

Parent Training With High-Risk Immigrant Chinese Families: A Pilot Group Randomized Trial Yielding Practice-Based Evidence

Anna S. Lau

Joey J. Fung

Lorinda Y. Ho

Lisa L. Liu

University of California, Los Angeles

Omar G. Gudiño

New York University School of Medicine

We studied the efficacy and implementation outcomes of a culturally responsive parent training (PT) program. Fifty-four Chinese American parents participated in a wait-list controlled group randomized trial (32 immediate treatment, 22 delayed treatment) of a 14-week intervention designed to address the needs of high-risk immigrant families. Parents were eligible for intervention if they were Chinese-speaking immigrants referred from schools, community clinics, or child protective services with concerns about parenting or child behavior problems. Retention and engagement were high with 83% of families attending 10 or more sessions. Results revealed that the treatment was efficacious in reducing negative discipline, increasing positive parenting, and decreasing child externalizing and internalizing pro-

blems. Treatment effects were larger among families with higher levels of baseline behavior problems and lower levels of parenting stress. Further augmentation of PT to address immigrant parent stress may be warranted. Qualitative impressions from group leaders suggested that slower pacing and increased rehearsal of skills may improve efficacy for immigrant parents unfamiliar with skills introduced in PT.

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Correspondence to Anna S. Lau, Ph.D., UCLA, Dept. of Psychology, Box 951563, Los Angeles, CA 90095-1563; e-mail: alau@psych.ucla.edu.

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EVIDENCE FOR THE EFFICACY of parent training (PT) for reducing child conduct problems is rivaled by few evidence-based treatments (Eyberg, Nelson, & Boggs, 2008; Serketich & Dumas, 1996). Recent data suggests PT can be efficacious in the reduction of child internalizing as well as externalizing problems (DeGarmo, Patterson, & Forgatch, 2004; Webster-Stratton & Herman, 2008). However, examinations of the moderators of PT effects have at times revealed that economically disadvantaged, immigrant, and/or ethnic minority families have poorer outcomes, most often in terms of lower engagement and recruitment (Cunningham et al., 2000; Holden, Lavigne, & Cameron, 1990; Reid, Webster-Stratton, & Beauchaine, 2001) with more scattered evidence of attenuated treatment gains (Caughy, Miller, Genevro, Huang, & Nautiyal, 2003; Lundahl, Risser, & Lovejoy, 2006). The ability to systematically investigate racial disparities in PT effects, however, has been limited by the meager controlled trial research conducted with

culturally diverse samples (McCart, Priester, Davies, & Azen, 2006).

Discourse on the application of PT with ethnic minority families has enumerated potential cultural barriers to engagement among parents whose own socialization experiences fall outside middle-class European American heritage (e.g., Forehand & Kotchick, 1996; Lau, 2006; McCabe et al., 2005). Given that parent-child relations and discipline practices are the proximal targets of change, many have cautioned that cultural barriers may threaten the generalizability of PT. Wide cultural variation in parenting practices and values across ethnic groups may influence receptivity to proscribed changes in parent-child interaction patterns, perhaps accounting for increased attrition (e.g., Kazdin & Whitley, 2003) or lowered participation (e.g., Orrell-Valente, Pinderhughes, Valente, & Laird, 1999) among ethnic minorities. As such, PT interventions targeting ethnic minority families have been enhanced by attending to cultural barriers to engagement (e.g., Carpentier et al., 2007; Matos, Bauermeister, & Bernal, 2009; McCabe & Yeh, 2009). PT that leverages therapeutic group processes to address cultural and familial barriers to the uptake of novel parenting skills have achieved parity in clinical outcomes and satisfaction across ethnic groups (Reid et al., 2001).

In addition, interventionists targeting diverse families have tailored PT content to address ecological risk and protective factors associated with child behavior problems and parenting competence in ethnic minority families (Coard, Wallace, Stevenson, & Brotman, 2004; Kumpfer, Pinyuchon, Teixeira de Melo, & Whiteside, 2008; Martinez & Eddy, 2005). As with other efforts to augment PT, these adaptations address ancillary family stressors that can heighten child vulnerability and interfere with parent skill acquisition (Miller & Prinz, 1990). These culturally adapted PT protocols have addressed risk processes such as acculturation stress and experiences of discrimination (Lau, 2006).

Asian American families have been notably underrepresented in published trials of PT and most other evidence-based treatments (Huey & Polo, 2008). Although trials of Chinese parents in Hong Kong indicate that PT is efficacious in the treatment of child conduct problems (Ho et al., 1999; Leung, Sanders, Leung, Mak, & Lau, 2003), efficacy research has not included Chinese immigrants, who represent the second largest immigrant group in the United States. In the current study, we used mixed methods to examine PT outcomes in this target group and to report therapist-observed barriers in PT implementation. This study provides a valuable window on cultural processes in PT for

two reasons. First, evaluation of PT with Chinese immigrants may shed new light on cultural barriers to ethnic minority family engagement. Second, applications of PT with Chinese Americans can be informed by research on contextual stressors facing immigrant families.

ENGAGEMENT IN PT AMONG CHINESE PARENTS

Clinical observations suggest notable cultural distance between skills typically proscribed in PT and values emphasizing parental control often ascribed to Chinese origin parents (Chao & Tseng, 2002). For example, Lieh-Mak, Lee, and Luk (1984) reported that because of a cultural priority to avoid losing face and the need for constant correction of improper behavior, Hong Kong Chinese parents objected to ignoring misbehavior based on principles of differential reinforcement. Parents objected to tangible rewards for compliance because of Confucian edicts that child compliance is a key filial obligation, not a contractual arrangement. Likewise, other interventionists have noted that praise is problematic for Chinese parents owing to beliefs that praising children for accomplishments will result in lack of humility, complacency, and decreased effort to do better (Crisante & Ng, 2003; Ho et al., 1999). Among Chinese-American immigrants, low levels of acculturation and endorsement of traditional Chinese child-rearing values concerning strict discipline and shaming are associated with lower perceived acceptability of PT (Ho, McCabe, Yeh, & Lau, in review).

AUGMENTING PT CONTENT TO ADDRESS IMMIGRANT FAMILY STRESSORS

The PT program evaluated in the current trial considered culturally relevant risk factors for ineffective parental discipline in immigrant Chinese families. For immigrant families, stress associated with immigration, acculturation, and minority status can contribute to ineffective parenting. Within immigrant families, adjustment difficulties can arise as children acculturate more rapidly than their parents resulting in estrangement, conflict, and parental aggression (Farver, Narang, & Bhadha, 2002; Lee, Choe, Kim, & Ngo, 2000; Park, 2001). In a previous study, we reported that immigrant Chinese parents who value traditional forms of hierarchical parental control are more likely to use physical punishment in response to acculturation conflicts (Lau, 2010). Viewing an acculturating child's bids for autonomy through a traditional lens favoring parental authority may elicit negative affect and antagonistic attributions, fueling

punitive parenting. Another salient source of stress in immigrant Chinese families relates to demands for school achievement. Chinese immigrants often migrate to invest in their children's schooling, sacrificing the security of extended family, community, and homeland (Fuligni & Yoshikawa, 2004). Indeed, children's problems in school are a strong predictor of reliance on physical discipline among Chinese immigrant families (Lau, 2010). These considerations guided the current effort to implement PT with high-risk Chinese immigrant families.

We evaluated a version of the Incredible Years parenting program (IY; Webster-Stratton & Reid, 2003) that targeted risk factors associated with physical discipline in immigrant Chinese families in our previous work. Our aims were to establish community partnerships to effectively recruit and retain immigrant Chinese families in PT and to examine the feasibility and outcomes of a culturally informed PT program. We examined the instrumental outcomes of positive parenting, harsh discipline, and parenting stress as well as the ultimate outcomes of child externalizing and internalizing behavior problems in a sample of high-risk Chinese immigrant families. In addition, we examined whether changes in parenting accounted for gains in child behavior problems. Furthermore, we explored potential moderators of outcomes including acculturation, and baseline levels of parenting stress and behavior problem severity. Finally, we presented qualitative impressions of implementation processes based on exit interviews with group leaders. These observations were a key facet of our evaluation to inform further refinements to the intervention protocol in ways not afforded by the quantitative outcome data. Mixed methods approaches have considerable utility in formative intervention research with culturally diverse groups within an iterative approach to adaptation (Kumpfer et al., 2008; Nastasi et al., 2007).

Method

PARTICIPANTS

Participants included 54 Chinese American parents (89.7% mothers) and their children (61.7% boys) between the ages of 5 and 12 years ($M=8.4$, $SD=2.0$) who were referred for PT for concerns about parental discipline or child behavior problems. Parents were on average 41.8 years of age ($SD=7.2$), and their length of residence in the United States ranged from 2 months to 12 years ($M=29.4$, $SD=42.1$). Most parents reported having attained a high school education or less (67.5%). The majority of the families reported

annual family incomes below \$50,000 (71.4%). In this pilot trial, eligible parents self-identified as being of Chinese descent, immigrated to the United States after the age of 18, spoke Mandarin or Cantonese fluently, and identified difficulties with either parenting or child behavior problems. There was no diagnostic inclusion criterion; parents needed only to be referred by a community partner and self-identify a need for PT.

We conducted community outreach facilitated by local agencies and schools to identify high-risk families. Home-school coordinators, child protective services social workers, and community clinicians provided referrals to project research staff. As a result, 117 parents were referred across three waves of outreach from community mental health clinics ($n=35$), child protective services ($n=21$), and local public elementary schools ($n=61$). Of these referrals, 35 (29.9%) declined participation, 24 (20.5%) could not be reached, and 4 (3.4%) were ineligible. The 54 families enrolled were clustered into groups by the project coordinator based on language (Cantonese and Mandarin) and geographic proximity to treatment sites. Approximately half the sample (48.1%) had elevated internalizing or externalizing problems (T score >65) by parent report on the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001), with 40.8% of children having elevated internalizing problems and 38.8% having elevated externalizing problems.

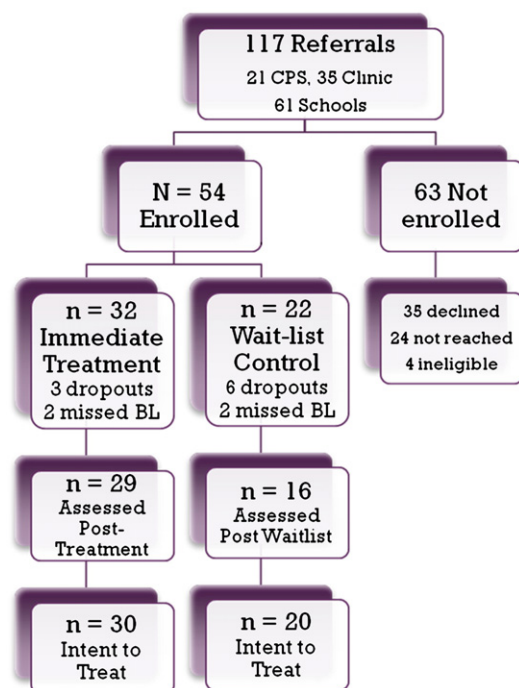


FIGURE 1 Participant flow chart.

Figure 1 shows enrollment and retention of families in the trial. Baseline assessments could not be completed prior to the start of the intervention groups for two of the immediate-treatment and two of the delayed-condition families. Three families dropped out of the immediate-treatment condition, whereas six dropped out of the delayed-treatment condition. This yielded a treatment retention rate of 83.3%. Posttreatment/postwait-list data were thus collected from 29 families in the immediate condition and 16 families in the delayed condition. Using intent-to-treat conventions, our main end-point analyses included all families for whom baseline data was obtained ($n=50$).

PROCEDURE

Within each of the three waves of outreach, parents were assigned to one of two groups based on their area of residence and preferred language as described above. With one exception, the cohorts showed no significant differences on family demographics or baseline problems. The second cohort was lower on parental acculturation compared to the first cohort but was not significantly different from the third cohort. Groups were randomized by coin toss (by the first author) to receive either immediate ($n=32$) or delayed treatment ($n=22$). The project coordinator then informed families of their group start date. Six groups, ranging in size from 5 to 10 parents, were conducted at community clinic or school sites. Group leaders included three master's-level clinicians assisted by coleaders who were doctoral students in clinical psychology. All group leaders were bicultural, bilingual Chinese Americans who received group-leader training in a 3-day workshop on the Incredible Years BASIC Parenting Program and subsequently received weekly supervision from the first author. Treatment groups were conducted from October 2006 through June 2008.

INTERVENTION

The treatment implemented was the IY program including material from the IY BASIC School-Aged Program 9 (Promoting Positive Behavior), 10 (Reducing Inappropriate Behavior), and 10 (Supporting Your Child's Education), as well as the IY ADVANCE Program 5 (How to Communicate Effectively With Children and Adults) and 7 (Problem Solving with Children). The protocol included 14 sessions, 9 covering the basic skills of child-directed play, praise, tangible rewards, effective commands, ignoring misbehavior, time-out, and logical consequences. More specialized content was encompassed in the remaining five sessions. Cognitive restructuring was introduced to help

parents to control upsetting thoughts about children's bids for autonomy and school-related problems. Parents were taught to identify blaming attributions that lead to punitive discipline or helpless thoughts that lead to inconsistent discipline and replace them with nonblaming, self-efficacious thoughts that mobilize effective behavior management. Communication training introduced skills to address recurrent conflicts common in immigrant families through active listening, problem-solving steps, and structured family meetings. To prevent punitive responses to school problems, strategies were introduced for increasing positive proactive parental involvement in children's schooling. Attending to the needs of parents with limited English, parents were guided in ways to show interest in their child's schoolwork, structure a homework routine, limit screen time, and coach persistence in the face of difficulties. In-depth case examples are reported in Lau, Fung, and Yung (2010).

By introducing skills in a collaborative rather than didactic manner, IY incorporates features to promote engagement in PT (Webster-Stratton, 2009). When each skill is introduced, parents discuss the benefits and barriers to using the skill while the group leader actively elicits parents' views on potential cultural and practical barriers. The group highlights the benefits of the technique for the achievement of parents' stated goals. Videos show parents using each strategy and the group leader facilitates a discussion in which the parents construct the principles underlying effective use of the strategy. The group leader manual orients therapists to common concerns about each PT skill (e.g., concerns that praise will "spoil" children, worries that time-out is not punitive enough). Rehearsal is emphasized, with role-play, and close monitoring of homework assignments. As recommended, we provided family meals before group and child care during group to permit working families to attend without the added stress of preparing meals and supervising children's homework on busy weeknights.

A random sample of one third of the PT session videos were rated for fidelity by trained observers who were bilingual doctoral students in clinical psychology who also served as group coleaders. Observers did not rate videos from their own groups. The IY Parent Group Leader Process Rating scale was used to rate elements of collaborative teaching, behavioral rehearsal support (e.g. facilitating role plays), and group process skills. These data suggested that the group leaders adhered well to manualized therapy process, with mean ratings of 4.31 to 4.79 out of 5 across the therapy process elements. As another measure of

fidelity, group leaders completed detailed session checklists to ensure that the requisite intervention content was delivered. On average, 79.6% of videotaped vignettes were shown and discussed, 74.5% of assigned role plays were completed, and 82.0% of homework guidance and monitoring activities were completed. Together these data suggested that the therapy process was adherent, but some problems with fidelity arose with completion of the required session content.

ASSESSMENT

Families within the immediate-treatment group completed assessments at pretreatment, posttreatment, and at 6-month follow-up (total of three assessments). Families in the delayed-treatment group completed an additional baseline assessment at the conclusion of treatment for the yoked immediate group (total of four assessments). This second baseline assessment served as the comparison point for the postassessment. Assessments were conducted using measures previously established with Chinese samples. We administered previous Chinese translations of measures or new translations produced through a process of translation, back-translation, and reconciliation for conceptual equivalence by a team of native Cantonese and Mandarin speakers. Assessments were conducted in family homes, or at clinic sites depending on family preferences. Bilingual research assistants blind to condition and time point collected data from parents.

MEASURES

Demographics

Parents completed a demographic questionnaire on immigration history, socioeconomic status variables, and family composition. To report income, parents selected the category reflecting their annual gross family income 1 (*less than \$4,999*) to 10 (*more than \$100,000*). For educational attainment, parents indicated whether they had completed 1 (*less than high school*), 2 (*high school or equivalent*), 3 (*college education*), or 4 (*postgraduate training*). Parents also reported their length of residence in the United States (reports were converted into number of months).

Parent Acculturation

The Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000) was used to measure parent acculturation toward the dominant American culture and the heritage Chinese culture. The SMAS consists of 32 items rated on a 4-point scale from 1 (*false*) to 4 (*true*). Items load onto two factors measuring ethnic society immersion (encul-

turation) and dominant society immersion (acculturation) on a number of domains including the following: language use, social interaction, food, and media (e.g., "I eat traditional foods from my native culture" or "I am informed about current affairs in the United States"). The validity of the SMAS is supported by expected convergence of scale scores with generational status among ethnic minority adults in the United States (Stephenson, 2000). The SMAS demonstrated good internal consistency in the present sample ($\alpha = .86$ for acculturation, $\alpha = .88$ for enculturation).

Child Behavior Problems

Child behavior problems were assessed using parent reports on the CBCL (Achenbach & Rescorla, 2001). On the CBCL, parents are presented with a list of 118 behavioral and emotional problems and indicate whether each item is 0 (*not true*), 1 (*somewhat or sometimes true*), or 2 (*true or often true*) for their child based on the preceding 6 months. The measure yields broadband factor scores for internalizing (anxious/depressed, withdrawn, and somatic complaints) and externalizing (aggressive and rule-breaking behavior) problems. Published internal consistency estimates of the Chinese version of the CBCL were satisfactory, with alphas of .80 and .83 for the internalizing and externalizing subscales, respectively (Yang, Soong, Chiang, & Chen, 2000). Test-retest reliability estimates also fell in the .80 range across the CBCL subscales when used in a Chinese sample (Leung et al., 2006).

Parenting Stress

The Parenting Stress Index–Short Form (PSI-SF; Abidin, 1995) is a 36-item scale for measuring parental distress. We used the Chinese version of the PSI-SF, which was validated in research on maltreating samples of parents in Hong Kong (Chan, 1994; Tam, Chan, & Wong, 1994). In the current study, the total score was utilized to examine levels of parenting stress as an outcome measure. Internal consistency in the present sample was good ($\alpha = .89$).

Parenting Behavior

The Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootten, 1996) is a 42-item scale that measures parenting practices across different domains utilizing a 5-point scale: never, almost never, sometimes, often, and always. In the current study, we used the 16-item positive involvement (e.g., "I drive my child to special activities") and the 7-item negative discipline (e.g., "I spank my child with my hand") subscales.

Table 1
Baseline Characteristics by Intervention Condition

	Immediate Treatment (<i>N</i> =32)		Delayed Treatment (<i>N</i> =22)		<i>t</i> (52)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Sociodemographics					
Child age	8.71	2.23	8.08	1.62	1.13
Mother's education level	2.29	.56	2.00	.47	1.93*
Father's education level	2.38	.80	2.32	.75	.25
Family income	4.67	2.92	4.58	2.50	-.15
Parent acculturation	2.30	.52	2.18	.43	.88
Child behavior problems					
Internalizing CBCL	54.40	9.71	56.82	10.81	-.79
Externalizing CBCL	54.27	10.43	59.29	11.17	-1.55
Parenting					
APQ positive involvement	59.45	8.03	58.89	8.29	-.35
APQ negative discipline	14.28	3.65	15.56	4.06	-1.34
PSI total stress	95.10	13.16	101.89	11.81	-1.79

Note. CBCL=Child Behavior Checklist; APQ=Alabama Parenting Questionnaire; PSI=Parenting Stress Index. * $p < .10$.

Published internal consistency estimates of the APQ in a mixed sample of European and East Asian parents indicate high test-retest reliability ($r = .85$) and moderate internal consistency ($\alpha = .67$). In the current sample, the positive involvement ($\alpha = .86$) and negative discipline ($\alpha = .77$) subscales had good internal consistency.

Therapist Focus Group

Following the completion of the groups, we convened a meeting of the six master's-level Chinese American group leaders to gather their impressions of the implementation. Three group leaders were staff clinicians at our community partner agency, one was a social worker, whereas the other two held degrees in marriage and family therapy. Three additional group leaders were doctoral students in clinical psychology who were paired to colead groups with agency staff. Group leaders were asked about what contributed

to the success of the program, what barriers to implementation were perceived, and what they believe led to improved outcomes for this population.

Results

RANDOMIZATION CHECK

Table 1 displays means and standard deviations of demographic variables, measures of acculturation, child behavior problems, and parenting at baseline for the immediate- and delayed-treatment groups. Based on independent sample *t* tests, there were no significant differences in child age, parental education, family income, or parental acculturation to American culture between the groups. Similarly, no significant group differences emerged for internalizing problems, externalizing problems, positive involvement, negative discipline, or parenting stress at pretreatment.

Table 2
Summary of Intent-to-Treat Analyses of Primary Treatment Outcomes

	Time 1				Time 2				ANCOVA		Posttreatment
	Immediate Treatment		Delayed Treatment		Immediate Treatment		Delayed Treatment		<i>F</i> (1, 49)	η_p^2	δ
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Child Outcomes											
Internalizing Problems	54.40	(9.71)	56.82	(10.81)	50.90	(9.36)	57.24	(8.77)	6.12*	.12	-.51
Externalizing Problems	54.27	(10.43)	59.29	(11.17)	53.30	(8.76)	60.59	(9.82)	5.39*	.11	-.40
Parent Outcomes											
Positive Involvement	59.45	(8.03)	58.89	(8.29)	61.81	(8.12)	56.19	(7.65)	9.29**	.17	.49
Negative Discipline	14.28	(3.65)	15.56	(4.06)	12.48	(3.15)	15.86	(3.92)	6.56*	.12	-.71
Parenting Stress	95.10	(13.16)	101.89	(11.81)	91.55	(16.79)	97.72	(13.06)	.005	.00	.07

Note. ^aCohen's δ effect size based on difference between posttreatment means adjusted for pretreatment scores. * $p < .05$, ** $p < .01$.

ATTRITION ANALYSES

There was an 83.3% overall retention rate in the intervention study and 43 of 54 (79.6%) parents attended at least 10 out of 14 sessions. The research team was able to obtain follow-up data from 45 out of 54 families. We examined possible differences between families who were lost to follow-up ($n=9$) compared to those who provided data at both pre- and posttreatment ($n=45$). Based on independent sample t tests, there were no significant differences between groups in terms of child age, parental education, family income, parental acculturation, baseline behavior problem, or parenting.

PRE- TO POSTTREATMENT EFFICACY

We used ANCOVA analyses to examine the effect of group on posttreatment measures of behavior problems, parenting, and parenting stress, controlling for baseline measures. Here, we report intent-to-treatment analyses, carrying the last observation forward for missing posttreatment observations. Table 2 displays the results indicating that immediate treatment was associated with gains in positive involvement, $F(1, 49)=9.29, p=.004$, and negative discipline, $F(1, 49)=6.56, p=.014$, as well as parent-reported internalizing, $F(1, 49)=6.12, p=.02$, and externalizing child behavior problems, $F(1, 49)=5.39, p=.02$. ANCOVA-based effect sizes associated with these results were large (ranging from $\eta_p^2=.11$ for externalizing problems to $\eta_p^2=.17$ for positive involvement). However, no significant group effect was observed at posttreatment for parenting stress when controlling for baseline levels. Effect sizes based on posttreatment means after adjusting for pretreatment differences between groups suggested effects in the medium to large range for parenting ($\delta=.49$ for positive involvement, $\delta=-.71$ for negative discipline), with a negligible effect on parenting stress ($\delta=.07$). Medium effect sizes were observed for the primary outcomes ($\delta=-.51$ for internalizing problems, $\delta=-.40$ for externalizing problems).

MEDIATION ANALYSIS

We examined whether improvements in the intermediate outcome of parenting quality for families in the immediate-treatment group explained child behavior outcomes. We created change scores for positive involvement and negative discipline from pre- to posttreatment using standardized residuals to determine whether these changes mediated treatment effects on internalizing and externalizing problems. We did not examine changes in parenting stress as a mediator because parenting stress did not improve as a function of treatment in the efficacy analyses described above. We employed a series of

multiple regression analyses to examine the conditions for testing mediation. First, treatment condition predicted posttreatment internalizing ($\beta=-.24, p<.05$) and externalizing problems ($\beta=-.19, p<.05$) controlling for baseline levels. Second, treatment condition was significantly associated with changes in positive involvement ($\beta=.25, p<.01$) and negative discipline ($\beta=-.27, p<.05$). Third, the putative mediator of changes in negative discipline was related to changes in externalizing problems ($\beta=.22, p<.05$), but not to changes in internalizing problems ($\beta=.11, p=.31$). Contrary to predictions, changes in positive involvement were not significantly associated with improvements in internalizing ($\beta=-.12, p=.25$) or externalizing problems ($\beta=-.01, p=.87$). Therefore, the final step of the mediation analysis utilizing hierarchical regression examined negative discipline as a mediator of the effect of treatment on externalizing problems. As displayed in Table 3, when change in negative discipline was added to the equation, it independently predicted variance in posttreatment externalizing problems after controlling for baseline levels ($\beta=.19, p<.05$) and treatment condition status no longer predicted externalizing outcomes, suggesting mediation. The Sobel test indicated that the effect of the intervention on externalizing behavior problems was significantly mediated by changes in negative discipline ($z=1.92, p<.05$).

MODERATOR AND FOLLOW-UP ANALYSES

To explore treatment effects over 6-month follow-up as well as potential variability in treatment effects, we pooled data from the immediate- and delayed-treatment groups from baseline to posttreatment to 6-month follow-up. We examined baseline behavior problem severity (above or below the cutoff of $T=65$ on total behavior problems), parenting stress (above or below the median on the PSI-SF), and parental acculturation

Table 3
Regression Analyses of Negative Discipline as a Mediator of Intervention Effects on Externalizing Behavior Problems

	<i>B</i>	<i>SE</i>	β
Step 1			
Time 1 externalizing problems	.74	.07	.81**
Treatment condition	-3.33	1.61	-.17*
Step 2			
Time 1 externalizing problems	.73	.07	.79**
Treatment condition	-2.12	1.60	-.11
Negative discipline	1.88	.77	.19*
Sobel $z=1.92^*$			

Note. * $p<.05$, ** $p<.01$.

Table 4
Pretreatment, Posttreatment, and Follow-Up Outcomes in the Full Sample With Moderator Analyses

	Pre <i>M (SD)</i>	Post <i>M (SD)</i>	Follow-Up <i>M (SD)</i>	<i>F</i> (1, 80) (Time)	<i>F</i> (2, 80) (CBCL*T)	<i>F</i> (2, 80) (PSI*T)	<i>F</i> (2, 80) (Acculturation*T)
Child Outcomes							
Internalizing Problems	54.87 ^a (9.45)	50.62 ^b (9.90)	47.57 ^c (10.32)	18.12**	5.22**	3.65*	.06
Externalizing Problems	56.13 ^a (10.61)	53.70 ^b (9.79)	50.43 ^c (9.66)	27.69**	19.37**	1.33	.06
Parent Outcomes							
Positive Involvement	59.35 (8.69)	61.85 (9.25)	60.91 (8.90)	1.51	1.22	1.04	.55
Negative Discipline	14.19 ^a (3.93)	12.73 ^b (3.30)	12.47 ^b (3.30)	7.57**	.59	4.29*	.40
Parenting Stress	97.59 ^a (15.02)	91.79 ^b (16.23)	88.62 ^b (16.76)	5.60**	.51	.85	.06

Note. Means with different superscripts denote significantly different means. * $p < .05$, ** $p < .01$.

(above or below the median on SMAS acculturation) as potential moderators of intervention effects on child behavior problems and parenting out-

comes. We specified mixed-effects models with three repeated measures for each outcome, examining the effects of time, each moderator variable, and the

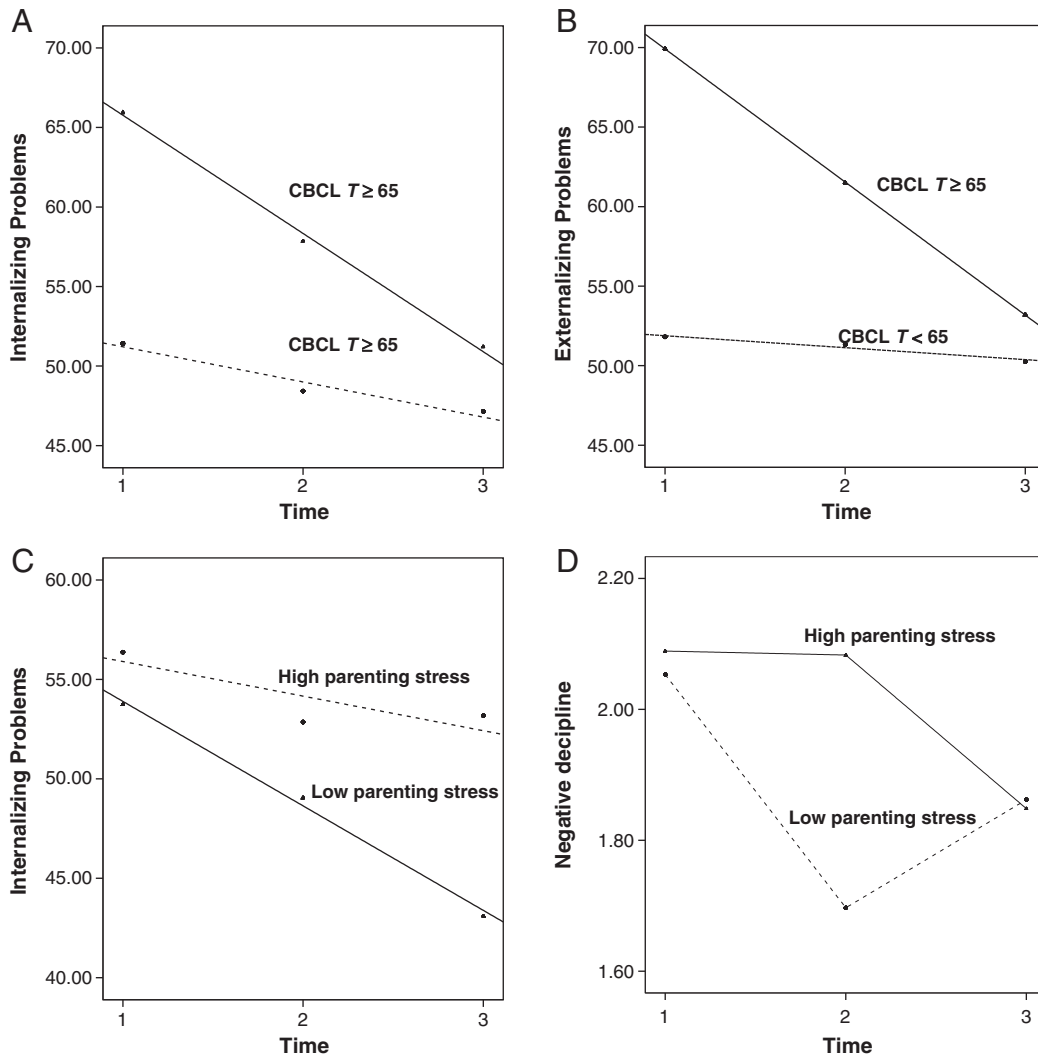


FIGURE 2 Moderators of outcomes over time. A and B. Families with elevated total child behavior problem scores at baseline show more improvement on child internalizing and externalizing problems. C. Families with high levels of parenting stress at baseline show fewer treatment gains in child internalizing problems. D. Families with high levels of parenting stress at baseline show fewer treatment gains in negative discipline, though outcomes appear to converge at follow-up.

interactions between the moderator variables and time. Mixed-effects models are preferred over traditional repeated measures ANOVA owing to greater flexibility in modeling time effects and retention of all observations, preventing data loss incurred with listwise deletion (Gueorguieva & Krystal, 2004).

As displayed in Table 4, in the pooled sample there were significant effects of time on internalizing and externalizing behavior problems, $F(1, 60)=18.12, p<.01$ and $F(1, 60)=27.69, p<.01$, respectively, parenting stress, $F(1, 60)=5.60, p<.01$, and negative discipline, $F(1, 60)=7.57, p<.01$, but not on positive parent involvement. We also examined post hoc contrasts to determine whether treatment gains from pre- to posttreatment were sustained at 6-month follow-up. For the primary outcomes, improvements in internalizing and externalizing problems from pre- to posttreatment were enhanced at follow-up, with 6-month follow-up means being significantly lower than posttreatment means. For the intermediate parenting outcomes of parenting stress and negative discipline, treatment gains were sustained with no significant differences between posttreatment and 6-month follow-up means.

There was a significant interaction effect between time and total behavior problems at baseline for internalizing problems, $F(2, 80)=5.22, p<.01$, and externalizing problems, $F(2, 80)=19.37, p<.01$. Post hoc subgroup regression analyses were conducted to clarify the nature of this interaction. In Figures 2A and 2B, we plotted simple intercepts and slopes for emotional and behavior problem outcomes as a function of baseline problem levels (above and below clinical cutoff of $T=65$). Figure 2A shows a significant main effect of time on internalizing problems for children scoring above the clinical cutoff for total behavior problems at baseline, $F(1, 32)=17.81, p<.001$, but this relationship was not significant for children scoring below the cutoff, $F(1, 107)=4.21, ns$. Similarly, Figure 2B shows a main effect of time on child externalizing behavior problems for children scoring above the clinical cutoff at baseline, $F(1, 32)=40.65, p<.001$, but not for those scoring below the clinical cutoff, $F(1, 107)=.70, ns$.

There was also a significant interaction between time and parenting stress on internalizing outcomes, $F(2, 80)=4.29, p<.05$. Post hoc analyses depicted in Figure 2C showed a significant main effect of time on internalizing problems for parents reporting low parenting stress at baseline, $F(1, 76)=13.57, p<.001$, but this relationship was not significant for parents reporting high parenting stress at baseline, $F(1, 63)=1.43, ns$. Lastly, we found a significant interaction effect of time and parenting

stress on negative discipline, $F(2, 80)=3.65, p<.05$. Figure 2D shows a significant main effect of time on negative discipline for parents reporting low parenting stress (below the median) at baseline, $F(1, 80)=5.37, p<.05$, but this relationship was not significant for parents reporting high parenting stress at baseline, $F(1, 47)=2.26, ns$.

There were no other significant interactions between putative moderator variables and time on the outcomes of interest. Of note, parents of high and low acculturation levels did not appear to have different outcome trajectories over time. However, there was a significant main effect of acculturation on externalizing behavior problems, $F(1, 58)=4.24, p<.05$, and a marginal effect of acculturation on internalizing behaviors, $F(1, 57)=3.38, p=.071$. As

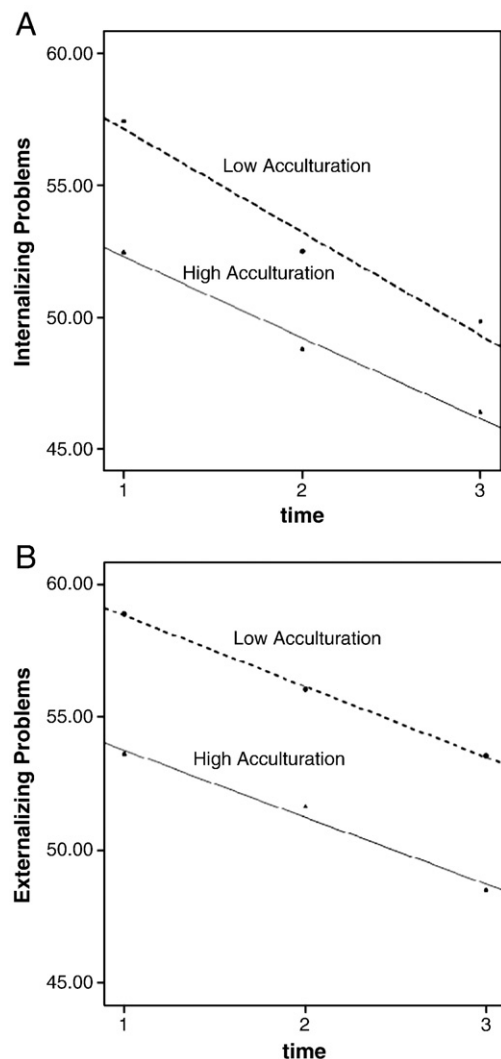


FIGURE 3 A and B. Families with less acculturated parents have higher reported internalizing and externalizing problems across time points, but acculturation did not moderate outcomes.

shown in Figures 3A and 3B, parents who were less acculturated (below the median) consistently reported more behavior problems from pretreatment through follow-up as compared to those who were more acculturated.

PRACTICE-BASED EVIDENCE: THERAPIST PERSPECTIVES ON PROCESS AND OUTCOMES
PT Intervention Content

Group leaders shared their impressions about the intervention content that was most valuable for the immigrant Chinese families they served. Group leaders nominated the sessions covering child-directed play, praise, ignoring misbehavior, and controlling upsetting thoughts as the critical content for achieving outcomes. They noted that lessons focused on increasing positive attention were vital for parents, but they involved “brand new skills for our families.” One leader remarked, “Culturally we are produced to be didactic. Everything, play, or whatever, has to have an educational purpose behind it.” Thus, child-directed play was difficult to learn as parents were inclined to instruct, guide, and correct their children in activities. In contrast, group leaders felt praise was not a new concept to Chinese immigrant parents but the techniques were nonetheless difficult to implement: “The parents know in theory that praise is helpful, but when they actually praised, the words, the statements that they used, were not necessarily praise. It was always weighted with criticism.” These lessons required extended rehearsal for making change and sustaining gains. One leader described parents backsliding, “We found out towards the end of the group the parents forgot all the beginning basic skills, like praising, spending special time, those skills. Forgot! Initially, when we introduced [the skills] to them they were able to do it right, with homework. And then, towards the end, it was all gone.” These basic skills are then the prerequisites for later lessons on problem solving and communication when immigrant parents “are still trying to get hold of the foundation skills [and are] not yet ready for the more advanced skills.”

Effective Therapy Process

Next, group leaders commented on the therapeutic process elements that led to change. Group leaders did encounter misgivings about PT among Chinese parents. For example, two fathers mandated to treatment by child protective services “did not really buy into time-out. They didn't think it was a big enough punishment for bad behavior”; they valued more punitive discipline. Group leaders reported that ignoring was sometimes seen as unacceptable: “They are cultured to reprimand,

you know, and criticize and yell and direct. When you talk about ignoring the kid, they think you are giving them more power.” Such concerns were elicited in the Benefits and Barriers exercise incorporated in each session as a means of collaborating with parents and cultivating the therapeutic relationship. Listening with empathy and open discussion of cultural concerns facilitated bonding between and among the group leaders and the parents. Working alliance was further achieved by exchanging viewpoints on PT strategies and exploring how each could be used in a way that works toward goals while averting unwanted consequences. For example, parents often felt that children ought not be praised for expected behaviors: “Listening to parents is simply a must.” Many believed that praise can decrease children's motivation: “If you praise them, they'll stop trying hard.” Group leaders validated these concerns and warned against inappropriate applications of praise that can indeed promote complacency. Then group leaders reinforced the importance of specific labeled praise focused on effort, which can increase the valued goals of persistence and improvement.

Yet, these engagement strategies were not viewed as sufficient for good outcomes. Group leaders felt that many PT skills were difficult for traditional Chinese parents to carry out: “Monolingual first-generation parents need more guidance, more support, and hands-on practice.” The intervention was effective to the extent that parents were supported in extensive practice in role-play and home activities. Group leaders felt it was necessary to make homework assignments as customized as possible: “We came up with specifically what they should do for their homework, not just a general assignment.” For example, instead of asking parents to choose a behavior to praise their child for each day, the assignment would be individualized (e.g., “Mr. Wong, you said you would like to praise Anthony as soon as he sits down to do his homework before dinner.”) This made the application of skills concrete and engaged each parent in a clear social contract for the week.

Unfortunately, group leaders also felt it was difficult to provide enough facilitated practice in the course of the 14-week protocol: “It seems like we do not have sufficient time to kind of walk them through the practice enough on those particular skills to be reinforced because we have to move on to the next topic.” Despite her belief that rehearsal was a key mechanism of change, another group leader admitted honestly, “If we are pressed for time and setting priorities—get through the curriculum or the role-play practice—the role play is often left off.” When group time was devoted to

group discussion around cultural barriers to PT skills, role plays were less numerous.

Discussion

The results of this preliminary trial of an augmented PT intervention for high-risk immigrant Chinese families provided initial evidence of efficacy. Evidence-based PT that attends responsively to cultural barriers to engagement and skills pertinent to immigrant families can yield strong treatment effects in improving parenting and child behavior problems in immigrant Chinese families. We observed a high level of retention in treatment, with 83% of families completing the 14-week intervention with most of the drop out observed in the wait-list period of the delayed-treatment condition. Relative to parents in the delayed-treatment condition, parents who received the intervention responded with lower levels of negative discipline and increased positive involvement practices with their school-age children. In addition to these intermediate parenting outcomes, effects were evident in decreased child internalizing and externalizing behavior problems at post-treatment. Effect sizes were in the medium to large range for child behavior problems depending on the index at posttreatment, comparable to findings from majority group samples of parents receiving evidence-based PT. Pooling data from across conditions, we noted that further reductions in child behavior problem levels were observed from posttreatment to 6-month follow-up. Although we did not have a control condition for the follow-up period, these data provide preliminary support for short-term durability of treatment effects. Further study is warranted to determine whether PT may produce delayed or sleeper effects with immigrant families where gains in parenting may come slowly and may continue to produce improvements in child behavior over time (Barrera et al., 2002).

This was a heterogeneous high-risk sample referred for either parenting problems (i.e., suspected child maltreatment) or child adjustment difficulties (i.e., school referrals), and there were no diagnostic criteria for entry into the study. Thus, the trial can be viewed within an indicated prevention approach, with differential treatment response depending on baseline severity of child behavior problems. Consistent with the literature, intervention efficacy varied by initial status such that the children with elevated behavior problems at baseline were the ones that benefited most (Lundahl et al., 2006).

Results of mediation analyses revealed that decreases in negative discipline accounted for improvements in child externalizing problems.

This mirrors the results from an examination of putative mediators of outcomes of the IY intervention, where changes in observed critical and harsh parent behaviors explained changes in child externalizing outcomes (Beauchaine, Webster-Stratton, & Reid, 2005). However, treatment-related changes in positive parenting behaviors did not mediate child internalizing or externalizing outcomes. Furthermore, we were unable to identify parenting mediators that accounted for changes in child internalizing problems. Given the small sample size, we had limited power to examine these mechanisms of action. Additionally, these analyses are subject to criticism because we measured putative mediators concurrent with posttreatment outcomes (Kazdin & Nock, 2003).

The finding that improvements were observed in both internalizing and externalizing problems is consistent with recent findings that PT has impacts across both broad dimensions of child behavior disturbance. Secondary analyses of data from controlled trials of IY have also revealed clinically significant improvements in child internalizing problems, with strong effect sizes among children with elevated internalizing symptoms at baseline (Webster-Stratton & Herman, 2008). Although originally developed to reduce conduct problems, PT targets familial risk factors for child depression and anxiety, including unpredictable, non-nurturing, and harsh or critical parenting behaviors. Thus, PT may be promising for remediating a range of child adjustment problems related to family distress. This may be especially relevant in the treatment of children in East Asian contexts where cultural socialization forces may shape the expression of child distress toward internalizing manifestations rather than overt conduct problems (Weisz, McCarty, Eastman, Chaiyasit, & Suwanlert, 1987).

Two intermediate outcomes for which efficacy was not clearly supported were parenting stress and positive parenting. Pre- to posttreatment efficacy analyses suggested a treatment effect on positive parenting, but there was no significant effect of time in the pooled sample analyses of outcomes from pretreatment through follow-up. On average, parents in the sample reported high mean levels of positive discipline at baseline and there may have been a ceiling effect using this measure. For parenting stress, intent-to-treat analyses did not reveal an effect of the intervention at posttreatment. This finding is inconsistent with previous independent evaluations of IY using wait-list controlled designs and the same measure of parenting stress (Hutchings et al., 2007). Pooled analyses of the entire sample from pretreatment to follow-up did reveal a significant effect of time on parenting

stress, suggesting decreases in parenting stress observable at both posttreatment and 6-month follow-up. However, we cannot safely attribute this change to treatment as parenting stress may have decreased with the passage of time following referral.

Of additional concern was the finding that the intervention was least effective in reducing internalizing outcomes among families where parents had high levels of parenting stress at baseline. While some studies have noted that PT is less effective when parents report greater parenting stress or more life events (Kazdin, 1995; Webster-Stratton & Hammond, 1990), meta-analytic findings have suggested that the associations between stress and PT outcomes are small (Reyno & McGrath, 2006). An analysis of outcomes of IY among 514 families across 6 randomized trials did not find baseline parenting stress to moderate externalizing outcomes (Beauchaine et al., 2005). Indeed, parity in outcomes across levels of initial parenting stress can be expected when the intervention is successful in reducing this stress by improving child management strategies, enhancing parent coping skills, and targeting distressing parental cognitions. Yet, despite the inclusion of augmented intervention content to address stress in immigrant parent-child relations, intervention effects on parenting stress were not observed at posttreatment and child internalizing outcomes were negatively impacted by parenting stress. This suggests that the cognitive restructuring and communication training provided were insufficient to produce effects among the most distressed immigrant parents in the sample. These findings could be used to inform the continued adaptation of PT protocols for distressed immigrant families.

Likewise, observations of group leaders about therapy process and outcomes were valuable in generating directions for future implementation efforts. Clinician impressions from an exit focus group interview converged with the quantitative findings on retention, as the group leaders felt successful in engaging immigrant Chinese parents in PT. Although group leaders did have to attend to parents' cultural concerns about PT practices, group process was effective in building a working alliance and engaging parents to apply strategies in ways that were consistent with their goals. On balance, group leaders felt competent in addressing cultural barriers related to the acceptability of PT but had more concerns about cultural barriers in the learning of new parenting skills. Once attitudinal barriers were addressed, parents appeared amenable to culturally unfamiliar strategies. However, group leaders perceived that it was difficult for

immigrant Chinese parents to become facile with the skills. Parents' cultural upbringing made strategies involving attending and positive reinforcement particularly foreign, and hence difficult to attain and maintain.

Group leaders reported that slowing the pace of skill lessons and increasing the dosage of behavioral rehearsal may be a promising adaptation to achieve meaningful and enduring changes in parenting in immigrant families. This need for additional learning support was suggested in previous trials of PT with Chinese origin families. Ho et al. (1999) encountered difficulties in teaching Hong Kong Chinese parents to praise their children and found it necessary to bolster their instruction with the use of feedback on videotaped behavior samples as well as live coaching using a "bug in the ear." Ho et al. reported that some parents refused to praise, but those who tried initially used praise in a "mechanistic and unemotional manner" thus limiting its effectiveness. Likewise, Crisante and Ng (2003) report that Chinese Australian parents required substantial practice of the unfamiliar behaviors of both giving and receiving praise so that they better understood the intention to evoke positive affect. Our findings likewise suggest that PT with Chinese parents is successful to the extent that behavioral rehearsal is buttressed. This is, of course, not a culturally specific proscription for enhancing PT, and could be said of parents from across cultural groups. However, the issue of dosing may be vital for immigrant parents, and has generally not entered discussions of how to adapt or enhance treatment effects for diverse families.

Critics have noted that interventions developed for majority populations are often imbued with European American values and behavioral traditions (e.g., assertiveness in social skills training, praising desired child behavior in PT), rendering them potentially less acceptable to ethnic minorities. As newcomers, immigrant parents may have had limited exposure to child management strategies taught in PT, making them foreign and difficult to emulate. However, beyond attitudinal barriers that promote active resistance among immigrant parents, cultural differences in child rearing may present barriers to skill acquisition that limit the pace of progress toward mastery. Even after therapists surmount attitudinal barriers to engagement, the cultural distance of the target skills may render them less easily assimilated. Immigrant parents may require additional support to enact, rehearse, and consolidate behavior changes.

Several limitations of the current study should also be noted. Given that this was a small pilot trial,

two concerns arise. First, we had limited power to detect therapeutic effects. Second, estimates of the effect size have a large standard of error. The sample included mainly low- to middle-income immigrant parents residing in ethnically dense communities. Thus, continued research is needed for increased confidence in the generalizability of PT outcomes for immigrant Chinese families across clinical samples, community providers, and contexts. Outcomes were assessed by parent self-report and could be subject to social desirability and demand effects. Future trials should include multiple-informant, multimethod assessments of outcome.

Notwithstanding these limitations, the current study provides some insights into the adaptation of evidence-based PT for immigrant families. Continued research is needed to understand the relative contributions of augmenting interventions with ancillary skills training pertinent to specific cultural groups versus enhancing dosage of basic behavioral skills training to ensure teaching to mastery in the context of culturally responsive and engaging behavioral interventions. Our findings suggest that additional skills training to effectively reduce parenting stress in immigrant families may yet be necessary to ensure penetration of effects in the most distressed immigrant families. Secondly, it may be vital to appropriately dose the intervention to be sensitive to the learning needs of immigrant parents unfamiliar with target practices. These considerations for treatment adaptation present challenges in the context of delivering a time-limited intervention in a way that also incorporates elements for responsive engagement around familial and cultural concerns. Indeed, therapists in the current study were pressed within the time-limited protocol to sensitively attend to parents' cultural concerns, while also providing sufficient opportunities for behavioral rehearsal and full coverage of the treatment elements. To inform intervention science with an increasingly diverse population, future trials should address comparative efficacy questions. Promising designs could manipulate intervention dosage, and provision of augmented or adapted content for immigrant families, among other central intervention parameters, could inform how to enhance care for diverse families.

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