Published in final edited form as:

Cultur Divers Ethnic Minor Psychol. 2011 January ; 17(1): 107–115. doi:10.1037/a0021972.

Child and parental outcomes of a group parenting intervention for Latino families: A pilot study of the CANNE program

Jean E. Dumas,

Department of Psychology, University of Geneva

Ximena Arriaga, and

Purdue University

Angela Moreland Begle

Medical University of South Carolina Zayra Longoria, Purdue University

Abstract

CANNE – *Criando a Nuestros Niños hacia el Éxito*, is the Spanish adaptation of PACE – *Parenting Our Children to Excellence*. A pilot study conducted with 124 parents of preschoolers (mostly recent Mexican immigrants) provides preliminary evidence for the community acceptability and efficacy of CANNE. Eighty-eight of the 124 parents who enrolled in the program attended one or more of the 8 sessions (17% attended 1 session, 11% attended 2-4 sessions, and 72% attended 5 or more sessions), participated actively in sessions, and expressed high degrees of program satisfaction. Over time, parents improved on measures of harsh/inconsistent discipline, and children improved on social competence and social/communication skills. When high versus low attenders were compared, high attenders (parents who attended 4 sessions or more) reported greater increases than low attenders in their appropriate/positive parenting practices and clear expectations, and in their children's social competence and communication skills, and greater decreases in their harsh/inconsistent discipline and in their children's aggressiveness and hyperactivity. Some of these changes were evident by the end of the program, whereas others became apparent (or stronger) over a 3-month follow up period. These encouraging results point to the need for an efficacy study that assesses how well CANNE can help larger numbers of Latino parents in the important task of bringing up their young children in the U.S.

Child and parental outcomes of a group parenting intervention for Latino families: A pilot study of the CANNE program

Harmonious family interactions are essential to positive child and parent outcomes. Across cultures, these interactions contribute to child coping competence, reduce risk of child behavioral and emotional problems, strengthen positive parenting, and reduce risk of ineffective discipline and parenting stress (Dumas, 2005; Dumka, Roosa, & Jackson, 1997; Smith, Prinz, Dumas, & Laughlin, 2001; Szapocznik et al., 1986). Not surprisingly, interventions promoting positive family interactions are central to the treatment and prevention of youth problems. Evidence shows that behaviorally-oriented parenting programs offer a time-limited, cost effective means of fostering harmonious parent-child interactions, either to treat such problems (e.g., Brestan & Eyberg, 1998; Serketich &

Dumas, 1996) or to prevent them (e.g., CPPRG, 1999; Sanders, 2008; Webster-Stratton & Taylor, 2001).

Interventionists wanting to offer parent training to Latino families face two major challenges. First, most manualized programs have been developed for and tested with non-minority families. They reflect European American childrearing beliefs and preferences, and are only available in English. This is critical as more and more U.S. communities seek to provide quality prevention services to an increasingly diverse population, in which the largest minority, the Latino population, is not only growing rapidly but speaks Spanish and shares distinct cultural values and expectations (Calzada & Eyberg, 2002; Varela et al., 2004). The second challenge is that many parents are reluctant or find it difficult to attend a parenting program regularly. Often, they attend a few sessions only and fail to complete the intervention (e.g., Barkley et al., 2000; Spoth & Redmond, 2000). Regular attendance may be particularly problematic for minority families (McKay, McCadam, & Gonzalez, 1996; Orrell-Valente, Pinderhughes, Valente, & Laird, 1999), as many programs may not be culturally relevant and easily accessible to them (e.g., Kumpfer, Alvarado, Smith, & Bellamy, 2002; Zayas & Rojas-Flores, 2002). In short, minority families in general, and Latinos in particular, are frequently underserved.

Provision of culturally-grounded services is a major challenge in addressing the mental health needs of a diverse population (e.g., Dumas, Rollock, Prinz, Hops, & Blechman, 1999). Culturally-relevant interventions for Latino families either have been developed in Spanish (e.g., Szapocznik, & Williams, 2000) or adapted from English programs (e.g., Matos, Torres, Santiago, Jurado, & Rodriguez, 2006), and target parents of children (e.g., Reid, Webster-Stratton, & Beauchaine, 2001) or adolescents (e.g., Coatsworth, Pantin, & Szapocznik, 2002; Martinez & Eddy, 2005). Although language of service delivery obviously matters, the issue at hand is not primarily one of language but rather one of matching any new intervention with the beliefs and values of the target population (Dumas, Arriaga, Begle, & Longoria, 2010).

Developed by Dumas, Arriaga et al. (2010), CANNE – *Criando a Nuestros Niños hacia el Éxito*, is the Spanish adaptation of PACE – *Parenting Our Children to Excellence*. PACE is a research-based preventive intervention designed to support parents of preschoolers through discussions and activities that address practical childrearing issues and promote child coping competence. Successfully delivered in 50 preschools and daycare centers in the Indianapolis area, PACE is held in groups of 10-15 parents, who meet weekly for eight 2-hour sessions. To date, the program has reached over 600 African American and European American parents in comparable proportions. Even when facing significant obstacles, a majority of these parents attended regularly and participated actively in sessions: 60% attended three quarters of the sessions or more and thus received at least 75% of the intended dose (Dumas, Begle, French, & Pearl, 2010). Most importantly, PACE has been found to be efficacious. Parents and children benefited from the program, as indicated by increases in parental efficacy and satisfaction, and decreases in parenting stress, child abuse risk, and child behavior problems over a 1-year follow up period. These benefits were particularly evident when parents attended sessions regularly and participated actively, and when they were 'high risk' parents, who faced significant stressors in their daily lives (Begle & Dumas, in press).

CANNE was developed in response to repeated calls for a Spanish program from the Indianapolis communities in which PACE was evaluated. In the past decade, the city and surrounding areas have seen an unprecedented growth in their Latino population. To illustrate, in the Indianapolis Public Schools, the Latino student population rose by 220% from 2000 to 2005 (IPS Planning Dept., April 21 2006) and the number of limited English-

speaking children tripled from 2000 to 2009 (IPS, 2009). Most families accounting for these increases are recent immigrants from Mexico and other Central American countries. They come with little or no English proficiency and therefore only limited access to school and community services.

CANNE is the outcome of a systematic process of adaptation described elsewhere (Dumas, Arriaga et al., 2010). Briefly summarized, we sought to balance emic and etic considerations (Dumas et al., 1999) by relying on: (1) extensive consultation with parents, service providers, and community leaders, (2) adaptation and translation of the manual, and evaluation of the degree of correspondence between the Spanish and English versions (adaptation fidelity), and (3) translation and cross-language comparison of measures available in English only. This resulted in a Spanish program with close conceptual and methodological correspondence with the original, but with a distinct cultural and practical orientation that makes it much more than a translation.

Conceptually, CANNE is a health promotion, not a treatment, program. It focuses on bicultural effectiveness to help participants promote their own and their children's ability to navigate effectively within and across both Latino and U.S. cultures. Methodologically, the program's contents and methods of presentation were modified to integrate Latino cultural assumptions and priorities, and to address childrearing differences between the U. S., Mexico, and other Latin American countries (see Dumas, Arriaga et al., 2010). For example, adaptation included consideration of Latino cultural values (e.g., *respeto*, *familismo*) in the presentation of encouragement, reward, and discipline strategies, and knowledge and communication issues to facilitate family access to community resources. This was designed to insure that CANNE promotes greater understanding and familiarity with American society that, unlike their English-speaking counterparts, recent immigrants to the U.S. cannot be assumed to have (Halgunseth, Ispa, & Rudy, 2006).

Like its English counterpart, CANNE is manualized in terms of content and process, and addresses childrearing concerns commonly experienced by parents of young children in a format that fosters active participation and mutual support. Sessions cover eight topics: (1) Bringing out the best in our children, (2) Setting clear limits for our children, (3) Helping our children behave well at home and beyond, (4) Making sure our children get enough sleep, (5) Encouraging our children's early thinking skills, (6) Developing our children's self-esteem, (7) Helping our children do well at school, and (8) Anticipating challenges and seeking support. Group leaders conduct guided discussions, use role plays, and show short video clips to present each topic.

Following adaptation, we conducted a pilot study to determine the extent to which Latino parents were willing to attend CANNE and, when they did, the degree to which they and their children benefited from it. The study focused on measures of program attendance and participation, and child and parent functioning. Measures were collected from group leaders and assistants at the end of each session, and from parents at three time points: Time 1 (before the program), Time 2 (at the end of the program), and Time 3 (at a 3-month follow-up). They included: (1) sociodemographic and acculturation measures; (2) measures of child coping competence, and behavioral and emotional problems; and (3) measures of parental discipline and positive parenting practices, and of program attendance, participation in sessions, and satisfaction. The program consisted of eight 2-hour group sessions held on consecutive weeks. All activities – data collection and program – were conducted in Spanish.

In line with the PACE results summarized above, we hypothesized that parents who engaged in CANNE would: (1) attend regularly and participate actively in sessions; (2) report

significant benefits in terms of their children's adjustment and of their parenting practices; (3) report benefits commensurate with the number of sessions they attended; and (4) report high levels of program satisfaction.

Method

Sample

Parents of children aged 3-6 were recruited in two Midwestern cities (approximate populations of 85,000 and 785,000) by distributing flyers at elementary schools and churches with Spanish language services, and describing the program at school parent meetings. Interested parents provided contact information (name, phone number) on an individualized sheet to maintain privacy, and were informed that a program representative would contact them via telephone.

Of the 232 parents who provided contact information, 65 could not be reached (wrong/disconnected phone number), 37 were not interested or available to attend the program, and 6 did not have children aged 3-6. This left a sample of 124 parents, who registered for the program and completed the Time 1 interview. Of these, 111 completed the Time 2 interview (90% retention) and 106 the Time 3 interview (85% retention from first assessment, 95% retention from second assessment). Parents who completed all three interviews ($n=106$) were compared to parents who did not ($n=18$) on eight sociodemographic measures (parental gender, age, marital status, education, employment status, family income, and child gender and age) and on all dependent variables. All t -tests were non-significant.

The sample of 124 parents included 117 women and 7 men (median age=31; mean=31.57; range 19-47). Ninety-eight (79%) reported Mexico as their country of origin; 16 (13%) the United States, and the remaining 10 (8%) Bolivia, Colombia, El Salvador, Guatemala, or Honduras. Ninety-eight percent self-identified as Hispanic and 2% as Caucasian. All were fluent Spanish speakers; 94% reported their primary language to be Spanish and 6% English. Fifty-seven percent were married or lived with an adult partner; 43% were single. Twenty-eight percent did not complete high school, 25% completed some high school, 25% graduated from high school, and 22% had college experience. A majority was unemployed (59%). Median annual household income ranged from \$15,000 to \$19,999. The 124 children targeted by the program included 57 girls and 67 boys (median age=4; mean=4.32; range 2-6).

Procedures

All procedures were approved by the Institutional Review Board of Purdue University.

Staff training—Prior to the start of the study, we recruited and trained interviewers, group leaders, and group assistants who spoke Spanish fluently (all but two were native speakers). Interviewers underwent four hours of training by two of the authors to ensure that they could establish rapport with parents, field questions without straying from the wording of the interview, and work through the interview in a timely manner. Group leaders and assistants ($n=7$, some of whom served as leader for one group and assistant for another) all had training and between 2 and 7 years of experience in social work, education or healthcare ($M=4.75$, $SD=1.89$). They participated in a two-day training workshop that focused on mastering the program's content and process, maintaining fidelity, establishing rapport and eliciting parent involvement and discussion, and troubleshooting (e.g., dealing with resistance, remaining objective when disagreeing, and avoiding situations in which a few parents dominate the discussion). Group leaders were supervised weekly and observed on

multiple occasions by a senior member of staff to ensure that they delivered the program effectively.

Interviews—Interviewers contacted parents by phone to schedule home interviews. In two-parent households, the same parent completed all three interviews. Interviewers followed a script to conduct each interview, which lasted 60-90 minutes at Time 1 and 45-60 minutes at Times 2 and 3. When parents had more than one child in the targeted age range, interviewers instructed them to select one of them and to report on that child for all three interviews. Parents received \$15 for each interview.

Parenting groups—Each group leader was in charge of delivering the entire program to the same group of parents, with assistants providing support (e.g., setting up video, holding posters, helping with role plays). In total, 11 parenting groups were offered, each with up to 15 parents who attended singly or in couples. Two groups met during the day and the other 9 in the early evening. Participants received a free meal before each session, \$5 to offset travel expenses, and free on-site childcare.

Measures

When both parents of a target child attended the program, we asked them to decide which parent would complete the measures at all three time points, to insure that all measures were always completed by the same parent. Sociodemographic and acculturation measures were collected at Time 1. Attendance and participation measures were obtained at the end of each session. Outcome measures (seven measures of child functioning and three of parenting practices) were collected at Times 1, 2, and 3. Program satisfaction measures were collected twice, at the end of sessions 4 and 8. Measures unavailable in Spanish were translated following commonly accepted procedures to establish cross-language equivalence (see Dumas, Arriaga et al., 2010).

Sociodemographic characteristics—Sociodemographic information included parent gender, age, marital status, ethnicity, primary language, education, employment, family income, child gender and age (see sample description above).

Acculturation—Parents completed the revised *Acculturation Rating Scale for Mexican Americans* (Cuéllar, Arnold, & Maldonado, 1995). Available in Spanish, this 20-item scale evaluates language familiarity and use, ethnic interaction, ethnic identity and pride, and generational ties to Mexico. The scale has adequate reliability (Cronbach α s, .80-.88) and its factor structure corresponds well with that of the original instrument. In this study, average α s were .66 for the 17 items assessing *Mexican orientation* (e.g., “I enjoy Spanish language TV”) and .86 for the 13 items assessing *Anglo orientation* (e.g., “I associate with Anglos”). Items were averaged to assess these constructs, with higher numbers indicating higher levels of the construct.

Attendance—Whether parents attended each of the eight sessions (1) or not (0) served as the measure of attendance, which was summed to form an overall attendance score ranging from 0 to 8.

Quality of participation—After each session, the group leader and assistant independently rated each parent's quality of participation on a scale of 1 to 5 (i.e., “Overall, how well did the parent participate during the session?”; 1 = “Did not participate or obstructed group functioning and activities” to 5 = “Participated enthusiastically. Was obviously interested and attentive to other group participants”). Each anchor point had specific definitions that leaders and assistants had been trained to use. As their answers were

internally consistent (Cronbach's $\alpha=.93$ for leaders and $.97$ for assistants) and significantly correlated ($r=.44, p<.001$), they were averaged over all attended sessions to yield a single quality of participation score per parent.

Child coping competence and behavioral and emotional problems—Parents completed two measures available in Spanish to evaluate child coping competence and behavioral and emotional problems. The Social Competence and Behavior Evaluation Scale, Short Form (SCBE30, LaFreniere & Dumas, 1996) is a 30-item scale of social competence, anxiety-withdrawal, and anger-aggression in preschoolers. The Spanish version has satisfactory internal consistency (α s, $.77-.92$) and test-retest reliability (Pearson r s, $.73-.88$), and a factor structure corresponding closely to the original measure (Dumas, Martinez, & LaFreniere, 1998; Dumas, Martinez, LaFreniere, & Dolz, 1998). In this study, the 10 *social competence* items (e.g., “Negotiates solutions to conflicts with other children”) had an average α of $.77$ for Time 1 to Time 3 (range $.70-.82$); the 10 *anger/aggression* items (e.g., “Irritable, gets mad easily”) had an average α of $.75$ (range $.72-.78$); and the 10 *anxiety/withdrawal* items (e.g., “Remains apart, isolated from other children”) had an average α of $.68$ (range $.65-.71$). Items were averaged to assess each of these constructs, with higher numbers indicating higher levels of the construct.

The Behavior Assessment System for Children, 2nd ed—(BASC2, Reynolds & Kamphaus, 2005) is a 134-item scale of social competence, and internalizing and externalizing behavior problems. The Spanish and English versions have satisfactory internal consistency (Cronbach α s, $.70-.88$) and test-retest reliability (Pearson r s, $.66-.88$) and yield comparable pictures of child functioning (McCloskey, Hess, & D'Amato, 2003).

The current analysis included 10 social skills items (e.g., “Says, ‘please’ and ‘thank you’”) and 11 communication skills items (e.g., “Communicates clearly”) that were combined to measure *social/communication skills* (average Time 1 to Time 3 $\alpha=.83$, range $.82-.84$); 11 *aggression* items (e.g., “Argues when denied own way”) (average $\alpha=.84$, range $.79-.89$); 10 *hyperactivity* items (e.g., “Is unable to slow down”) and 6 *attention problems* items (e.g., “Has a short attention span”) that were combined to measure *hyperactivity/inattention* (average $\alpha=.74$, range $.69-.75$); and 11 *anxiety* items (e.g., “Is fearful”) and 13 *withdrawal* items (e.g., “Avoids other children”) that were combined to measure *anxiety/withdrawal* (average $\alpha=.79$, range $.71-.86$). Items were averaged to assess each of these constructs, with higher numbers indicating higher levels of the construct.

Parenting practices—Parents completed the *Parenting Practices Interview* (PPI, Webster-Stratton, Reid, & Hammond, 2001). This 54-item measure is an adaptation of the Oregon Social Learning Center's Discipline Questionnaire for use with parents of preschoolers. Its scales, which focus on effective and ineffective discipline and on emotional support and reinforcement, have adequate internal consistency and are sensitive to intervention effects when used with parents from diverse ethnic backgrounds, including Latino groups (Brotman et al., 2005; Webster-Stratton, 1998).

The current analysis used 6 harsh discipline items (e.g., “Slap or hit your child (not including spanking)”) and 6 inconsistent discipline items (e.g., “How often is your child successful in getting around the rules you have set?”) that were combined to measure *harsh/inconsistent discipline* (average $\alpha=.70$, range $.67-.73$); 8 appropriate discipline items (e.g., “Discuss the problem with your child or ask questions”) and 7 positive parenting items that were combined to measure *appropriate/positive discipline* (average $\alpha=.65$, range $.63-.66$); and 3 *clear expectations* items (e.g., “I have made clear rules or expectations for my child about going to bed and getting up on time”) (average $\alpha=.60$, range $.54-.65$). The last three items did not exhibit reliabilities comparable to other items, possibly because they each

target specific expectations. Items were averaged to assess each of these constructs, with higher numbers indicating higher levels of the construct.

Program satisfaction—Parents completed the *PACE Social Validity Survey* twice, which we translated for the purpose of this study. Items measured the extent to which parents were satisfied with the group leaders (2 items; e.g., “The group leaders respect my values and opinions”); accepted the program goals (2 items; e.g., “The program goals are important to me”); found the program beneficial (2 items; e.g., “My family gets along better since we began the program”); and would recommend the program (2 items; e.g., “I would recommend this program to other parents like me”). Internal consistencies ranged from .70 to .99 (average $\alpha=.95$). Items were averaged to assess each dimension, with higher numbers indicating higher levels of satisfaction.

Data Analyses

First, analyses were conducted to describe the sample and to examine differences between parents who attended and participated in the program regularly and those who did not. Second, because parents were nested within parenting groups, one-way analyses of variance (ANOVAs) were conducted to investigate whether groups differed from one another on Time 1 measures of child functioning and parenting practices; and repeated measures ANOVAs were conducted to determine the extent to which child functioning and parenting practices changed over time. Finally, repeated measures ANOVAs were used to evaluate whether changes in child functioning and parenting practices differed as a function of program attendance

Results

Acculturation

The sample was relatively unacculturated: 119 parents were first-generation immigrants (born in Mexico or another Latin American country); 3 second-generation immigrants (born in USA; either parent born in Mexico or another Latin American country); 1 fourth-generation immigrant (self and parents born in USA; one or more grandparents born in Mexico or another Latin American country); and 1 fifth-generation immigrant (self, parents, and grandparents born in USA). Using Cuéllar et al.'s (1995, Tables 1 and 2) criteria for determining acculturation type and level, 83% were of “Traditional Mexican” type; 76% were “Very Mexican oriented” (Level I), 17% were “Mexican oriented to approximately balanced bicultural” (Level II), and 7% were “Slightly Anglo oriented bicultural” (Level III). None were “Strongly Anglo oriented” or “Very assimilated; Anglicized” (Levels IV or V).

Program Attendance and Quality of Participation

Descriptive analyses were conducted to test hypothesis 1 that parents would attend the program regularly and participate actively in sessions. Of the 124 parents who enrolled in CANNE, 36 (29%) never attended the program. Of the 88 parents who enrolled and attended, 15 came to 1 session (17%), 3 to 2 sessions (3%), 5 to 3 sessions (6%), 2 to 4 sessions (2%), 7 to 5 sessions (8%), 11 to 6 sessions (13%), 24 to 7 sessions (27%), and 21 to 8 sessions (24%). Thus, almost three quarters of parents attended 5 or more sessions. Given the U-shaped distribution of the data, parents were split into LO and HI attenders (i.e., parents who came to 3 sessions or fewer, $n=65$, versus 4 sessions or more, $n=59$). Similar methodology has been used in other outcome research to assess ‘dosage’ effects (Bradley et al., 2003; Frankel & Simmons, 1992; Peters, Calam, & Harrington, 2005).

Quality of participation in sessions was high, as 99% of parents received average participation ratings of 3 or more out of 5, and 77% of 4 or more out of 5 ($M=4.22$, $SD=0.37$ (on a scale ranging from 1=no or disruptive participation to 5=active, enthusiastic participation). Average participation ratings were comparable for LO and HI attenders ($M=4.03$, $SD=0.46$, and $M=4.28$, $SD=0.31$, $X^2(79)=75.53$, ns).

Program Outcomes

Given that participants were nested within parenting groups, preliminary analyses assessed whether groups differed on any of the outcome variables at Time 1 and across the three time points to control for such differences as necessary. Time 1 ANOVAs and repeated-measures ANOVAs across times showed that groups were comparable on the seven measures of child functioning and on two of the three measures of parenting practices. As levels of harsh/inconsistent discipline differed across groups at Time 1 and across times, we controlled for this difference in subsequent analyses (see Table 1).

To test hypotheses 2 and 3 that program attendance would bring significant benefits and that those benefits would reflect number of sessions attended (between-subjects variable), repeated measures ANOVAs were conducted on the child functioning and parenting practices variables at Times 1, 2, and 3 (within-subjects variable). These analyses compared overall mean changes over the three times in these variables, as well as mean changes for LO vs. HI attenders. Table 2 shows that, as predicted by hypothesis 2, there were significant main effects for time for all seven measures of child functioning and two of the three measures of parenting practices. The table shows also that, as predicted by hypothesis 3, there were significant or marginally significant time X attendance interactions for four measures of child functioning and all three measures of parenting practices.

Considering child functioning first, children's social competence and social/communication skills improved significantly from Time 1 to Time 2. Improvements in social competence reflected attendance, as HI attenders reported continuing increases in competence in the follow up period, whereas LO attenders reported a return to baseline. In parallel, children's aggression (measured with the SCBE30 and the BASC2) decreased significantly from Time 1 to Time 2 and again from Time 2 to Time 3. These changes varied also as a function of attendance. Although the multivariate interaction effects were only marginally significant ($p < .10$), univariate contrasts showed that HI attenders reported greater reductions in SCBE30 anger/aggression from Time 1 to Time 2 and in BASC2 aggression from Time 2 to Time 3 than LO attenders. Similarly, children's hyperactivity decreased significantly from Time 1 to Time 2 and again from Time 2 to Time 3. This improvement reflected attendance also, as HI attenders reported continuing decreases in hyperactivity in follow up, whereas LO attenders did not. Finally, children's anxiety/withdrawal (measured with the SCBE30 and the BASC2) decreased significantly from Time 1 to Time 2, but not as a function of attendance.

Turning to parenting practices, participants reported decreases in harsh/inconsistent discipline, but not across groups (as groups differed on this measure across times; Wilk's (2, 100)=3.93, $p < .05$). However, program benefits were evident on this measure for HI attenders. Similarly, participants reported improvements in appropriate/positive discipline and in clear expectations from Time 1 to Time 2. Here also, these improvements were greater for HI than for LO attenders.

Program Satisfaction

Satisfaction data were collected from all parents who attended sessions 4 and 8 of the program; parents who were absent were reached by telephone. Parents reported high levels of program satisfaction. On a 5-point scale, they were satisfied with the group leaders

($M=4.90$, $SD=.36$); accepted the program goals ($M=4.92$, $SD=.35$); found the program beneficial ($M=4.75$, $SD=.46$); and would recommend the program to others ($M=4.92$, $SD=.41$).

Discussion

Results provide preliminary evidence for the community acceptability and efficacy of CANNE. Although 29% of parents who enrolled never attended the program, 72% of attenders came to 5 or more sessions (out of 8) and 51% came to 7 or 8 sessions. Most attenders participated actively in sessions, as quality of participation scores were highly skewed toward the upper end of the scale. These findings support our first hypothesis that parents would attend CANNE regularly and participate actively in sessions. Support for this hypothesis was also found beyond numbers. Many parents expressed their appreciation for the program by regularly thanking staff and, when unable to attend a session, often called in advance to apologize and to let staff know that they would come to the following session. More broadly, the percentage of parents who attended CANNE is comparable to the percentage of parents who attended PACE, its English counterpart (Begle & Dumas, in press). Although we would obviously have liked more participants who enrolled to have come to sessions, this is a common problem in parenting interventions. For example, three recent reports show that between 32% and 76% of parents attended the program in which they had enrolled or to which they had been referred (DePanfilis & Dubowitz, 2005; Duggan et al., 2004; Gershater-Molko, Lutzker, & Wesch, 2003).

Strong support was also found for our second and third hypotheses, as parents reported significant program benefits that, in most cases, were commensurate with the number of sessions they attended. Overall, parents reported significant improvements on all seven measures of child functioning and on two of the three measures of parenting practices over time. In most cases, these improvements were of greater magnitude for HI than for LO attenders. These results are consistent with findings showing that, in PACE also, program benefits tend to increase as attendance increases (Begle & Dumas, 2010).

We are particularly encouraged by the fact that parents who attended CANNE regularly reported significant increases in their appropriate/positive parenting practices and in their children's social competence and communication skills, and corresponding decreases in their harsh/inconsistent discipline and in their children's aggressiveness and hyperactivity. The fact that some changes in child functioning were evident by the end of the program already but that others only became apparent (or stronger) over the follow up period suggests that there may be a lag in some program effects – either because new parenting practices do not have immediate effects on young children and/or because parents may need time to notice changes in child behavior when their practices change.

Finally, as our last hypothesis predicted, parents reported high levels of program satisfaction. They were satisfied with the group leaders, accepted the program goals, found the program beneficial, and reported that they would recommend the program to others. Informal evidence of their satisfaction came also from the fact that many parents and community agency representatives expressed disappointment when the program came to an end, and referred relatives and friends to inquire about CANNE.

Limitations

Important limitations must be considered. First, the quasi-experimental study design prevents us from ascribing the positive changes just summarized to the program. The fact that several of these changes varied as a function of parental attendance suggests that CANNE may be efficacious but alternative explanations (e.g., child maturation) cannot be

ruled out. Second, our findings indicate that parents who benefited most from CANNE attended sessions regularly. However, this does not necessarily imply that LO attendance was synonymous with poor outcomes. Some LO attenders may have felt that they had benefitted enough from the program after a few sessions already, whereas other may have decided not to come back after a few sessions because the program was not meeting their needs. An intent-to-treat analysis would have addressed this issue more fully, something that a future efficacy study will need to consider. Third, although the sample was relatively large for a pilot study and drawn from two cities that have witnessed a significant influx of Mexican families in recent years, the extent to which these families were representative of US Latino families is unknown. Our acculturation measure suggests that the sample was representative of lower to lower-middle class, Spanish-speaking families, mostly of Mexican origin. Consequently, we caution against overgeneralization to other Latino groups, or even to Mexican families as a whole, because families were self-selected for participation in the study. Similarly, our sample consisted mostly of mothers. Although we acknowledge with others that “intervention researchers need to pay more attention to the participation of Latino fathers, as they are typically influential members of the family system” (Dumka, Lopez, & Jacobs, 2002), we found fathers much more difficult to recruit, probably due to barriers that have often been reported in the literature, such as gender roles and demanding work schedules (McCabe et al., 2005). Therefore, we also caution against overgeneralization of our findings to Latino fathers. Fourth, our measures were limited to parental reports of child functioning and parenting practices; inclusion of data from other informants would have improved the robustness of the findings. Similarly, the internal consistency of some of the measures fell below .70, which may have impacted the findings. Future research should aim to validate these measures further in Spanish to determine how their reliability may best be improved. Finally, our results may only be relevant to similar universal prevention settings. They may not generalize to settings in which parents of children with behavioral and/or emotional problems are invited to enroll.

Implications for Preventive Services for Latino Families

Improving the range of health services for persons with limited English proficiency in the U.S. is a demographic imperative (Office of Minority Health, 2006). The challenge is acute for Latino families, who represent a rapidly growing minority, with larger households and a higher concentration of preschoolers than other ethnic groups (Cauce & Rodriguez, 2001; U.S. Census Bureau, 2006). CANNE may be a promising program to address the educational concerns of immigrant Latino parents (or, at least, mothers), many of whom: (1) lack extended family support in their children's growing years; (2) are unfamiliar with the “way things work” in the U.S. and see many of their cultural values and practices questioned by the majority culture; and (3) do not speak English and may be suspicious of people who do (especially when they are undocumented residents). One of CANNE's strengths is that it is offered in groups. This gives parents who face similar challenges an opportunity to share ideas and to test new parenting practices in a context in which other parents provide support and encouragement.

Preventive group parenting programs have become increasingly available (e.g., Bradley et al., 2003; Sanders, 2008; Segal, Chen, Gordon, Kacir, & Gyls, 2003; Webster-Stratton, Reid, & Hammond, 2004). However, they may not be equally feasible and accessible to community agencies wishing to reach Latino parents with young children. Specifically, these programs are not always available in Spanish and, when they are, can be expensive to deliver because they must be purchased and often require intensive staff training and supervision. Moreover, some programs are lengthy (lasting for up to 24 weeks), consist of only one component within a comprehensive community intervention, focus solely on the reduction of conduct problems, and/or rely primarily on instruction through videotapes.

CANNE is designed to address these limitations. The program is not a mere translation of its English parent (PACE). It was adapted in a thorough process of community consultation to meet the educational needs of Latino parents of young children, many of whom are less familiar with American culture and expectations than their English-speaking counterparts. Further, CANNE is equal or shorter in length than comparable programs, is delivered in a group format that maximizes opportunities for parental participation and support, and can be implemented by paraprofessionals (who must undergo a relatively short training and be regularly supervised). If these features are desirable, however, they do not demonstrate CANNE's efficacy. The challenge now is to conduct an efficacy study to demonstrate that CANNE can reach Latino parents in large numbers and can help them in the important task of bringing up their young children in the U.S.

Acknowledgments

This study would not have been possible without the collaboration of parents and children who participated in various aspects of the research, and of staff members who played major roles in data collection and program implementation. Their help and encouragement are gratefully acknowledged. The study was supported by grants R21MH077680 from the National Institute of Mental Health and R49/CCR 522339 from the Centers for Disease Control and Prevention.

References

- Barkley RA, Shelton TL, Crosswait C, Moorehouse M, Fletcher K, Barrett S, Jenkins L, Metevia L. Multi-method psycho-educational intervention for preschool children with disruptive behavior: Preliminary results at post-treatment. *Journal of Child Psychology and Psychiatry*. 2000; 41:319–332. [PubMed: 10784079]
- Begle AM, Dumas JE. Child and parental outcomes following involvement in a preventive intervention: Efficacy of the PACE program. *Journal of Primary Prevention*. in press.
- Bradley SJ, Jadaa D, Brody J, Landy S, Tallett SE, Watson W, Shea B, Stephens D. Brief psychoeducational parenting program: An evaluation and 1-year follow-up. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42:1171–1178. [PubMed: 14560166]
- Brestan EV, Eyberg SM. Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology*. 1998; 27:180–189. [PubMed: 9648035]
- Brotman LM, Gouley KK, Chesir-Teran D, Dennis T, Klein RG, Shrout P. Prevention for preschoolers at high risk for conduct problems: Immediate outcomes on parenting practices and child social competence. *Journal of Clinical Child and Adolescent Psychology*. 2005; 34:724–734. [PubMed: 16232069]
- Calzada EJ, Eyberg SM. Self-reported parenting practices in Dominican and Puerto Rican mothers of young children. *Journal of Clinical Child and Adolescent Psychology*. 2002; 31:354–363. [PubMed: 12149973]
- Cauce, AM.; Rodriguez, MD. Latino families: Myths and realities.. In: Contreras, JM.; Kerns, A.; Neal-Bernett, AM., editors. *Latino children and families in the United States: Current research and future directions*. Greenwood; Westport, CT: 2001. p. 3-26.
- Coatsworth JD, Pantin H, Szapocznik J. Familias Unidas: A family-centered ecodevelopmental intervention to reduce risk for problem behavior among Hispanic adolescents. *Clinical Child and Family Psychology Review*. 2002; 5:113–132. [PubMed: 12093012]
- CPPRG, Conduct Problems Prevention Research Group. Initial impact of the Fast Track prevention trial for conduct problems: I. The high-risk sample. *Journal of Consulting and Clinical Psychology*. 1999; 67:631–647. [PubMed: 10535230]
- Cuéllar I, Arnold B, Maldonado R. Acculturation rating scale for Mexican Americans-II: A revision of the original ARSMA scale. *Latino Journal of Behavioral Sciences*. 1995; 17:199–217.
- DePanfilis D, Dubowitz H. Family Connections: A Program for preventing child neglect. *Child Maltreatment*. 2005; 10:108–123. [PubMed: 15798007]

- Duggan A, McFarlane E, Fuddy L, Burrell L, Higman SM, Windham A, Sia C. Randomized trial of a statewide home visiting program: Impact in preventing child abuse and neglect. *Child Abuse & Neglect*. 2004; 28:597–622. [PubMed: 15193851]
- Dumas, JE. The dynamics of positive parenting: Psychological, social and cultural contexts.. In: Grietens, H.; Lahaye, W.; Hellinckx, W.; Vandemeulebroecke, L., editors. *In the best interests of children and youth. International perspectives*. Leuven University Press; Leuven, Belgium: 2005. p. 27-46.
- Dumas JE, Arriaga X, Begle AM, Longoria Z. “When will your program be available in Spanish?” Adapting an early parenting intervention for Latino families. *Cognitive and Behavioral Practice*. 2010; 17:176–187. [PubMed: 20607140]
- Dumas JE, Begle AM, French BF, Pearl AM. Effects of monetary incentives on engagement in the PACE parenting program. *Journal of Clinical Child and Adolescent Psychology*. 2010; 39:302–313. [PubMed: 20419572]
- Dumas JE, Martinez A, LaFreniere PJ. The Spanish version of the Social Competence and Behavior Evaluation (SCBE)-Preschool Edition: Translation and field testing. *Hispanic Journal of Behavioral Sciences*. 1998; 20:255–269.
- Dumas JE, Martinez A, LaFreniere PJ, Dolz L. La versión española del cuestionario “Perfil Socio-Afectivo Preescolar”: adaptación y validación. *Psicológica. Revista de Metodología y Psicología Experimental*. 1998; 19:107–121.
- Dumas JE, Rollock D, Prinz RJ, Hops H, Blechman EA. Cultural sensitivity: Problems and solutions in applied and preventive intervention. *Applied and Preventive Psychology*. 1999; 8:175–196.
- Dumka, LE.; Lopez, VA.; Jacobs, CS. Parenting interventions adapted for Latino families: Progress and prospects.. In: Contreras, JM.; Kerns, KA.; Neal-Barnett, AM., editors. *Latino Children and Families in the United States*. Praeger; Westport, CT: 2002. p. 203-231.
- Dumka LE, Roosa MW, Jackson KM. Risk, conflict, mothers’ parenting, and children’s adjustment in low-income, Mexican immigrant and Mexican American families. *Journal of Marriage and the Family*. 1997; 59:309–323.
- Frankel F, Simmons JQ. Parent behavioural training: Why and when some parents drop out. *Journal of Clinical Child Psychology*. 1992; 21:322–330.
- Gershater-Molko RM, Lutzker JR, Wesch D. Project SafeCare: Improving health, safety, and parenting skills in families reported for, and at-risk for child maltreatment. *Journal of Family Violence*. 2003; 18:377–386.
- Halgunseth LC, Ispa JM, Rudy D. Parental control in Latino families: An integrated review of the literature. *Child Development*. 2006; 77:1282–1297. [PubMed: 16999798]
- IPS, Indianapolis Public Schools. 2009.
http://www.superintendent.ips.k12.in.us/fileadmin/Assets/Superintendent/State_of_the_District_2009.pdf
- Kumpfer KL, Alvarado R, Smith P, Bellamy N. Cultural sensitivity and adaptation in family-based prevention interventions. *Prevention Science*. 2002; 3:241–246. [PubMed: 12387558]
- LaFreniere PJ, Dumas JE. Social Competence and Behavior Evaluation in children ages 3 to 6 years: The Short Form (SCBE 30). *Psychological Assessment*. 1996; 8:369–377.
- Martinez CR, Eddy JM. Effects of culturally adapted parent management training on Latino youth behavioral health outcomes. *Journal of Consulting and Clinical Psychology*. 2005; 73:841–851. [PubMed: 16287384]
- Matos M, Torres R, Santiago R, Jurado M, Rodriguez I. Adaptation of parent-child interaction therapy for Puerto Rican families: A preliminary study. *Family Process*. 2006; 45:205–222. [PubMed: 16768019]
- McCloskey DM, Hess RS, D’Amato RC. Evaluating the utility of the Spanish version of the Behavior Assessment System for Child-Parent report system. *Journal of Psychoeducational Assessment*. 2003; 21:325–337.
- McKay MM, McCadam K, Gonzalez JJ. Addressing the barriers to mental health services for inner city children and their caretakers. *Community Mental Health Journal*. 1996; 32:353–261. [PubMed: 8840078]

- Office of Minority Health. Closing the gap. U.S. Department of Health and Human Services; Washington, DC: 2006. <http://www.omhrc.gov/healthgap/2006factsheet.aspx>
- Orrell-Valente JK, Pinderhughes EE, Valente E, Laird RD, Conduct Problems Prevention Research Group. If it's offered, will they come? Influences on parent's participation in a community-based conduct problems prevention program. *American Journal of Community Psychology*. 1999; 27:753–783. [PubMed: 10723534]
- Peters S, Calam R, Harrington R. Maternal attributions and expressed emotion as predictors of attendance at parent management training. *Journal of Child Psychology and Psychiatry*. 2005; 46:436–448. [PubMed: 15819652]
- Reid MJ, Webster-Stratton C, Beauchaine TP. Parent training in Head Start: A comparison of program response among African American, Asian American, Caucasian, and Latino mothers. *Prevention Science*. 2001; 2:209–227. [PubMed: 11833925]
- Reynolds, CR.; Kamphaus, RW. *Behavior Assessment for Children*. 2nd. ed.. AGS Publishing; Circle Pine, MN: 2005.
- Sanders MR. Triple P – Positive Parenting Program as a public health approach to strengthening parenting. *Journal of Family Psychology*. 2008; 22:506–517. [PubMed: 18729665]
- Segal D, Chen PY, Gordon DA, Kacir CD, Gyls J. Development and evaluation of a parenting intervention program : Integration of scientific and practical approaches. *International Journal of Human-Computer Interaction*. 2003; 15:453–467.
- Serketich WJ, Dumas JE. The effectiveness of behavioral parent training to modify antisocial behavior in children: A meta-analysis. *Behavior Therapy*. 1996; 27:171–186.
- Smith EP, Prinz RJ, Dumas JE, Laughlin JE. Latent models of family processes in African American families: Relationships to child competence, achievement, and problem behavior. *Journal of Marriage and Family*. 2001; 63:967–980.
- Spoth R, Redmond C. Research on family engagement in preventive interventions: Toward improved use of scientific findings in primary prevention practice. *The Journal of Primary Prevention*. 2000; 21:267–284.
- Szapocznik J, Santisteban D, Rio A, Perez-Vidal A, Kurtines W, Hervis O. Bicultural effectiveness training: An intervention modality for families experiencing intergenerational/intercultural conflict. *Latino Journal of Behavioral Sciences*. 1986; 8:303–330.
- Szapocznik J, Williams RA. Brief Strategic Family Therapy: Twenty-five years of interplay among theory, research and practice in adolescent behavior problems and drug abuse. *Clinical Child and Family Psychology Review*. 2000; 3:117–134. [PubMed: 11227062]
- U.S. Census Bureau. Latino Heritage Month 2006: September 15-October 15. Facts for Features, CB06-FF.14. Author; Washington, DC: 2006.
- Varela RE, Vernberg EM, Sanchez-Sosa JJ, Riveros A, Mitchell M, Mashunkashey J. Parenting style of Mexican, Mexican American, and Caucasian-Non-Latino families: Social context and cultural influences. *Journal of Family Psychology*. 2004; 18:651–657. [PubMed: 15598170]
- Webster-Stratton C. Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology*. 1998; 66:715–730. [PubMed: 9803690]
- Webster-Stratton C, Reid MJ, Hammond M. Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology*. 2001; 38:283–302. [PubMed: 11501247]
- Webster-Stratton C, Reid MJ, Hammond M. Treating children with early onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33:105–124. [PubMed: 15028546]
- Webster-Stratton C, Taylor T. Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0–8 years). *Prevention Science*. 2001; 2:165–192. [PubMed: 11678292]
- Zayas, LH.; Rojas-Flores, L. Learning from Latino parents: Combining etic and emic approaches to designing interventions.. In: Contreras, JM.; Kerns, KA.; Neal-Barnett, AM., editors. *Latino children and families in the United States: Current research and future directions*. Greenwood; Westport, CT: 2002. p. 233-251.

Preliminary Analyses to Control for Parenting Group Differences in Outcome Measures at Time 1 and Across Time Points

Table 1

	Group differences at T1			Group differences across time (group × time interaction)	
	F (10,113)	p	Wilk's (2,101)	p	
SCBE30	Social competence	1.31	ns	0.95	ns
	Anger/aggression	1.20	ns	1.77	ns
	Anxiety/withdrawal	1.18	ns	0.43	ns
BASC2	Social/communication skills	1.66	ns	1.14	ns
	Aggression	1.27	ns	0.94	ns
	Hyperactivity	0.76	ns	1.54	ns
PPI	Anxiety/withdrawal	0.42	ns	0.66	ns
	Harsh/inconsistent discipline	2.57	.01	3.99	.05
	Appropriate/positive discipline	1.73	ns	0.55	ns
	Clear expectations	1.35	ns	0.92	ns

Table 2

Outcome Analyses: Changes in Group Means across Time, Overall and as a Function of Program Attendance

		Means			Multivariate tests (<i>df</i> 2,101)			Univariate contrasts (<i>df</i> 1,102)		
		Time 1 Time 2 Time 3			time	Wilk's <i>p</i>	time × attendance	time	F	time × attendance <i>p</i>
SCBE30	Social competence									
	Overall	4.07 (0.78)	4.26 (0.85)	4.21 (0.83)						
	LO	4.04 (0.74)	4.15 (0.75)	3.90 (0.79)	3.35	.05	4.36	.01	6.62	.01 T2>T1 T3>T2
	HI	4.08 (0.81)	4.33 (0.91)	4.43 (0.79)						
	Anger/aggression									
	Overall	2.39 (0.68)	2.01 (0.61)	1.87 (0.55)						
BASC2	LO	2.38 (0.66)	2.14 (0.74)	2.01 (0.65)	34.01	.01	2.67	.07	42.19	.01 T2<T1 T2<T1 T3<T2
	HI	2.40 (0.70)	1.91 (0.48)	1.78 (0.45)					8.32	.01 T3<T2
	Anxiety/withdrawal									
	Overall	2.02 (0.67)	1.75 (0.52)	1.73 (0.52)						
	LO	2.10 (0.66)	1.90 (0.52)	1.94 (0.51)	11.56	.01	1.51	ns	20.32	.01 T2<T1
	HI	1.97 (0.68)	1.66 (0.50)	1.59 (0.48)						
BASC2	Social/communication skills									
	Overall	2.70 (0.44)	2.82 (0.45)	2.83 (0.43)						
	LO	2.67 (0.41)	2.73 (0.46)	2.71 (0.43)	7.14	.01	2.37	ns	11.00	.01 T2>T1
	HI	2.73 (0.45)	2.88 (0.44)	2.91 (0.41)						
	Aggression									
	Overall	1.58 (0.44)	1.44 (0.32)	1.38 (0.29)						
BASC2	LO	1.66 (0.52)	1.49 (0.37)	1.49 (0.35)	14.29	.01	2.49	.09	16.81	.01 T2<T1 T3<T2
	HI	1.52 (0.38)	1.40 (0.27)	1.30 (0.21)					5.41	.05 T3<T2
	Hyperactivity									
	Overall	2.13 (0.44)	1.93 (0.37)	1.84 (0.32)						
	LO	2.13 (0.40)	1.90 (0.37)	1.90 (0.35)	27.21	.01	3.33	.05	37.50	.01 T2<T1 T3<T2
	HI	2.13 (0.47)	1.95 (0.36)	1.80 (0.30)					6.29	.01 T3<T2
BASC2	Anxiety/withdrawal									
	Overall	1.98 (0.36)	1.93 (0.32)	1.96 (0.34)						
	LO	2.03 (0.34)	1.97 (0.26)	2.03 (0.35)	3.01	.05	1.10	ns	5.86	.05 T2<T1

		Means			Multivariate tests (<i>df</i> 2,101)			Univariate contrasts (<i>df</i> 1,102)		
		Time 1 Time 2 Time 3			Wilk's <i>p</i>	time	time × attendance	time	time × attendance	<i>F</i> <i>p</i>
PPI	HI	1.95 (0.37)	1.91 (0.35)	1.90 (0.32)						
	Harsh/inconsistent discipline									
	Overall	2.42 (0.43)	2.24 (0.42)	2.25 (0.42)						
	LO	2.47 (0.38)	2.34 (0.40)	2.42 (0.41)	1.26	ns	2.79	.07		18.75 .01 T2<T1
	HI	2.38 (0.46)	2.17 (0.41)	2.14 (0.39)						
	Appropriate/positive discipline									
	Overall	3.28 (0.42)	3.55 (0.38)	3.54 (0.37)						
	LO	3.36 (0.41)	3.46 (0.40)	3.48 (0.37)	23.60	.01	6.78	.01	35.91	.01 T2>T1 12.29 .01 T2>T1
	HI	3.23 (0.41)	3.61 (0.37)	3.57 (0.36)						
	Clear expectations									
	Overall	2.17 (0.61)	2.39 (0.55)	2.38 (0.45)						
	LO	2.18 (0.50)	2.13 (0.51)	2.30 (0.44)	5.33	.01	5.10	.01	6.69	.01 T2>T1 10.04 .01 T2>T1
	HI	2.17 (0.67)	2.56 (0.51)	2.44 (0.45)						

Note. LO: parents attended 3 sessions or fewer; HI: parents attended 4 sessions or more