involvement[a]				
Presenting issue				
Global behavior problems	0.14	0.07	2.14	.034*
Internalizing behavior problems	0.09	0.06	1.34	.183
Externalizing behavior problems[a]				
Caregiver–child relationship stress	0.22	0.12	1.78	.076
Self-efficacy	0.30	0.14	2.14	.034*
Academic performance	0.15	0.09	1.70	.090
Other behavioral problem	0.17	0.19	0.86	.390

Note. Random effect, Level 2 (μ_0) standard deviation = 0.35 and variance component = 0.12; $\chi^2 = 183.99$ and $p < .001$. Random effect, Level 1 (*e*) standard deviation = 0.39 and variance component = 0.15.

[a]Represents the reference group in the dummy-coding system.

*Statistically significant at $p < .001$.

Limitations

This article is the first and only meta-analytic review investigating the overall treatment effectiveness for contemporary CCPT research. Although we carefully followed rigorous procedures for meta-analytic research (Lipsey & Wilson, 2001; Whiston & Li, 2011), including study collection, publication bias examination, data coding scheme and coder training, and statistical analysis, the results from the present meta-analysis should be interpreted in light of the following limitations.

Two major limitations in interpreting results are the low number of studies in specific categories of study characteristics and missing information in some studies. Several categories of study characteristics had to be combined because of the low number of studies for the categories. For example, the originally coded categories for child's ethnicity included three studies of African American children, four studies of Hispanic or Latino children, five studies of Asian/Asian American children, and three studies of children from other ethnic minority populations. These categories had to be combined as the category of non-Caucasian to make a meaningful comparison with the 15 studies in the category of Caucasian. The discrepant numbers of studies between these ethnicity categories highlighted an imperative need for more empirical CCPT studies on diverse ethnic groups.

The second major limitation results from missing information. We were forced to use the codes of not stated, other, or no description because several studies failed to report adequate information for coding independent variables into meaningful categories. Although the use of these categories allowed all of the collected studies to be included in the HLM analyses, it actually limited the result interpretation and implication. For example, without clear information about treatment integrity in the five studies coded as no description, the high average effect size (see Table 2) and statistically significant difference appeared meaningless.

Implications and Conclusion

Although CCPT has been in use since the 1940s and has a long history of research dating back almost that far, critics have questioned its sound empirical evidence and its place in the broader field of child counseling (Bratton et al., 2005). The meta-analyses of Bratton et al. (2005) and LeBlanc and Ritchie (2001) responded to critics by showing that the treatment effect for play therapy appeared comparable with other established child counseling interventions. However, Bratton et al. (2005) acknowledged that many of the early play therapy studies included in their meta-analysis would not be considered rigorous by today's standards and urged contemporary researchers to use more stringent research methods, including consistent treatment protocol.

Baggerly and Bratton (2010) and Ray and Bratton (2010) reviewed outcome studies of CCPT in the present decade, noting a surge in well-designed and methodologically rigorous research. The purpose of the present meta-analysis was to examine a single theoretical modality by investigating the effects of play therapy based on contemporary studies following a CCPT methodology. Furthermore, in the present study, we intended to demonstrate a high level of methodological rigor, including meticulous coding procedures, multiple strategies for accessing publication bias, and adoption of the HLM technique.

The result of moderate treatment effect in this meta-analysis revealed that children who received CCPT interventions improved from pretreatment to posttreatment by approximately half of a standard deviation more than children who did not receive CCPT treatment. Although the differences in statistical methodology among the reviewed meta-analyses limit a strict comparison of the effects of CCPT relative to other modalities, the finding in this meta-analysis clearly supports CCPT as a beneficial counseling intervention for children. Moreover, considering the ethical responsibility for the use of evidence-based treatments, this finding provides robust empirical evidence for mental health professionals to apply CCPT interventions when working with child clients.

Statistically significant relationships between effect sizes and study characteristics reveal that child's age, child's ethnicity, caregiver involvement, study quality, and presenting issue appear to be important moderators of the outcome of play therapy. Specifically, although CCPT can be considered effective across presenting issues, it demonstrated the greatest benefit for broad-spectrum behavioral problems, children's self-esteem, and caregiver–child relationship stress. This result indicates that clinicians should consider CCPT as a viable treatment for children presenting with these concerns.

Regarding child's age, CCPT showed greater benefits for younger children than for children 8 years and above. This finding is particularly noteworthy in light of the paucity of evidence-based, child-therapy interventions for young children, particularly without full parental involvement (Chorpita et al., 2011), and it answers the call for interventions designed to meet the mental health needs of young at-risk children (U.S. Public Health Service, 2000). The effect of a child's ethnicity on treatment outcome was another notable finding. Non-Caucasian children demonstrated substantially greater improvement as a result of play therapy than their Caucasian counterparts. Although more research is needed to explain this result, a possible explanation lies in play's ability to transcend language barriers for non-Caucasian children with native languages other than English, thus allowing a nonverbal means of expressing inner feelings, thoughts, and experiences they may be unable to express fully in a dominant English-speaking world. Regardless, the present finding strongly suggests that practitioners can confidently consider CCPT as a culturally responsive intervention.

In the present meta-analysis, we carefully defined treatment integrity and randomization, which are important elements in study quality (Nezu & Nezu, 2008), as two inde-

pendent variables to explore the relationship between study quality and overall treatment effect. The findings suggest the importance of study quality in empirical research and to treatment outcomes. Hence, future researchers and mental health practitioners should carefully enhance the rigor of research design and examine the treatment integrity of interventions. In addition, the findings regarding parental involvement in the present meta-analysis were consistent with other meta-analytic reviews (Bratton et al., 2005; Dowell & Ogles, 2010; LeBlanc & Ritchie, 2001; Weisz et al., 1995) and confirmed the additional benefits of the CCPT modalities, such as filial therapy and CPRT, in which caregivers are trained as treatment providers under close supervision. Bratton et al. (2005) recommended that mental health practitioners consider the severity levels of children's presenting issues and caregivers' emotional readiness before recommending CCPT interventions with full caregiver involvement. When caregivers are struggling with personal issues or the children's severity levels exceed caregivers' capacity, they may be unable to meet children's needs.

Our overall findings support CCPT's beneficial treatment effect. Specifically, CCPT can be considered as a developmentally and culturally responsive counseling intervention effective across presenting issues. CCPT accordingly deserves recognition as a viable treatment within the field of child counseling.

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APPENDIX

Studies Used in the Present Meta-Analysis

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(Continued)

APPENDIX (C*ontinued*)

Studies Used in the Present Meta-Analysis

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Note. The number of published and unpublished studies in the Appendix may be different from what is presented in the article because some unpublished studies were published after the completion of the data analysis.