Published in final edited form as:

Behav Ther. 2012 September ; 43(3): 606–618. doi:10.1016/j.beth.2011.11.001.

Parent Child Interaction Therapy for Mexican Americans: Results of a Pilot Randomized Clinical Trial at Follow-up

Kristen McCabe^{1,2,3,4}, May Yeh^{2,3,4}, Anna Lau^{2,5}, Carolina Bertely Argote¹

¹University of San Diego

²Child and Adolescent Services Research Center, Rady Children's Hospital and Health Center, San Diego

³University of California, San Diego

⁴San Diego State University

⁵University of California, Los Angeles

Reduction of disparities in mental health services for Mexican Americans (MAs) is an important public health priority (U.S. Department of Health and Human Services, 2001). MAs experience rates of mental health problems that are as high or higher than Non Hispanic Whites (NHWs), but are less likely to receive mental health services, especially those of high quality, and less likely to complete treatment (U.S. Department of Health and Human Services, 2001). In particular, MA youth experience elevated rates of both conduct disorder (Vazsonyi & Flannery, 1997) and delinquency (Farrington, 1987), problems where early intervention is critical. Young children's externalizing behavior disorders are common and persistent, but are highly treatable if intervention occurs early (Foster et al., 2005). Thus, culturally responsive treatments for young children's externalizing problems that are appealing to MA families and effective in both the short and long term are urgently needed.

Efforts to provide effective, culturally sensitive mental health services to MA families are hampered by limited research on what works for this population. There are a number of evidence based treatments (EBTs) that have demonstrated positive outcomes with young children suffering from externalizing behavior problems, most of which involve behavioral parent training (BPT; Brestan & Eyberg, 1998). However, some researchers point out that exclusion of Latinos from most efficacy trials has resulted in insufficient data to support dissemination (e.g., Bernal & Scharron-del-Rio, 2001). Although the evidence base is growing for interventions with ethnic minorities (see Huey & Polo, 2008), it still fails to reflect the ethnic diversity of the U.S. across a full range of disorders, interventions, and developmental stages (Weisz, Sandler, Durlak, Anton, 2005), and many researchers believe

Authors may be reached at the Child and Adolescent Services Research Center, 3020 Children's Way MC5033, San Diego, CA 92123. kmccabe@casrc.org, myeh@casrc.org, alau@psych.ucla.edu, caroargusd@hotmail.com. Please address correspondence concerning this article to Kristen McCabe, Ph.D.

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that EBTs require significant adaptation to engage and assist MA and other ethnic minority families (e.g., Castro, Barrera, & Martinez, 2004).

Although data on the effectiveness of BPT with ethnic minorities is limited, a number of studies have found comparable outcomes across groups for BPT, even without cultural adaptations (Miranda et al., 2005, Lau, 2006). Parent Child Interaction Therapy (PCIT) has demonstrated outcomes for African American families with a history of child maltreatment that are comparable to those for Caucasians (Chaffin et al., 2004), and the Incredible Years program has demonstrated equivalent outcomes for African American, Latino, and Asian American families (Reid, Webster-Stratton, & Beauchaine, 2001). Although these findings are promising, tests of BPT with ethnic minorities have not always performed as well. For example, Fernandez, Butler & Eyberg's (2011) examination of PCIT with African American families found improvements in child externalizing problems, but parenting stress remained elevated post-treatment. Studies of PCIT with African American, MA, and Puerto Rican families found that a greater number of sessions or longer sessions were necessary to complete treatment successfully (Fernandez & Eyberg, 2011, Matos, Bauermeister, & Bernal, 2009, McCabe & Yeh, 2009). Other studies of BPT with ethnic minorities have suffered from lower enrollment and higher dropout of immigrant and minority parents (Holden, LaVigne & Cameron, 1990; Cunningham, Boyle, & Offord, 2000; Reid et al., 2001; Kazdin & Whitley, 2003), suggesting that, under some circumstances, BPT may require adaptation.

Lau (2006) argues that BPT interventions should be culturally adapted when there is evidence that an ethnic minority group differs in risk factors for disorder, experiences less benefit from treatment, or has a history of poor engagement in treatment, which may well be the case for BPT with MAs. Although many aspects of BPT have been found to be culturally congruent for MAs, BPT has been described as potentially mismatched with ethnic minority families, given its reliance on parenting techniques that are congruent with an authoritative style of parenting that is both more prevalent and more highly associated with positive developmental outcomes among Euro-Americans (Kotchik & Forehand, 2002). In qualitative studies, MAs have reported having little knowledge about what to expect from mental health treatment, to experience discouragement from seeking treatment by fathers and other extended family members, and to be reluctant to consider children's behavioral problems a mental health issue that is amenable to psychosocial intervention (McCabe, Yeh, Garland, Lau & Chavez, 2005). Furthermore, culture specific attitudes toward treatment and expectations from treatment have been found to explain premature termination among MAs (McCabe, 2002), and differences in the ways that MA parents conceptualize the causes of their children's problems has been associated with underutilization of mental health services (Yeh et al., 2005). Thus, BPT interventions for MAs are a good candidate for cultural modification.

Some evidence for the effectiveness of culturally adapted BPT interventions for Latinos already exists. Notably, culturally modified versions of Parent Management Training (PMT) for MAs (Martinez & Eddy, 2005), and PCIT for MAs (McCabe & Yeh, 2009) and Puerto Rican children with ADHD (Matos, Torres, Santiago, Jurado and Rodriguez, 2006; Matos et al., 2009) have demonstrated outcomes comparable to NHWs. Although culturally modified

versions of interventions often perform well, at least one study has found that when cultural modifications displace core content of BPT, outcomes can suffer (Kumpfer, Alvarado, Smith, & Bellamy, 2002). Thus, we cannot assume the superiority of culturally adapted interventions either.

Because both standard and culturally adapted versions of BPT have at times been demonstrated to be effective with ethnic minority families, it is difficult to determine under what circumstances cultural modifications are warranted. To address this question, studies must compare culturally modified versions of BPT to standard versions and to treatment as usual (TAU) or no-treatment controls. However, this has rarely been done (Bernal, Jimenez-Chafey, & Domenech Rodriguez, 2009). Griner and Smith (2006) conducted a meta-analysis of 76 studies that examined interventions that were culturally adapted, and concluded that adapted interventions moderately outperformed traditional interventions. In particular, less acculturated Hispanic clients benefited more from culturally adapted interventions than clients that were more acculturated or from other ethnic minority groups. Although this meta-analysis is promising evidence that cultural adaptation can benefit Latinos, the majority of interventions examined were not EBTs and a substantial number suffered from serious methodological problems such as lacking a control group or failing to specify the cultural adaptations made (Bernal et al., 2009).

Designs that compare culturally adapted BPT interventions with standard interventions over the long-term are particularly rare. The long-term effectiveness of interventions is especially important to consider with externalizing behavior problems, which are persistent, and, for a subset of youth, progress to conduct disorder and antisocial personality disorder (Foster et al., 2005). Long-term follow up is essential for evaluating culturally adapted BPT because benefits of BPT may either be temporary, or may become more apparent over time. Cultural modifications that increase the fit between BPT and the client's culture have the potential to improve the maintenance of treatment effects. Furthermore, culturally modified interventions have included components designed to engage fathers and extended family members in treatment (McCabe & Yeh, 2009). Studies of parent training among NHWs have found that father engagement does not affect outcomes immediately post-treatment, but does predict better maintenance of treatment effects up to one year later (Bagner & Eyberg, 2003; Coplin & Houts, 1991; Webster-Stratton, 1985).

Few studies have compared the long-term maintenance of treatment effects across culturally adapted and standard versions of treatment. In one of the few studies with designs of this type, Botvin, Schinke, Epstein, Diaz, and Botvin (1995) compared a culturally focused skills based substance abuse prevention program to a similar, non-culturally focused program and a control group. They found that the two skills based programs outperformed the control condition immediately post-treatment, but that the culturally focused prevention program outperformed both the non-culturally focused program and the control group at two-year follow-up. Thus, the culturally adapted version gained ground relative to the standard version over the longer term.

In the current study, we compare the long-term effectiveness of culturally adapted and standard versions of PCIT with TAU for MA families. PCIT is a BPT intervention for young

children's externalizing behavior problems that has been found to increase parenting skills, reduce child behavior problems, generalize benefits to untreated siblings (Brestan, Eyberg, Boggs, & Algina, 1997; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998; Nixon, Sweeny, Erickson, Touyz, 2003; Bagner & Eyberg, 2007), and reduce re-reports of child abuse (Chaffin et al., 2004; Chaffin, Funderburk, Bard, Vale & Gurwitch, 2010). Furthermore, both standard PCIT and modified versions of PCIT have been found to decrease child internalizing symptoms (Chase & Eyberg, 2008; Lenze, Pautsch, & Luby, 2010; McCabe & Yeh, 2009), suggesting that PCIT may have benefits beyond the externalizing problems it was designed to target. The effects of PCIT have been maintained as long as 6 years post-treatment with largely NHW samples (Hood & Eyberg, 2003; Boggs et al., 2004, Nixon, Sweeney, Erickson, & Touyz, 2004).

Drawing on a variety of both quantitative and qualitative methods, we identified a variety of ways in which the cultural fit of PCIT for MAs could be improved. We used this information to develop a culturally modified version of PCIT called *Guiando a Ninos Activos (GANA)*, or Guiding Active Children (McCabe et al., 2005). We then randomly assigned young MA children who presented to a local community mental health clinic with clinically significant behavior problems to receive GANA, PCIT, or TAU. McCabe and Yeh (2009) reported on the immediate post-treatment results, which indicated that all three treatments produced significant gains. GANA significantly outperformed TAU across both parent report and observational measures that included indices of parenting and both child externalizing and internalizing symptoms. However, significant differences were not found between GANA and PCIT on any measures, and differences between PCIT and TAU were significant for observational but not parent-report measures. This manuscript extends those findings by examining long-term follow-up data collected between 6 months and 2 years post-treatment.

Hypotheses

Consistent with the findings at post-treatment, we hypothesized that families in the GANA program would continue to have lower rates of parent reported child internalizing and externalizing symptoms, parenting stress, and parental depression than those receiving TAU. We predicted that PCIT would demonstrate intermediate outcomes between GANA and TAU.

Method

Participants

Participants were 58 MA families of children with clinically significant behavior problems seen for treatment at a community mental health clinic between September, 2003 and February, 2006. Families were eligible if: (1) the Parent identified the child as MA and between the ages of 3 and 7. (2) the Child received a score above the clinical cutpoint on the Intensity Scale of the Eyberg Child Behavior Inventory (ECBI: Eyberg & Pincus, 1999). (3) Neither parent nor child was participating in any other psychosocial treatment targeting the child's behavior problems simultaneously. Referrals came from several sources: 42% schools; 22% other agency, clinic or hospital; 12% self; 5% friend; 2% physician; and 2% social worker.

Respondents were female primary caregivers (92% biological mothers, 3% grandmothers, 2% aunts, and 2% other). When possible, male primary caregivers also participated in the assessments ($n=6$); however, there was not sufficient data to report father reported outcomes. Average ages were 32.2 years ($SD=8.1$ years) and 35.0 years ($SD = 10.3$) for female and male primary caregivers, respectively. Male primary caregivers participated in at least one therapy session in 40% ($n = 23$) of the cases. The sample included more boys ($n = 41$, 71%) than girls, consistent with higher rates of externalizing disorders in boys found in both community and clinical samples (Garland et al., 2001). Mean child age was 52.8 months ($SD = 12.4$ months), at baseline and 77.32 months ($SD=13.92$) at long-term follow-up. Approximately 67% of the children and 81% of the primary caregivers preferred Spanish, and 76% of primary caregivers were first generation Americans. Among mothers, 69% were currently married, 12% were separated or divorced, and 19% were never married. Fifty percent of mothers and 51% of fathers reported a high school or lower level of education, and average yearly income was \$23,271 ($SD = \$14,518$). The three conditions did not differ on demographics, number of sessions attended, or attrition at post-treatment (McCabe & Yeh, 2009). Neither did the three conditions differ on prevalence of acculturation categories ($\chi^2 (2, N=58) = 5.182, p = .521$) or length of time to follow-up ($F = .044, p = .957$). For the overall sample, 63.8% of respondents were classified by the ARSMA-II (described below) as Very Mexican Oriented, 20.7% were Mexican Oriented to Balanced Bicultural, 10.3% were Slightly Anglo Oriented Bicultural, and 5.2% were Strongly Anglo Oriented. None were Assimilated.

Procedure

Eligibility for the study was determined by phone interview conducted by a bilingual research assistant. Eligible families were invited to attend a 3- to 4-hour pre-treatment assessment, where they provided written informed consent and completed an unstructured clinical interview, an observational measure of parent-child interaction (Dyadic Parent Child Interaction Coding System, or DPICS; Eyberg, Nelson, Duke, & Boggs, 2004), and questionnaire measures. When the child was taking medication for behavior problems ($n=2$), parents were asked to keep the child on a stable dose of the medication during treatment. Following the pre-treatment assessment, families were randomly assigned using random permuted blocks of nine to GANA ($n = 21$), PCIT ($n = 19$); or TAU ($n = 18$). The first author generated the randomization sequence using a random number generator. All three programs were delivered in the community mental health clinic where the parents had sought services. All families were re-contacted immediately post-treatment to complete a second 2–3 hour assessment, for which they were paid \$100.00. Long-term follow-up assessments were collected by a bilingual research assistant blind to treatment condition via telephone interview between February 2006 and July 2007. The follow-up interviews occurred an average of 15.90 ($SD = 4.25$) months post-treatment, with a range of 6.58 to 24.47 months. This wide range was due to funding which only became available after the earliest subjects were 2 year post-treatment. Parents were paid \$35.00 for their participation. All research assistants conducting assessments were blind to treatment assignment, as were families. All procedures were approved by the appropriate Institutional Review Boards.

Measures

Demographic Questionnaire (Eyberg, 1999).—Parents completed a demographic questionnaire about the child's age, sex, race/ethnicity, grade level in school, health problems, medication use, family structure and income.

Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999).—Child behavior problems were assessed with the ECBI, a 36-item parent report measure of disruptive behavior with established reliability and validity for both English and Spanish versions (Garcia-Tornel et al., 1998; Eyberg & Pincus, 1999). Construct validity was supported for a MA sample in a study that found that youth who scored in the clinical range on the ECBI were significantly more noncompliant to parental commands on an observational measure of parent-child interactions than those who scored in the normal range on the ECBI (McCabe, Lau, Yeh, Argote, & Liang, 2010). The ECBI contains two scales: the Intensity Scale measures the frequency with which behavior problems occur, and the Problem Scale measures how problematic the child's behavior is for the parent. Both scales have been found to be stable over time and sensitive to the effects of intervention. Alpha at baseline was .86 for the Intensity Scale and .80 for the Problem Scale.

Acculturation Rating Scale for MAs-II (ARSMA-II; Cuellar, Arnold, & Maldonado, 1995).—Parents' level of acculturation was assessed with the ARSMA-II, a widely used measure of acculturation with established reliability and validity for both English and Spanish language versions. Scoring of the ARSMA-II generates two continuous scales that reflect affiliation with Mexican and American culture, which are then crossed to generate five acculturation categories: Very Mexican Oriented, Mexican Oriented to Balanced Bicultural, Slightly Anglo Oriented to Balanced Bicultural, Strongly Anglo Oriented, and Assimilated (Cuellar et al., 1995).

Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000; 2001).—The CBCL is a widely used, standardized measure with established reliability and validity for both English and Spanish speaking samples. The CBCL produces an overall Total Problem Score and two broad-band subscale indices of overall Externalizing and Internalizing Problems. Alpha for CBCL Externalizing Problems was .91 for the Preschool version (1.5 to 5 years of age) and .94 for the School Age version (6–7 years of age).

Early Childhood Inventory-4 Parent Checklist (ECI-4; Gadow & Sprafkin, 1997).—The ECI-4 is a 48-item parent-report measure that assesses a range of DSM-IV disorders with established reliability and validity for English and Spanish versions (Gadow & Sprafkin, 1997). This study included modules assessing attention deficit hyperactivity disorder (ADHD; $\alpha = .90$), oppositional defiant disorder (ODD; $\alpha = .89$), and conduct disorder (CD; $\alpha = .93$).

Parenting Stress Index-SF (PSI; Abidin, 1995).—The PSI is a 36-item parent report measure of parental stress. Alpha for total stress at baseline was .91. A Spanish version of the instrument has been shown to have adequate reliability and validity with Hispanic populations (Solis & Abidin, 1991).

Parental Locus of Control (PLOC; Campis, Lyman, & Prentice-Dunn, 1986).—

The PLOC is a 47-item parent report instrument that inquires about the degree of control a parent feels they have over his or her child's behavior. Evidence for the alpha reliability, construct validity, and discriminant validity has been established for the overall PLOC (Campis, Lyman, & Prentice-Dunn, 1986). At the time this study was conducted, there was no available Spanish translation. Thus, a bilingual research assistant translated the measure, which was then reviewed and edited by a professional translator with more than a decade of experience translating psychological measures from English to Spanish. Alpha for the total scale at baseline was .73.

Interventions

PCIT—In PCIT (Eyberg et al., 1999), parents are taught skills to establish a nurturing and secure relationship with their child while increasing their child's prosocial behavior and decreasing negative behavior. The Child-Directed Interaction (CDI) phase focuses on enhancing the parent-child relationship, increasing positive parenting, and improving child social skills. The Parent-Directed Interaction (PDI) phase focuses on improving parents' ability to set limits and follow through consistently to reduce child noncompliance and disruptive behavior. Therapists actively coach parents toward mastery of the skills as assessed during a 5-minute parent-child observation at the start of each session.

Throughout treatment, parents are asked to practice the skills in brief 5- to 10-minute practice sessions at home. Treatment continues until parents demonstrate mastery of the CDI and PDI skills and their child's behavior is within ½ standard deviation of the normative mean on the ECBI Intensity Scale. Therapists work actively to keep families in treatment until termination criteria are met. In this condition, therapists were free to consider culture in their treatments as they usually would, but were not given any special training or guidelines on how to do so.

GANa—GANa retained the core features of PCIT described above, but modified the delivery of PCIT to optimize cultural fit for MA families. The adaptation process involved gathering information regarding potential cultural adaptations to PCIT from the clinical literature, the empirical literature, expert opinion, and qualitative data collected from MA parents and therapists (see McCabe et al., 2005).

Based on the data gathered from this review, the GANA program was modified to better fit the needs of MAs. The GANA program adopts a public health approach to mental health problems (Bruce, Smith, Miranda, Hoagwood, Wells, 2002; U.S.D.H.H.S., 2001), in which the program provider plays an active role in engaging families in the program, addressing barriers to participation, and preventing treatment dropout. In addition, the GANA program recognizes that MAs are heterogeneous. To ensure that parenting experts are able to tailor the GANA program to the needs of individual families, a detailed assessment of a number of culturally influenced concepts that may have an important effect on how parents respond to the program is conducted in the first session. For example, parents are asked to provide information on their conceptualization of their child's problems, beliefs about the causes of their child's problems, role of extended family members in raising the child, beliefs about

discipline, attitudes and expectations for the program, and use of alternative treatments. These concepts are referenced throughout treatment so that the program can be presented in ways that are congruent with the parents' belief system. In addition, some constructs are assessed continuously throughout treatment because they may change, such as the degree to which an extended family member is supportive or unsupportive of the child's participation in the program, so that the therapist will be able to address changes as they occur and before a family drops out. Other adaptations to the program include: (a) framing the program as an educational/skill building intervention to reduce the stigma associated with seeking "mental health services," (b) showing families two 15-minute videotape presentations that describe the phases of the program and show examples of families in PCIT sessions (Zebell & Urquiza, 2002a, 2002b) before treatment to reduce unrealistic expectations that have been found to predict treatment dropout for MA families (McCabe, 2002), (c) increasing therapist training about MA culture, (d) giving GANA therapists extra time during each session to focus on rapport building and training in establishing rapport with MAs, (e) eliciting complaints during each session to ensure that respect for authority does not prevent the parent from voicing complaints that, left unaddressed, might lead to treatment dropout, (f) translating and simplifying written handouts used in each session of PCIT, (g) including pictures of MA families engaged in PCIT so that parents could more readily identify with the examples, and (h) implementing a comprehensive engagement protocol based on McKay, Stoewe, McCadam, and Gonzalez's (1998) approach that explicitly targets mothers, fathers, and grandparents.

TAU—TAU families were assigned to therapists without training in PCIT at the same community mental health clinic. The three TAU therapists were eclectic but described their primary orientations as person-centered cognitive behavioral, trauma focused cognitive behavioral, and family systems. TAU therapists were allowed complete freedom in the approaches they used and, as in both the PCIT and GANA conditions, as many sessions as they felt necessary to complete treatment.

Integrity

For PCIT and GANA, integrity was coded from session videotapes by independent raters. Detailed checklists describing the content of sessions are included in the PCIT treatment manual (Eyberg et al., 1999). Bilingual research assistants were trained and coded practice tapes until they reached at least 80% agreement with criterion tapes. Ratings on the integrity checklists indicated that 82% of session components were delivered on average in this study. Expanded session checklists were created to monitor integrity in the GANA condition, and ratings indicated that an average of 77% of GANA session components were completed in this study. A random sample of 25% of combined GANA and PCIT tapes was re-coded by a second independent coder, and interrater reliability was good at 85% agreement.

Therapist Characteristics

Therapists were bilingual practicum students from a variety of mental health disciplines. PCIT therapists ($n = 2$) were MSW practicum students. GANA therapists ($n = 2$) were an MSW practicum student and a doctoral student in clinical psychology. TAU therapists ($n = 3$) were an MSW practicum student and two doctoral students in clinical psychology. PCIT

and GANA therapists were provided with 40 hours of training on their respective therapy approach by the first author, who was also responsible for supervising therapists in both conditions. Therapists in the TAU condition were supervised by either a licensed L.C.S.W. or a Ph.D. level clinical psychologist employed by the community mental health clinic. All therapists had one hour of face-to-face individual supervision per week. Therapists were assigned to provide only one condition, with the exception of one therapist who provided standard PCIT to a small number of cases and was later trained to conduct GANA.

Results

All results reflect intent-to-treat analyses. Long-term follow-up rates did not differ across conditions $\chi^2(2, N=58) = 3.89, p = .14$. First, we calculated effect sizes to determine the size of the treatment gains between pre-treatment and long-term follow-up for each of the three conditions. Means and standard deviations of outcome measures at baseline and follow-up are summarized in Table 2, as well Cohen's *d* for each treatment condition. Long-term effect sizes for GANA were consistently "large," ranging from .84 on the PSI to 3.27 on the ECBI Intensity Scale. Effect sizes for PCIT ranged from "moderate" to "large," with a low of .41 for PSI, to a high of 1.99 on the ECBI Intensity Scale. Finally, TAU effect sizes ranged from .21 on the PSI in the "small" range, to a "large" effect size of 1.77 on ECBI Intensity.

Statisticians have advocated examining single degree of freedom contrasts to compare the effectiveness of treatment conditions rather than examining the omnibus F statistic which may not deliver useful information, especially when sample sizes are very large or very small (e.g., Steiger, 2004). Therefore, we conducted single degree of freedom contrasts comparing the three treatment conditions on each of the parent reported outcome measures at long-term follow-up, controlling for the same outcome measure at Time1 (Table 3). Contrasts revealed that GANA produced significantly greater improvement than TAU on 6 of the 10 outcomes examined: ECBI Intensity ($p = .044$), CBCL Internalizing ($p = .035$), CBCL Externalizing ($p = .041$), CBCL Total Problems ($p = .040$), ECI ADHD ($p = .048$), and PLOC ($p = .002$). No differences between GANA and TAU were observed for ECBI Problem, ECI CD symptoms, or Parenting Stress. There was a non-significant trend for GANA to outperform TAU on ECI ODD symptoms ($p = .060$). GANA also outperformed PCIT on CBCL Internalizing ($p = .049$), but no other differences between PCIT and GANA were significant. Finally, PCIT and TAU did not differ significantly on any measure.

Because of the small sample size, insufficient power to detect differences between the three groups is a significant concern. A conservative Bonferroni correction to adjust for experimentwise error would divide the $p = .05$ level by the 10 tests conducted, resulting in an adjusted p value of .005. When this correction is applied, all differences between GANA and TAU become non-significant except for PLOC. Therefore, we also examined the between-group effect sizes (Table 3). These data show that for parent report measures, the largest effects were consistently obtained with GANA, followed by PCIT, and finally TAU. Between groups effect sizes comparing GANA and TAU ranged from a low of .31 for conduct disorder symptoms to a high of 1.24 for parental locus of control. Effect sizes comparing GANA with PCIT ranged from a low of .07 for oppositional defiant disorder symptoms to a high of .36 on CBCL Total Problems. Finally, effect sizes comparing PCIT

and TAU ranged from a low of .03 for conduct disorder symptoms to a high of .67 on parental locus of control.

Discussion

This study found that all three treatment approaches (GANA, PCIT, and TAU) produced significant parent-reported improvements among young MA children with behavior problems that were still significant at follow-up. For all three conditions, families began treatment at approximately 2.5 standard deviations above the mean on the ECBI, and 1.5 standard deviations above the mean on CBCL Externalizing Problems. By long-term follow-up, all three groups fell, on average, below the clinical cutpoint of 132 on the ECBI (Eyberg & Pincus, 1999), with GANA families right at the normative mean, PCIT families within a few points of the normative mean, and TAU families less than a standard deviation above the normative mean. Further, the mean scores of all three groups fell below the clinical cutpoint on the CBCL Externalizing scale at long-term follow-up, with GANA families below the normative mean, PCIT families less than half a standard deviation above, and TAU families less than a standard deviation above, indicating that improvement was still evident for all three groups.

The MA families in this intent-to-treat study experienced long-term outcomes that compare favorably to those found with largely Caucasian samples in other trials of PCIT. Previous trials have reported pre-treatment ECBI scores ranging from 158.92 (Nixon et al., 2004) to 187.38 (Eyberg et al., 2001). Families in this study began with pre-treatment ECBI scores that fell at the higher end of this range. At long-term follow up, GANA families reported an average ECBI score of 97.35, PCIT of 100.93, and TAU of 125.46, all of which are comparable to or better than other long-term follow-up studies of PCIT that examined intent-to-treat samples. For example, Nixon et al. (2004) reported an average ECBI intensity score of 133.41 one-year post-PCIT. Our GANA and PCIT scores at long-term follow-up even fell below scores reported in studies where only treatment completers were examined. For example, Funderburk et al. (1998) reported average ECBI Intensity scores of 119.1 18 months post-treatment; Eyberg et al. (2001) reported an average ECBI Intensity of 112.46 1 year post-treatment and 121.23 2 years post-treatment, and Hood and Eyberg (2003) reported an average of 129.13 3–6 years post treatment, all with samples that excluded treatment dropouts from the analyses. Furthermore, we might have expected higher scores for our sample given our relatively high follow-up rate (83%, versus 46% for Hood & Eyberg, 2003; 65% for Eyberg et al., 2001). Effect sizes for GANA were consistently in the large range across parent measures, PCIT effect sizes ranged from medium to large, while TAU effect sizes ranged from small to large. This suggests that GANA, PCIT, and TAU all had positive effects on child externalizing behaviors among MA families, and that these effects were as large or larger at follow-up than effects found in other long-term studies of PCIT with Caucasian samples.

When the three treatment approaches were compared to one another, GANA significantly outperformed TAU across 6 of the 10 measures examined (ECBI Intensity, CBCL Internalizing, CBCL Externalizing, CBCL Total Problems, ECI ADHD, and PLOC). Across all measures, PCIT was intermediate between GANA and TAU, but the difference between

GANA and PCIT was significant only for CBCL Internalizing Problems. The differences between PCIT and TAU were not statistically significant for any of the parent report measures. This pattern is highly consistent with what was found at post-treatment (McCabe & Yeh, 2009), and suggests that the relative differences in the size of treatment effects remained similar over a period of 6 to 24 months post-treatment. Because of our small sample size, we cannot rule out the possibility that we failed to detect differences between conditions due to low power. Furthermore, when a Bonferroni correction is applied, only the difference between GANA and TAU on the PLOC remains significant. In such cases, examining the effect sizes can provide important context. Effect sizes comparing GANA to TAU fell into the large range for a number of measures including ECBI Intensity, ECBI Problem, and PLOC, and into the moderate range for CBCL Internalizing, Externalizing, and Total Problems, Parenting Stress, and ECI ADHD Symptoms. Several of the effect sizes comparing PCIT to TAU also fell into the moderate range (Parenting Stress and PLOC). Although most of the effect sizes comparing PCIT and GANA were in the small range, these differences may also have achieved significance with a larger sample.

One of the unique features of the current study design is the inclusion of a TAU control group. Previous studies of PCIT have generally lacked a control group for comparison at long-term follow-up because they used wait-list controls (Eyberg et al., 2001; Funderburk et al., 1998; Hood & Eyberg, 2003; Nixon et al., 2004). The TAU control allows us to contextualize our finding in comparison to existing practice, an important consideration in the decision to adopt a new treatment approach, or when deciding if cultural modifications are worth the additional effort and expense. On the other hand, use of a TAU control group still does not rule out the possibility that all three treatment groups showed improvement over time due to maturation, spontaneous remission, or regression to the mean. However, Boggs et al. (2004) found that treatment dropouts did not report decreases in their ECBI scores over time, and remained well above the clinical cutpoint 3 years post-baseline. Similarly, a number of studies attest to the stability of child behavior problems over time when left untreated (Foster et al., 2005). Finally, if maturation explained these findings, we would not expect to see maintenance of treatment effects on the CBCL, which is age-normed.

Limitations

Several limitations of this study should be noted. First, the sample size was small; and while clearly large enough to detect symptom change over time, it may not have been sufficient to detect smaller differences between competing treatments. Thus, future research with larger samples is necessary before firm conclusions can be drawn about the relative effectiveness of these three treatment approaches. Second, both the GANA and PCIT conditions were supervised by the first author, while the TAU condition was supervised by community clinic staff. Although every attempt was made to adhere strictly to the respective manuals, it is possible that their similar effectiveness was due to similar supervisory styles. Third, a small number of therapists were involved in treating the study families, making it possible that the relative effectiveness of the interventions was influenced by the skill level of a particular therapist. Fourth, we know little about the TAU condition. It seems safe to assume that the treatment offered was of relatively high quality, given the large effect it had on parent report

measures with strong psychometric properties and the stability of those effects over time. However, beyond describing therapist theoretical orientations, we cannot further characterize what took place in this treatment condition. Furthermore, due to our small sample size, we were unable to examine whether acculturation level moderated treatment outcome, a question that should be examined in future studies. The current findings may not generalize to highly acculturated MAs, who were underrepresented in our sample. The length of time to follow-up also varied greatly from subject to subject, and although the three conditions did not differ on time to follow-up, it is difficult to pin-point the length of time to which these findings can be generalized. Finally, we were unable to collect observational measures at the long-term follow-up due to budgetary constraints. Given that both GANA and PCIT significantly outperformed TAU on all observational measures at post-treatment, this would have been valuable information.

A final caution in interpreting these data is that this study did not attempt to compare a culturally sensitive version of PCIT to a culturally “insensitive” version of PCIT or TAU. All therapists in the study were bilingual and either bicultural or highly familiar with MA culture. Because it is impossible to instruct bicultural therapists to act in a way that is cultural insensitive, we can presume that the standard PCIT and TAU therapists tailored the delivery of the treatments in their manner of building rapport and interacting with families. Thus, to a certain extent, all three versions of treatment offered were likely to be more culturally sensitive than what families would receive from therapists that were not culturally matched, making differences between the therapy conditions even harder to detect.

Conclusions and Future Directions

This study suggests that developing cultural modifications to EBTs is a potentially promising direction for research, because these modifications enhanced outcomes compared with TAU, and these differences persisted up to 24 month post-treatment. PCIT appears to be robust to cultural modifications that are derived by a process that combines input from families, therapists, and treatment developers and these adjustments can be made without injury to outcomes. In the future, these findings should be replicated with larger samples, independent supervision for conditions, and a larger therapist pool. Research on the best approaches to disseminating PCIT to MA families should also be investigated, because it is clear that these families stand to benefit a great deal from this program. It would seem that when possible, cultural adaptations to PCIT for MAs seem to be worth making, although inability to make these adaptations should not preclude the use of the intervention in its standard form for this population. Cultural adaptations, such as those incorporated in GANA, may also offer therapists specific options for adapting the treatment model to the cultural characteristics of the families in their practice. This flexibility may increase the appeal of the PCIT model to therapists who treat ethnic minority families. Further, the model used to adapt PCIT for MAs appears to be a promising approach to the cultural adaptation of interventions, and may find application with other cultural groups and types of interventions (McCabe et al., 2005).

Acknowledgments

This research was supported by National Institute of Mental Health grant K01MH1924 and a Faculty Research Grant from the University of San Diego.

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Highlights

We conducted a pilot randomized clinical trial comparing a culturally modified version of PCIT to a standard version and treatment as usual (TAU) > We compared the treatments parent-reported symptoms 6 to 24 months post-treatment > All three treatments produced improvement at long-term follow-up. > The culturally modified intervention significantly outperformed TAU over the long-term, but the standard version did not. > The culturally modified version differed from the standard version only one measure.

Figure 1:
Consort flow diagram. This figure shows the flow of participants from recruitment through analyses.

Table 1

Sample Demographics (N=58)

Variable	GANa	PCIT	TAU
Male Gender	76.2%	73.7%	61.1%
Child Prefers Spanish	61.9%	73.7%	66.7%
Parent Prefers Spanish	81.0%	84.2%	77.8%
Mother Married	76.2%	63.2%	66.7%
Maternal Education < High School	33.4%	52.6%	66.7%
1st Generation American	71.4%	78.9%	77.8%
Child Age in Months	54.3(11.6)	48.9(9.2)	55.1(15.3)
Yearly Income	\$26,304	\$22,722	\$20,310

Table 2

Means and Standard Deviations of Study Variables and Time 1-Time 3 Effect Sizes

Outcome	Time 1 Means and SDs			Time 3 Means and SDs			T1-T3 Cohen's d		
	PCIT	TAU	GANa	PCIT	TAU	GANa	PCIT	TAU	GANa
ECBI Intensity	178.53 (31.27)	186.44 (28.04)	181.67 (22.49)	100.93 (45.33)	125.46 (39.95)	97.35 (28.70)	1.99	1.77	3.27
ECBI Problem	28.21 (4.69)	27.83 (5.78)	28.62 (3.94)	14.47 (19.10)	17.31 (9.34)	10.30 (8.36)	.99	1.35	2.80
CBCL Internal	60.79 (10.40)	63.22 (10.60)	64.05 (7.21)	51.40 (13.49)	53.08 (9.39)	47.65 (10.14)	.78	1.01	1.86
CBCL External	67.21 (11.99)	69.22 (12.27)	66.95 (8.95)	53.33 (13.47)	57.46 (14.44)	49.60 (9.01)	1.09	.88	1.93
CBCL Total	64.63 (11.57)	67.22 (11.95)	66.10 (7.54)	52.80 (14.43)	55.38 (12.45)	48.40 (9.52)	.91	.97	2.06
ECI ODD	11.79 (6.48)	12.50 (5.72)	15.29 (5.36)	5.20 (5.92)	6.36 (6.36)	4.85 (3.73)	1.06	1.02	2.26
ECI CD	12.26 (13.23)	13.39 (11.10)	13.81 (7.09)	4.27 (5.89)	4.43 (5.61)	3.00 (3.40)	.78	1.02	1.94
ECI ADHD	25.79 (11.19)	30.56 (13.07)	30.29 (10.29)	16.20 (12.73)	21.71 (14.59)	15.35 (9.24)	.80	.64	1.53
PSI Total	89.95 (22.03)	101.17 (21.55)	97.33 (17.21)	78.07 (34.30)	95.39 (32.09)	75.05 (33.55)	.41	.21	.84
PLOC Total	120.00 (19.94)	125.94 (14.38)	123.57 (16.53)	104.40 (30.44)	120.15 (13.79)	94.55 (25.70)	.61	.41	1.34

Table 3

Between Groups Planned Comparisons and Effect Sizes

Outcome	Between Groups Planned Comparisons			Between Groups Cohen's d		
	GANA v. TAU	GANA v. PCIT	PCIT v. TAU	GANA v. TAU	GANA v. PCIT	PCIT v. TAU
ECBI Intensity	$p = .044^*$	$p = .772$	$p = .099$	.81	.09	.57
ECBI Problem	$p = .118$	$p = .344$	$p = .526$	.79	.28	.19
CBCL Internal	$p = .035^*$	$p = .049^*$	$p = .845$	.56	.31	.15
CBCL External	$p = .041^*$	$p = .294$	$p = .311$	.65	.33	.30
CBCL Total	$p = .040^*$	$p = .098$	$p = .646$	.63	.36	.19
ECI ODD	$p = .060$	$p = .126$	$p = .730$	.29	.07	.19
ECI CD	$p = .327$	$p = .117$	$p = .590$	.31	.26	.03
ECI ADHD	$p = .048^*$	$p = .180$	$p = .538$	.52	.08	.40
PSI Total	$p = .100$	$p = .533$	$p = .332$	.62	.09	.52
PLOC Total	$p = .002^{**}$	$p = .101$	$p = .113$	1.24	.35	.67

*
p<.05;**
p<.01