Prev Sci (2011) 12:126–138
DOI 10.1007/s11121-010-0187-0

Enrollment and Attendance in a Parent Training Prevention Program for Conduct Problems

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Published online: 30 October 2010

Abstract Low levels of enrollment and attendance in parent training programs present major problems for researchers and clinicians. The literature on enrollment and attendance in prevention programs is especially limited, and these constructs may be particularly difficult to address in this context. Further, most previous research has not made the distinction between enrollment and attendance. This study describes predictors of enrollment and attendance in a behavioral parent training program intended to prevent conduct problems in preschoolers. Information was gathered from 106 preschoolers, their parents, and their teachers. Parent socioeconomic status (SES), single parent status, ethnicity, child externalizing behavior, parent depressive symptoms, and parent social support were investigated as possible predictors of families' enrollment and attendance. Only 48% of the families that had already provided informed consent and completed demographic questionnaires actually enrolled in the parent training program; parents with lower incomes and lower levels of social support were less likely to enroll. In addition, African-American and Puerto Rican families were less likely to enroll than Caucasian families. The average attendance rate for enrolled parents was 61%; dual parents and parents with children evidencing externalizing behavior problems attended more parent training sessions. Parent depression was not associated with enrollment or attendance. Significant relationships were maintained when controlling for other predictors including SES and when accounting for center-level variance. In addition, three distinct patterns of attendance were observed, which may have practical implications related to retention strategies.

Keywords Enrollment · Attendance · Prevention · Behavioral parent training · Preschoolers

This study was supported by grants to David Arnold from the National Institute of Mental Health (R29 MH55088-01A1) and from the William T. Grant Foundation. Correspondence concerning this article should be addressed to David Arnold, Psychology Department, Tobin Hall, University of Massachusetts, Amherst, MA 01003, or darnold@psych.umass.edu.

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Behavioral parent training programs have been established as the gold standard for treating conduct problems in children (Reid et al. 2004; Webster-Stratton 1994), and this conclusion has been supported by multiple comprehensive reviews (e.g., Brestan and Eyberg 1998; Dretzke et al. 2009). Behavioral parent training programs are manualized, short-term interventions that teach parents, often in a group format, how to build positive relationships with their children and learn consistent, appropriate responses to aggression and other discipline problems. Though originally developed as a treatment for children with externalizing behavior problems, parent training programs also lend themselves both conceptually and logistically to prevention work. Researchers are beginning to utilize parent training programs in prevention studies for children at-risk for conduct problems (e.g., Webster-Stratton 1998; Webster-Stratton et al. 2001). However, these programs have been plagued with low levels of parent enrollment and attendance, likely limiting the contributions they are able to make to both participants and to the field of prevention research.

Unlike clinical interventions, prevention work does not target existing problems and thus may not be perceived as needed by potential participants. For example, recent studies reported that only about 30 to 35% of invited families enrolled in prevention projects for behavior problems (Garvey et al. 2006; Heinrichs et al. 2005; Spoth

and Redmond 2000). Despite this, enrollment, defined for this paper as attending at least one program session, is rarely studied. Often those invited to participate in prevention programs are selected because they are at risk of developing problems (Orrell-Valente et al. 1999; Webster-Stratton and Hammond 1998). The consequences of low levels of enrollment are likely negative, as prevention efforts for conduct problems reduce long-term problems that are personally and socially costly (Foster et al. 2005; Moffit et al. 1996), and enrollment has been linked to program effectiveness (Reyno and McGrath 2006; Spoth and Redmond 1996).

While getting families to enroll in prevention programs is difficult, keeping them involved also presents a challenge. For the purposes of this paper, attendance is defined as the percentage of sessions attended for the subset of families that enroll in a program (i.e., attend at least one session). Attendance in parent training has generally been studied in the context of outpatient treatment for children already experiencing problems. Forty to 60% of parents drop out of these programs, even when financial incentives, childcare, refreshments, and transportation are provided (Frey and Snow 2005; Kazdin 1996). Although attendance rates in prevention programs are generally comparable (Orrell-Valente et al. 1999; Reid et al. 2004; see Heinrichs et al. 2005 for an exception), predictors of attendance are less understood in the context of prevention programs.

Just as the clinical consequences of low levels of enrollment in prevention efforts are concerning, so are the effects of poor attendance. Compared to participants who complete programs, those who drop out are less likely to benefit (Prinz and Miller 1994). In addition, participants who drop out increase the cost of services and occupy slots that others could have used. The situation is likely worse outside of research settings: Best estimates suggest that only 20% to 40% of children who need treatment receive it, and much of this treatment is likely incomplete (Leaf et al. 1996; US Department of Health and Human Services 1999).

In a research context, the methodological effects of low levels of enrollment and attendance can be as concerning as the clinical ones. These problems can compromise the external validity of a study and make it difficult to generalize program results beyond those participants who agreed to become and stayed involved. Attrition may also affect internal validity, compromising random assignment and violating the assumption that comparison groups are equivalent on important background variables. Finally, families that drop out reduce sample size and statistical power.

Concerns about enrollment and attendance are widely expressed but rarely investigated. Although there is a growing literature on enrollment and attendance in parent training programs, much of this work has targeted older children (e.g., Spoth and Redmond 1996) and has focused on intervention rather than prevention (e.g., Kazdin et al. 1997). In contrast, studies that address enrollment and attendance in parent training prevention programs for young children are just beginning to appear (Garvey et al. 2006; Gross et al. 2001; Heinrichs et al. 2005; Nix et al. 2009). However, the constructs of enrollment and attendance are often blended into one continuous measure, which washes out important distinctions between the constructs (e.g., Garvey et al. 2006; Gross et al. 2001). Drawing from this existing research, several structural and demographic, child, and parent characteristics can be hypothesized to relate to enrollment and attendance in behavioral parent training prevention programs.

Structural and Demographic Characteristics

Research suggests that lower socioeconomic status (SES) is associated with lower enrollment rates (Heinrichs et al. 2005; Lengua et al. 1992), with one study demonstrating that the relationship between SES and enrollment disappears when controlling for parent education (Spoth et al. 2000). Other work has failed to find relationships between parent income or education and enrollment (Gross et al. 2001; Heinrichs et al. 2005). Like SES, single parenthood has also been linked to lower enrollment rates (Heinrichs et al. 2005; Williams et al. 1995). In one contradictory study, Gross et al. (2001) found that both single and married parents' enrollment was better than that of cohabiting parents. Many studies point to logistical difficulties, like lack of time, scheduling conflicts, or family commitments, as reasons why parents choose not to participate (e.g., Garvey et al. 2006; Spoth et al. 1996). It is likely that these logistical difficulties are intrinsically linked to both SES and single parenthood.

Minority status has also been investigated as a predictor of enrollment, with most research suggesting that Caucasian families are more likely to enroll in prevention programs than families from minority groups (Williams et al. 1995), although others found no relationship between enrollment and ethnicity (Gross et al. 2001; Heinrichs et al. 2005). In this work, however, SES and ethnicity are nearly always confounded.

The same structural and demographic variables that are important in understanding parent enrollment in prevention programs also play central roles in parent attendance. For example, socioeconomic disadvantage has been repeatedly associated with lower levels of attendance in parenting programs (Kazdin 1996; Kazdin et al. 1997; Peters et al. 2005; Prinz and Miller 1994), although a handful of

prevention studies found no relationship between SES and attendance (Garvey et al. 2006; Gross et al. 2001; Nix et al. 2009). A recent meta-analysis concluded that the relationship between income and dropping out was significant though small (Reyno and McGrath 2006).

Demographic characteristics associated with intervention attendance also present a mixed picture. For example, single parenthood has typically been linked with less attendance (Dumka et al. 1997; Kazdin et al. 1997; Reyno and McGrath 2006). However, other studies have found that single caregivers attend better than married caregivers (Danoff et al. 1994; Orrell-Valente et al. 1999), that cohabiting couples were more likely to drop out than either single or married caregivers (Gross et al. 2001), or that there was no relationship between single parenthood and attendance (Garvey et al. 2006; Nix et al. 2009).

Minority group status predicts lower attendance rates (Nix et al. 2009; Reyno and McGrath 2006), although, in many studies, ethnicity is confounded with SES. However, Kazdin et al. (1995) noted that African-American families dropped out at a greater rate than Caucasian families (59.6% compared to 41.7%), even controlling for SES. It is possible that minority group members may face barriers to services because of language needs or discrimination, and the scarcity of therapists from similar cultural backgrounds likely reduces minority group members' comfort in seeking help (Illovsky 2003; Murry et al. 2004). Given the lack of information about cultural differences accounting for findings attributed to SES, more research examining these influences is needed.

Child Characteristics

Parents who enroll in parent training programs may do so because they feel they need to learn new skills and techniques to better manage their children's behavior. Parents who choose to participate in parent training interventions rate their children as having more behavior problems than those who do not (Haggerty et al. 2002), and tend to rate their children's behavior problems comparably to those in outpatient clinics (Friman et al. 1993). Several studies have found that parents who enroll in a prevention program for conduct problems report elevated child conduct problems compared to their non-participating peers (Dumas et al. 2007; Heinrichs et al. 2005). Spoth and his colleagues demonstrated that some parents choose not to enroll because they feel they are not at risk or that the program would not be useful for them (Spoth and Redmond 1993; Spoth et al. 2000). In contrast, other studies failed to find a relationship between enrollment and child behavior problems (Gross et al. 2001; Spoth et al. 1999).

Although families experiencing behavior problems seem more likely to enroll in parent prevention programs, patterns of attendance are less clear. In treatment programs, the greater children's externalizing behavior is, the more likely families are to miss sessions or drop out of interventions (August et al. 2003; Kazdin et al. 1997; Prinz and Miller 1994). In prevention work, however, families experiencing more behavior problems may be more likely to attend (Garvey et al. 2006; Heinrichs et al. 2005; Reid et al. 2004), although two studies found no relationship (Gross et al. 2001; Nix et al. 2009). Reyno and McGrath's (2006) meta-analysis failed to support a relationship between child externalizing behavior problems and parent attendance, perhaps due to contrasting patterns between prevention and treatment programs.

Parent Characteristics

In the only known study that investigated parent mental health as a predictor of enrollment in a child- and family-focused prevention program, no association was found between parent anxiety, depression, aggression problems and enrollment (Spoth et al. 1999). The link between parent characteristics and attendance in parent training treatment programs has been studied more thoroughly. Parent depression, history of parent antisocial behavior, and adverse childrearing practices have been associated with lower attendance rates in some interventions (Kazdin et al. 1997), although not in others (Gross et al. 2001; Nix et al. 2009; Prinz and Miller 1994; Reyno and McGrath 2006). Social support has frequently been associated with better compliance with recommended treatments in medical settings (e.g., Cross and Warren 1984); however, the one known study investigating social support and parent attendance in the context of a psychosocial intervention failed to find a relationship (Nix et al. 2009).

Summary

In sum, behavioral parent training programs are the gold standard in treating child conduct problems, and researchers are beginning to investigate the effectiveness of these programs in prevention contexts. However, the low levels of parent enrollment and attendance in these programs is concerning, and the limited reach of evidence-based parenting programs is a frequently identified but rarely studied phenomenon. By better understanding the families that enroll in and attend behavioral parent training prevention programs, researchers can begin to expand the applicability and usefulness of these types of interventions. As one of the first studies in this area, this paper evaluated several structural and demographic, child, and parent characteristics hypothesized to be related to family enrollment and attendance in parent training prevention programs in the context of Webster-Stratton's *Incredible Years* parent training program (Webster-Stratton 1994).

Hypotheses

Because so little is known about patterns of enrollment and attendance in prevention programs, the first goal of this study was to investigate these patterns descriptively. Second, based on our literature review, we hypothesized that low SES, single parent status, increased parent depressive symptoms, and decreased parent social support would be associated with lower levels of both enrollment and attendance, while increased child behavior problems would be associated with greater levels of both outcomes. We also utilized exploratory analyses to compare enrollment and attendance across ethnic groups. Finally, we hypothesized that these simple relationships would be maintained when we tested models that included the other predictors, controlled for SES, and accounted for center-level variance.

Method

Participants

Families were recruited from 20 preschool classrooms in 7 childcare centers in 2 urban New England areas. Five of the seven centers served economically disadvantaged families from ethnically diverse backgrounds, and the two other centers served predominantly Caucasian families with higher SES. The same percentage of invited families agreed to participate in the study from centers serving low versus higher-SES backgrounds (62%), with a total of 193 families agreeing to participate. Half of the classrooms were randomly assigned to a parent training intervention group (Arnold et al. 2006), and the parents of the 106 children (56 boys and 51 girls) in these classrooms are the participants of the present study. Parents identified 25% of the children as African-American, 31% as Puerto Rican, 30% as Caucasian, and 14% as of mixed or other ethnicity. Ethnicity is confounded with SES in this sample; all of the African American and Puerto Rican children were from the lower-SES centers, and all but eight Caucasian families were socioeconomically advantaged. The mean age of the children was 4.6 years.

Procedure

After approximately 2 months of the school year, parents learned about the study through a letter sent home from each center. Families interested in participating attended a 2-hour general group meeting, during which parents learned about the study, provided informed consent, and completed demographic questionnaires. Parents interested in enrolling but who could not attend this general meeting met individually with the researchers. Families were paid $30 for their participation in this meeting.

Parents randomly assigned to the intervention group were invited to participate in parent training workshops through a letter sent home and a phone call. Parent training generally occurred in eight group sessions during the late fall. Parent training at one center included only six sessions because all but one parent had dropped out. Sessions were scheduled weekly, though meetings were adjusted as needed for holidays. Sessions were held on weekday evenings at the centers, and meals and child care were provided. Parents who had attended the previous session were called by group leaders after an absence, and all parents who had ever attended were called before the last session and asked if they would be willing to attend. Financial incentives were not provided for attendance.

The parent workshops utilized the *Incredible Years* (Webster-Stratton 1994), a well-established program for externalizing problems (Brestan and Eyberg 1998). This program helps parents build positive relationships with their children and learn consistent, firm, appropriate responses to aggression and other discipline problems, using videotaped vignettes of parents interacting with their children in appropriate and inappropriate ways. After watching the vignettes, discussions are held about how the program principles apply to the parents' situations. In addition, parents are given homework assignments to practice program skills. The 12–15 week curriculum was reduced to 8 weeks for use in this study, in consultation with Webster-Stratton. The sessions used in this study covered 1) play and other positive interactions; 2) attention, encouragement, and praise; 3) motivating children, reward programs; 4) effective limit setting and preventing problems; 5) strategies for minor misbehavior; 6) strategies for severe behavior problems; 7) consequences and problem-solving; and 8) putting it all together.

Two advanced clinical psychology doctoral students led the parent training; these group leaders were trained and supervised weekly by the project coordinator, a licensed clinical psychologist who received training directly from Webster-Stratton. Nineteen percent of the parents reported speaking Spanish at home, though these families were also comfortable in English. Nonetheless, all materials were available in Spanish, and group leaders were bilingual. Cultural differences in parenting were also discussed throughout the program.

Measures

Parent Satisfaction Ratings Parents completed a four-item satisfaction questionnaire after each parent training session. The scale consists of questions about parents' level of satisfaction with the program content, videotape examples, leader's teaching, and group discussion, each on a three-

point Likert scale ranging from 1 (not helpful/poor) to 3 (helpful/good).

Socioeconomic Status For the purposes of this study, families were identified as either high or low income based on the childcare center they utilized. Families from the disadvantaged subsample reported a median income of $28,250, while families in the more affluent subsample reported a median income of $61,000. We made the decision to dichotomize this variable for two reasons; first, given the homogeneity of family's incomes within centers, this seemed to capture the nature of SES within this sample more accurately than would a continuous variable. Further, because a number of families did not answer our questions about income, this approach minimized missing data.

Single Parenthood Parents were identified to be single parents based on the question: "Are you married or living with someone who plays an important role in the care of your child?" Parents who reported living with relatives (e.g., grandparents, aunts) were identified as single parents unless direct evidence indicated that the relative was actively involved as a second caregiver.

Externalizing Behavior Teachers completed the Teacher's Report Form (TRF; Achenbach 1991) to measure the frequency of externalizing symptoms displayed by each participating child in the classroom. The TRF provides an Externalizing Problem Scale, on which *t*-scores less than 60 are considered to be in the normal range, 60–63 represent borderline scores, and scores greater than 63 are considered to be in the clinical range. The Externalizing Problem Scale includes the delinquency (which we call rule-breaking in this paper due to the age of the children) and aggressive behavior subscales, on which *t*-scores less than 67 are considered in the normal range, scores ranging from 67–70 represent the borderline clinical range, and scores above 70 are considered to be in the clinical range. This 112-item scale has been standardized for use with children between the ages of 4 and 18, and has been used extensively with preschool children. Teachers responded along a three-point Likert scale including "not true (as far as you know)," "somewhat or sometimes true,"and "very true or often true" to items like "lying or cheating" and "doesn't seem to feel guilty after misbehaving." Adequate reliability and validity data have been established for this measure (Achenbach 1991).

Parent Depressive Symptoms Parents completed the Brief Symptom Inventory (BSI; Derogatis 1993). The BSI measures a range of psychological problems by asking respondents to rate 53 items like "feeling blue," and "feeling no interest in things" on a five-point Likert scale ranging from "not at all" to "extremely." BSI scores are interpreted by comparison to age-appropriate norms that take into account gender and clinical/community status. As a result, the majority of our sample was normed as non-patient adult females, with *t*-scores of 60 corresponding to the 84th percentile, *t*-scores of 70 corresponding to the 93rd percentile, and *t*-scores of 80 corresponding to the 98th percentile. The BSI has excellent test-retest reliability, internal consistency estimated at .85, and validity data supporting its use (Boulet and Boss 1991; Derogatis 1993). The BSI has been utilized across a wide variety of ethnic groups, including African-Americans and Latinos in both clinic and community samples (Coelho et al. 1998; Dilworth-Anderson et al. 1999; Land and Hudson 2002). In this sample, alpha was .96.

Parent Social Support During the first wave of data collection, 42 parents completed the Social Support Appraisals Scale (SSAS; Vaux 1986), a 23-item self-report instrument. The SSAS includes items like "I can rely on my friends" and "my family cares for me very much." Respondents rate each item on a four-point Likert scale ranging from "strongly agree" to "strongly disagree." The SSAS has been demonstrated to have adequate reliability and validity (Vaux 1986). In order to reduce the length of the questionnaire packet, parents in subsequent waves completed the shorter, 12-item Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al. 1988). The MSPSS includes items like "my family really tries to help me" and "I can talk about my problems with my friends" and utilizes a seven-point Likert scale ranging from "very strongly disagree" to "very strongly agree." The MSPSS has been demonstrated to have adequate reliability and validity (Dahlem et al. 1991; Stanley et al. 1998). In this sample, alpha was .83 for the SSAS and .96 for the MSPSS. Overall, these scales assess very similar content areas. Both measures focus on support from family and friends. In addition, the SSAS also includes items focused on general social support, like "I am well liked" while the MSPSS contains items about a close relationship like "I have a special person who is a real source of comfort to me." Participants' raw SSAS and MSPSS scores were standardized (i.e., transformed to *z*-scores), to create comparable social support scores across study participants.

Enrollment and Attendance Enrollment was assessed as a dichotomous outcome variable (never participated in program = 0 versus participated in at least one program session = 1). Parents who never enrolled were not given an attendance score and were not included in attendance analyses; for those parents who attended at least one parent training session, attendance was calculated as percentage of sessions attended (range 12.5–100%). Families were given credit for attending when at least one parent came to a

session. Fifty-one (25 boys and 26 girls) of the 106 children and their parents assigned to the intervention group enrolled.

Analytic Approach

First, descriptive statistics and patterns of attendance were evaluated. Second, four sets of statistical analyses were conducted. Simple relationships between the predictors and the two outcomes (e.g., enrollment and attendance) were estimated using chi-square tests, *t*-tests, and correlations. We investigated the child externalizing behavior predictor separately utilizing both the externalizing scale and both of its contributing subscales (rule-breaking and aggression). Next, a logistic regression was fit predicting enrollment from the predictors; the attendance outcome was not modeled due to power limitations from the smaller sample for these analyses. Then, for those predictors that were significantly related to outcomes, regression analyses were conducted in order to re-evaluate the relationships while controlling for SES. Finally, hierarchical linear modeling was utilized to re-evaluate the relationships while accounting for variability due to center membership.

Results

Descriptive Statistics

Scores on our measure of child externalizing behavior (Mean *t*-score = 56.56, *SD*=8.91) and parent depression (Mean *t*-score = 50.55, *SD*=9.86) were consistent with the community nature of the sample. A modest number of clinically significant scores on these predictor variables were observed. Specifically, 20% of children had *t*-scores in the clinical range on the Externalizing Problem Scale, while 1% had *t*-scores in the clinical range on the rule-breaking subscale and 9% had *t*-scores in the clinical range on the aggression subscale. Similarly, 29% of parents reported depression *t*-scores greater than or equal to 60 and 4% had *t*-scores greater than or equal to 70.

Of the 106 families that were assigned to the intervention group, only 51 (48%) of the eligible families enrolled in the program by attending at least one session. Of those 51 families that enrolled in the program by attending at least one session, parents attended an average of 61% of the sessions, or 4.9 of the 8 sessions. Therefore, 106 families were included in statistical analyses related to enrollment, while 51 were included in analyses related to attendance.

Attendance generally decreased steadily between the first and seventh session, starting with 84% of families attending the first session and decreasing to only 41% of families attending the seventh session; see Fig. 1 (because all enrolled families were specifically encouraged by a reminder phone call to attend the final session, this session was excluded from descriptive analyses related to attendance). Given that the attendance rate decreases steadily, it seems unlikely that the content of any particular session was responsible for family dropout. Indeed, means for the satisfaction items ranged from 2.65 (*SD*=.50) to 2.97 (*SD*=.18), indicating that parents reported being very satisfied with the intervention. Table 1 provides enrollment and attendance rates by demographic group and suggests that higher SES, dual parent, and Caucasian families enrolled at a higher rate while differences regarding attendance are generally less striking.

Patterns of Attendance

The nature of attendance in this program also differs depending on what type of attendance pattern is being considered (see Fig. 2). Of those 51 families that attended at least one parent training session, six, or about 12%, never missed a session ("perfect attendees"). Seventeen (33%) of families can be categorized as dropping out ("drop outs"), meaning that once they missed a session, they did not return to the program. Seven of these 17 "drop outs" attended only the first session before leaving the program. Finally, 28 (55%) of families missed at least one session but returned to the program after their absence ("mixed attendees"). The majority of these "mixed attendee" families attended either four or five sessions. These three groups differed significantly in terms of their attendance in the parent training sessions, $F(2,48)=23.49$, $p<.001$. "Perfect attendees" (100% of sessions attended), of course, attended more sessions than "mixed attendees" (*M*=66.58% sessions attended, *SD*=18.47%), who attended more sessions than "drop outs" (*M*=36.55% sessions attended, *SD*=26.67%), all *p*s<.01.

Predictors of Enrollment and Attendance

Socioeconomic Status As hypothesized, enrollment differed substantially between high and low SES, $X^2(1)=15.42$, $p<.001$. Eighty-three percent of high SES parents enrolled, compared to only 38% of low SES families. In contrast to the strong relationship between SES and enrollment, SES was not associated with attendance rates for those parents who attended at least one session, with low income families attending an average of 58% of sessions and high income families attending an average of 64%, $t(49)=-.76$, $p=.45$.

Single Parenthood Though patterns were in the predicted direction, single parenthood was not significantly associated with enrollment in the intervention, with 59% of dual parent

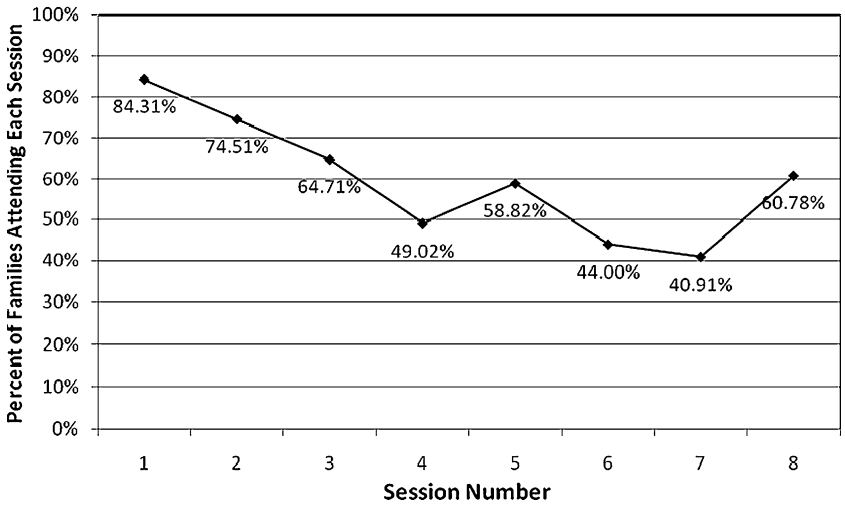

Fig. 1 Attendance percentage by session for families that attended at least one session

families and 47% of single parent families enrolling, $X^2(1)=1.19$, $p=.28$. As hypothesized, among families that attended at least one session, parents from dual parent households attended significantly more sessions (70%) than single parents (48%), $t(46)=-2.85$, $p<.01$. As this finding might be an artifact of dual parents having twice as many adults available to attend sessions, this hypothesis was also tested utilizing the attendance record of only the better-attending parent of dual parent households; the finding was maintained, $t(46)=-2.69$, $p<.01$.

Ethnicity A minority of dual-parent families included parents with different ethnic backgrounds. These families were identified when the child participating in the study was reported to be multiethnic, and they were excluded from the following analyses. African-American, Puerto Rican, and Caucasian families differed significantly in their enrollment, $X^2(2)=16.17$, $p<.001$. Caucasian (78%) families were significantly more likely to enroll than both African-American (41%) and Puerto Rican (30%) families, $X^2(1)=8.60$, $p<.01$ and $X^2(1)=14.95$, $p<.001$, respectively. African-American and Puerto Rican families did not differ significantly in their enrollment, $X^2(1)=.71$, $p=.40$. However, ethnicity is confounded with SES in our sample. The attendance rates for those 51 parents who attended at least one session did not significantly differ between African-American (53%), Puerto Rican (73%) and Caucasian (64%) families, $F(2, 43)=1.25$, $p=.30$. Although these analyses lack power due to the small sample size of each subgroup, the direction of effects is not consistent with the hypothesis that minority families would attend fewer sessions.

Externalizing Behavior Problems No significant differences were found between the child behavior ratings of families that enrolled ($M=57.09$, $SD=9.57$) and those who never enrolled ($M=56.05$, $SD=8.28$), $t(97)=-.58$, $p=.57$. No significant relationship was found between the externalizing behavior scale and attendance, $r(49)=.22$, $p=.14$; however, consistent with our hypothesis, the rule-breaking behavior subscale was positively related to parents' attendance in the program, $r(49)=.29$, $p=.05$. Children with more rule-breaking behavior, as rated by their teachers, had parents who attended more parent training sessions.

Table 1 Enrollment and attendance percentages by demographic characteristics

Variable	Percentage of families enrolled	Mean percentage attendance for those families enrolled (*SD*)
Total Sample ($n=106$)	48%	61% (29%)
Low SES ($n=82$)	38%	58% (32%)
High SES ($n=24$)	83%	64% (23%)
Single Parent ($n=37$)	47%	48% (30%)
Dual Parent ($n=50$)	59%	70% (22%)
African-American ($n=27$)	41%	53% (30%)
Puerto Rican ($n=33$)	30%	73% (26%)
Caucasian ($n=32$)	78%	64% (28%)

Some parents were not classified as single or dual parents because they did not answer this question

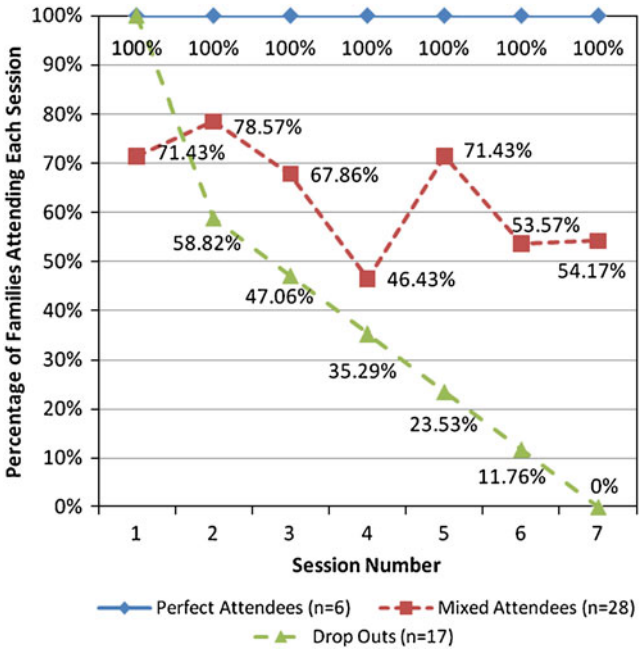

Fig. 2 Attendance percentage across sessions by attendance category (perfect attendees, mixed attendees, and drop outs) for families that attended at least one session

Parent Depressive Symptoms No significant differences were found between the parent depression scores of those enrolled (M=51.02, SD=9.36) and those who never enrolled (M=49.94, SD=10.58), $t(76)=-.48$, $p=.63$. Parent depressive symptoms were also hypothesized to be associated with decreased attendance, but no significant relationship was found, $r(44)=.05$, $p=.74$.

Parent Social Support As hypothesized, those parents who enrolled reported significantly greater social support (M=.30, SD= .79) than those who did not ($M=-.38$, SD= 1.06), $t(74)=-2.66$, $p=.01$. No significant relationship was found between parent attendance and perceived social support among those families that attended at least one session, $r(42)=-.06$, $p=.71$.

Modeling the Relationships between Enrollment and the Predictors

A logistic regression was estimated predicting enrollment from SES, single parent status, child externalizing behavior problems, parent depressive symptoms and parent social support. Ethnicity was excluded from the model due to its colinearity with SES. Significant relationships between SES and enrollment (b=1.90, se=.76, $p=.01$) and parent social support and enrollment (b=.61, se=.28, $p=.03$) were maintained, controlling for the other predictors. All other predictors were not significantly related to enrollment.

Controlling for the Effects of SES

It is possible that the effects reported above were driven by SES, given likely SES differences in these predictors. The relationship between ethnicity and enrollment could not be evaluated controlling for SES because of the confounding between ethnicity and SES in this sample. However, the significant relationship between enrollment and social support was estimated again using logistic regression and controlling for SES, and the relationships between attendance and both single parenthood and child rule-breaking behavior were estimated again using linear regressions, controlling for SES. All significant findings remained significant.

Controlling for Classroom Variance

Because all of our predictors were at the level of the parent, and because attendance was also an individual parent decision, we did not expect major classroom effects, and so ran our primary analyses with individual families as the unit of analysis. However, children were grouped within classrooms, and child externalizing behavior problems were reported by the classroom teacher. In addition, children were randomized between control and intervention groups at the classroom level. Thus, it is possible that significant classroom effects could be observed. In order to allow for the possibility of such effects, we examined two-level random intercepts mixed linear models, using hierarchical linear modeling (Raudenbush and Bryk 2002). These allow for the associations between the predictors and outcomes to be evaluated accounting for the hierarchical data structure of children within classrooms. Specifically, the relationship between social support and enrollment remained significant and the effect size was of comparable size when using nested models. Similarly, attendance was predicted from single parenthood and from child rule-breaking behavior, controlling for children nested within classroom; both findings remained significant, and effect sizes were comparable to the original analyses. Analyses considering SES and ethnicity could not be considered using nested models, because of the confounding of these variables and classrooms.

Discussion

Behavioral parent training programs are the gold standard for treating conduct problems (e.g., Brestan and Eyberg 1998; Dretzke et al. 2009), and researchers are beginning to

investigate the effectiveness of these programs in preventing externalizing problems (e.g., Webster-Stratton et al. 2001). However, these programs have been plagued with low levels of parent enrollment and attendance, likely limiting both the research on and the clinical effectiveness of these programs. Even when offered a well-validated and well-received program, 55 of the 106 families that originally volunteered for this study failed to attend a single parent training session. Although the enrollment rate of 48% in this study is higher than that reported in the literature (Garvey et al. 2006; Heinrichs et al. 2005; Spoth and Redmond 2000), this is likely inflated because only families willing to participate in the overall study (i.e., those willing to complete pretest questionnaires) are considered in this statistic.

Of those 51 families that did enroll, the average attendance rate was 61%, which is consistent with the previous literature (Frey and Snow 2005; Kazdin 1996; Orrell-Valente et al. 1999). These discouragingly low rates further support the need for future research on the constructs of enrollment and attendance in the context of parent training prevention programs. Notably, although these rates seem low, they are comparable to the average attendance rates for similar services, including initial mental health visits (McKay et al. 1996) and appointments for medical services (Macharia et al. 1992). Therefore, these rates may also be the result of parents choosing between prevention programs and other attractive alternatives for their time and resources in a consumer-oriented society. Thus, making prevention programs attractive and relevant to consumers is another important avenue of future research.

When attendance rates were analyzed by session, it became apparent that many parents attended the first parent training session, and that the attendance rate generally decreased to only about 40% by the penultimate session. The final session was associated with an increase in parent attendance, which is thought to be due to the researchers' phone call reminders that parents attend; alternatively, the increase in attendance during the final session could reflect parents' desire for closure or the celebratory nature of the last session.

This study identified three patterns of attendance. First, a small minority of parents attended every session. About one third of the remaining families never returned to the parent training meetings after they missed one session, with almost half of this group attending only the first session. On average, this "drop out" group attended only about 37% of sessions. This pattern suggests that retention of parents should begin at the first session and that researchers and clinicians should consider actively reaching out to parents after they miss even one session. In addition, future research should directly examine why parents permanently drop out of programs. Knowing whether these parents left the program because they felt they could not benefit, were unsatisfied, or were worried about falling behind their peers after missing a session would help facilitate strategies to reduce this type of dropping out. The remaining families, slightly less than two thirds of the original number, attended sessions sporadically, usually attending about four or five of the sessions over the course of the program. Although the overall percentage of sessions attended by these families was much higher than that of families that never returned after missing a session, it was still only about 67%. The effectiveness of the intervention for these parents may have been diminished by their sporadic attendance.

Although this study lacked the power to evaluate differences in predictors of attendance among the three subgroups of attendees, future research should replicate and focus on these three distinct patterns of attendance, including possible between- and within-group differences relating to the predictors of attendance. In addition, these three patterns can be utilized to develop retention strategies, especially for those families in the "drop out" group who miss the largest part of the intervention. These ideas can be used in conjunction with other strategies that are currently being developed, such as a brief intervention explicitly aimed to increase parent motivation for treatment and address barriers to staying involved (Nock and Kazdin 2005). This brief intervention has been demonstrated to be effective at increasing treatment attendance and adherence for parents involved in parent training for their children's conduct problems.

This study is one of the first to examine enrollment and attendance separately in a prevention context. Although studies that address these constructs in parent training prevention programs are beginning to appear in the literature (Garvey et al. 2006; Gross et al. 2001; Heinrichs et al. 2005; Nix et al. 2009), enrollment and attendance are sometimes blended into one continuous measure, which may miss important distinctions between the constructs (e.g., Garvey et al. 2006; Gross et al. 2001). In this study, enrollment and attendance were related to different variables, suggesting that these constructs may be qualitatively different.

Specifically, low SES and limited social support may be barriers to enrolling in a prevention program. Although research has demonstrated that parents across all levels of SES find these types of parent training programs interesting and potentially helpful (Gross et al. 2001), these results suggest that parents with lower SES and less social support may lack the resources to participate. Contrary to this study's hypotheses, enrollment was not associated with single parent status, child externalizing behavior problems, or parent depression.

With more than 50% of interested parents unable or unwilling to attend a single parent training session,

enrollment must be a focus of future research. Spoth and colleagues (2000) have modeled parent engagement from parents' perceptions of the barriers to and benefits of the intervention. This and future work provide valuable information about what parents want and need in a parent training intervention, allowing researchers to shape the programs to fit the families that need them the most. One example of such a modification to traditional parent training programs may be to shift to an outreach or home-delivery model. The CPPRG investigated profiles of a subset of families that attended few groups but were willing to receive home visits and suggested that parent interventions may need to be individualized and home-delivered to overcome the considerable barriers to treatment these interested parents face (Nix et al. 2005). Even parent training groups in traditional clinic settings can benefit from the research on increasing enrollment. For example, Sandler and Cialdini's efforts to blend the persuasion literature into program enrollment strategies provide innovative and effective ways to market prevention programs to families that stand to benefit (Sandler et al. 2009). Finally, in contrast to these modifications, which in some ways make the programs more intensive and expensive, other less intrusive prevention strategies may be easier for parents to fit into their complex lives, such as internet-based, self-administered approaches or access to briefer parenting consultations in primary care settings. Along these lines, researchers have begun to investigate the idea of a minimally sufficient intervention utilizing a public health approach within the context of the Triple P – Positive Parenting Program (e.g., Sanders 1999).

Among parents who attended at least one session, single parenthood was an important predictor of attendance. Single parents may have difficulty attending sessions because they may encounter more barriers than parents in dual-caregiver households, including logistical difficulties, shortages of time, and competing demands. It should be noted that we did not differentiate between married and cohabitating couples, and previous studies have found attendance differences as a function of this distinction (e.g., Gross et al. 2001). Severity of children's externalizing behavior was also associated with attendance. Contrary to previous treatment research (e.g., Kazdin et al. 1997), but in line with previous prevention research (e.g., Reid et al. 2004), parents whose children evidenced behavior problems were more likely to stay involved in this program. In this study, contrary to hypotheses, SES, depression, and social support were not significantly related to parent attendance.

This study also compared the enrollment and attendance rates of African-American, Puerto Rican, and Caucasian families. Ethnicity was a significant predictor of enrollment, with Caucasian families enrolling more than families from both ethnic minority groups. However, ethnicity was not a significant predictor of attendance. The importance of making cultural adaptations to parent training interventions has been long-known (Forehand and Kotchick 1996), and making these adaptations remains a challenge in the field. However, the results of this study raise the possibility that expectations of cultural mismatches may be just as important to consider as the cultural mismatches that occur during implementation and point to the importance of considering cultural adaptations even before programs begin. Unfortunately, these analyses are confounded with SES, and the effects of SES and ethnicity could not be disentangled. Future research which is able to further unpack these findings will help clarify the role of processes related to ethnicity, race, and culture in enrollment and attendance in prevention programs.

This study was able to delineate predictors of enrollment, which were supported in larger models including all predictors and controlling for center-level variance. Although this study lacked the power to evaluate the predictors of attendance together within a larger model, multi-level modeling did support the simple relationships when controlling for variance associated with the childcare centers. Future studies with greater power should be able to utilize multiple regression models to simultaneously model the relationships between the predictors and outcomes, take into account the interrelationships among the predictors, and provide an examination of the predictors' relative value in predicting outcomes like parent attendance. One excellent example of such research utilized advanced modeling techniques to determine that the relationship between characteristics like SES, single parent status, and child IQ and program attendance was moderated by the psychological functioning of the parent, which in turn affected treatment outcome (Realmuto et al. 2004). Other work has started to examine engagement as a joint function of the relationship between the family and the interventionist (e.g., Shaw et al. 2006). Finally, research has begun connecting these process ideas with clinical outcomes (e.g., Nix et al. 2009), an important next step in determining the role and importance of attendance in prevention efforts.

Continued research that acknowledges and incorporates the complexity inherent in decisions to enroll in and attend interventions will provide prevention researchers and clinicians with the information they need to ensure that their work has the best chance to help those who need it the most. While we were able to investigate typical variables like SES, single parenthood, and ethnicity, like most researchers, we were unable to "look under the hood" to better understand how they are related to enrollment and attendance. Future work should focus on the process of implementation as an outcome in and of itself, rather than as an afterthought to intervention-focused research. This work should priori-

tize a deeper understanding of participants' lives and understanding of their own engagement in interventions, as well as investigating interventions that directly target the structural and demographic, parent, and child characteristics that have been demonstrated to be associated with enrollment and attendance.

Although common sense suggests that parents will not benefit from a program unless they enroll, the relationship between child behavior outcomes and parent attendance may be less clear. Different families may require different levels of intervention, and for many parents, attending a few sessions may be sufficient. Future research should focus on determining adequate dosage of interventions with the goal of providing benchmarks for clinicians regarding minimum attendance, thus allowing them to aim not so much at high attendance, but at a level of attendance that best meets parents' needs, knowing that these will not be the same for all families (Sanders 1999). In addition, although some work has demonstrated a positive relationship between child outcomes and parent attendance (Reyno and McGrath 2006; Spoth and Redmond 1996), others suggest that the quality rather than the quantity of attendance is important. For example, level of engagement has been linked to improvements in parent and child outcomes (Garvey et al. 2006; Nix et al. 2009). Although enrollment and attendance are indicators of parents' engagement in the program, a direct measure of this construct would have been useful in better understanding why parents were able to get and stay involved in this prevention program. Finally, although the parents in our study generally reported being very satisfied with the program, many of them still failed to return to later sessions. Unfortunately our measure of parent satisfaction exhibited a ceiling effect that did not allow us to investigate it as a proxy of parent engagement, but future research should continue to investigate the varying roles of enrollment, attendance, and engagement in parent training prevention programs.

A strength of this study is that it focuses on a community-based prevention program. At the same time, because this study utilizes a community rather than clinic sample, predictor variables such as child externalizing symptoms occurred relatively infrequently, reducing our power to detect associations between these variables and outcomes. In addition, data were only collected from families that attended the initial study meeting. Therefore, a third important group of parents was not assessed—those not interested in participating at all in the study. Although this is a challenging group to access, future work should attempt to better understand these parents in an effort to meet the needs of all families, allowing them to participate in, and benefit from, future prevention efforts.

References

Achenbach, T. M. (1991). *Manual for the Teacher's Report Form and 1991 Profile*. Burlington: University of Vermont, Department of Psychiatry.

Arnold, D. H., Brown, S., Meagher, S., Baker, C. N., Dobbs, J., & Doctoroff, G. L. (2006). Preschool-based programs for externalizing problems. *Education and Treatment of Children, 29*, 311–340.

August, G. J., Egan, E. A., Realmuto, G. M., & Hektner, J. M. (2003). Parceling component effects of a multifaceted prevention program for disruptive elementary school children. *Journal of Abnormal Child Psychology, 31*, 515–527.

Boulet, J., & Boss, M. W. (1991). Reliability and validity of the Brief Symptom Inventory. *Psychological Assessment, 3*, 433–437.

Brestan, E. V., & Eyberg, S. M. (1998). Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5, 272 kids. *Journal of Clinical Child Psychology, 27*, 180–189.

Coelho, V. L. D., Strauss, M. E., & Jenkins, J. H. (1998). Expression of symptomatic distress by Puerto Rican and Euro-American patients with depression and schizophrenia. *The Journal of Nervous and Mental Disease, 186*, 477–483.

Cross, D. G., & Warren, C. E. (1984). Factors associated with continuers and terminators in adult out-patient psychotherapy. *The British Journal of Medical Psychology, 57*, 363–369.

Dahlem, N. W., Zimet, G. D., & Walker, R. R. (1991). The Multidimensional Scale of Perceived Social Support: A confirmation study. *Journal of Clinical Psychology, 47*, 756–761.

Danoff, N. L., Kemper, K. J., & Sherry, B. (1994). Risk factors for dropping out of a parenting education program. *Child Abuse & Neglect, 18*, 599–606.

Derogatis, L. R. (1993). *Brief Symptom Inventory: Administration, scoring, and procedures manual*. Minneapolis, MN: National Computer Systems.

Dilworth-Anderson, P., Williams, S. W., & Cooper, T. (1999). The contexts of experiencing emotional distress among family caregivers to elderly African Americans. *Family Relationships, 48*, 391–396.

Dretzke, J., Davenport, C., Frew, E., Barlow, J., Stewart-Brown, S., Bayliss, S., et al. (2009). The clinical effectiveness of different parenting programmes for children with conduct problems: A systematic review of randomised controlled trials. *Child and Adolescent Psychiatry and Mental Health, 3*, 7–16.

Dumas, J. E., Nissley-Tsiopinis, J., & Moreland, A. D. (2007). From intent to enrollment, attendance, and participation in preventive parenting groups. *Journal of Child and Family Studies, 16*, 1–26.

Dumka, L. E., Garza, C. A., Roosa, M. W., & Stoerzinger, H. D. (1997). Recruitment and retention of high-risk families into a preventive parent training intervention. *The Journal of Primary Prevention, 18*, 25–39.

Forehand, R., & Kotchick, B. A. (1996). Cultural diversity: A wake-up call for parent training. *Behavior Therapy, 27*, 187–206.

Foster, E. M., Jones, D. E., & the Conduct Problems Prevention Research Group. (2005). The high costs of aggression: Public expenditures resulting from conduct disorder. *American Journal of Public Health, 95*, 1767–1772.

Frey, M. R., & Snow, J. N. (2005). The personality construct of entitlement: An intervention for decreasing attrition in parent groups. *Journal of Individual Psychology, 61*, 161–173.

Friman, P. C., Soper, S. H., Thompson, R. W., & Daly, D. L. (1993). Do children from community-based parent training programs have clinically significant behavior problems? *Journal of Community Psychology, 21*, 56–63.

Garvey, C., Julion, W., Fogg, L., Kratovil, A., & Gross, D. (2006). Measuring participation in a prevention trial with parents of young children. *Research in Nursing & Health, 29*, 212–222.

Gross, D., Julion, W., & Fogg, L. (2001). What motivates participation and dropout among low-income urban families of color in a prevention intervention? *Family Relations, 50*, 246–254.

Haggerty, K. P., Fleming, C. B., Lonczak, H. S., Oxford, M. L., Harachi, T. W., & Catalano, R. (2002). Predictors of participation in parenting workshops. *The Journal of Primary Prevention, 22*, 375–387.

Heinrichs, N., Bertram, H., Kuschel, A., & Hahlweg, K. (2005). Parent recruitment and retention in a universal prevention program for child behavior and emotional problems: Barriers to research and program participation. *Prevention Science, 6*, 275–286.

Illovsky, M. E. (2003). *Mental health professionals, minorities, and the poor*. New York: Brunner-Routledge.

Kazdin, A. E. (1996). Dropping out of child psychotherapy: Issues for research and implications for practice. *Clinical Child Psychology and Psychiatry, 1*, 133–156.

Kazdin, A. E., Stolar, M. J., & Marciano, P. L. (1995). Risk factors for dropping out of treatment among White and Black families. *Journal of Family Psychology, 9*, 402–417.

Kazdin, A. E., Holland, L., & Crowley, M. (1997). Family experience of barriers to treatment and premature termination from child therapy. *Journal of Consulting and Clinical Psychology, 65*, 453–463.

Land, H., & Hudson, S. (2002). HIV serostatus and factors related to physical and mental well-being in Latina family AIDS caregivers. *Social Science & Medicine, 54*, 147–159.

Leaf, P. J., Alegrea, M., Cohen, P., Goodman, S. H., Horwitz, S. M., Hoven, C. W., et al. (1996). Mental health service use in the community and schools: The four-community MECA study. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 889–897.

Lengua, L. J., Roosa, M. W., Schupak-Neuberg, E., Michaels, M. L., Berg, C. N., & Weschler, L. F. (1992). Using focus groups to guide the development of a parenting program for difficult-to-reach, high-risk families. *Family Relations, 41*, 163–168.

Macharia, W. M., Leon, G., Rowe, B. H., Stephenson, B. J., & Haynes, R. B. (1992). An overview of interventions to improve compliance with appointment keeping for medical services. *Journal of the American Medical Association, 267*, 1813–1817.

McKay, M. M., McCadam, K., & Gonzales, J. J. (1996). Addressing the barriers to mental health services for inner city children and their caretakers. *Community Mental Health Journal, 32*, 353–361.

Moffit, T. E., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescent-onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. *Development and Psychopathology, 8*, 399–424.

Murry, V. M., Kotchick, B. A., Wallace, S., Ketchen, B., Eddings, K., Heller, L., et al. (2004). Race, culture, and ethnicity: Implications for a community intervention. *Journal of Child and Family Studies, 13*, 81–99.

Nix, R. L., Pinderhughes, E. E., Beirman, K. L., Maples, J. J., & the Conduct Problems Prevention Research Group. (2005). Decoupling the relation between risk factors for conduct problems and the receipt of intervention services: Participation across multiple components of a prevention program. *American Journal of Community Psychology, 36*, 307–325.

Nix, R. L., Bierman, K. L., McMahon, R. J., & the Conduct Problems Prevention Research Group. (2009). How attendance and quality of participation affect treatment response to parent management training. *Journal of Consulting and Clinical Psychology, 77*, 429–238.

Nock, M. K., & Kazdin, A. E. (2005). Randomized controlled trial of a brief intervention for increasing participation in parent management training. *Journal of Consulting and Clinical Psychology, 73*, 872–879.

Orrell-Valente, J. K., Pinderhughes, E. E., Valente, E., Jr., Laird, R. D., & the Conduct Problems Prevention Research Group. (1999). If it's offered, will they come? Influences on parents' participation in a community-based conduct problems prevention program. *American Journal of Community Psychology, 27*, 753–783.

Peters, S., Calam, R., & Harrington, R. (2005). Maternal attributions and expressed emotion as predictors of attendance at parent management training. *Journal of Child Psychology and Psychiatry, 46*, 436–448.

Prinz, R. J., & Miller, G. E. (1994). Family-based treatment for childhood antisocial behavior: Experimental influences on dropout and engagement. *Journal of Consulting and Clinical Psychology, 62*, 645–650.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). London: Sage.

Realmuto, G. M., August, G. J., & Egan, E. A. (2004). Testing the goodness-of-fit of a multifaceted preventive intervention for children at risk for conduct disorder. *Canadian Journal of Psychiatry, 49*, 743–752.

Reid, M. J., Webster-Stratton, C., & Baydar, N. (2004). Halting the development of conduct problems in Head Start children: The effects of parent training. *Journal of Clinical Child and Adolescent Psychology, 33*, 279–291.

Reyno, S. M., & McGrath, P. J. (2006). Predictors of parent training efficacy for child externalizing behavior problems—a meta-analytic review. *Journal of Child Psychology and Psychiatry, 47*, 99–111.

Sanders, M. R. (1999). Triple P-Positive Parenting Program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Behavioral Science, 2*, 71–90.

Sandler, I. (Chair), Braver, S., Cialdini, R., & Winslow, E. (2009, May). *Experimental study of recruiting to an effective parenting program.* Symposium conducted at the 17th Annual Meeting of the Society for Prevention Research, Washington DC.

Shaw, D. S., Dishion, T. J., Supplee, L., Gardner, F., & Arnds, K. (2006). Randomized trial of a family-centered approach to the prevention of early conduct problems: 2-year effects of the Family Check-Up in early childhood. *Journal of Consulting and Clinical Psychology, 74*, 1–9.

Spoth, R., & Redmond, C. (1993). Study of participation barriers in family-focused prevention: Research issues and preliminary results. *International Journal of Community Health Education, 13*, 365–388.

Spoth, R., & Redmond, C. (1996). A theory-based parent competency model incorporating intervention attendance effects. *Family Relations, 45*, 139–147.

Spoth, R., & Redmond, C. (2000). Research on family engagement in preventive interventions: Toward improved use of scientific findings in primary prevention practice. *The Journal of Primary Prevention, 21*, 267–284.

Spoth, R., Redmond, C., Hockaday, C., & Shin, C. Y. (1996). Barriers to participation in family skills preventive interventions and their evaluations: A replication and extension. *Family Relations, 45*, 247–254.

Spoth, R., Goldberg, C., & Redmond, C. (1999). Engaging families in longitudinal preventive intervention research: Discrete-time survival analysis of sociodemographic and social-emotional risk factors. *Journal of Consulting and Clinical Psychology, 67*, 157–163.

Spoth, R., Redmond, C., & Shin, C. (2000). Modeling factors influencing enrollment in family-focused preventive intervention research. *Prevention Science, 1*, 213–225.

Stanley, M. A., Beck, J. G., & Zebb, B. J. (1998). Psychometric properties of the MSPSS in older adults. *Aging & Mental Health, 2*, 186–193.

US Department of Health and Human Services. (1999). *Mental health: A report of the surgeon general*. Rockville, MD: Author.

Vaux, A. (1986). The Social Support Appraisals (SS-A) Scale: Studies of reliability and validity. *American Journal of Community Psychology, 14*, 195–219.

Webster-Stratton, C. (1994). Advancing videotape parent training: A comparison study. *Journal of Consulting and Clinical Psychology, 62*, 583–593.

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parent competencies. *Journal of Consulting and Clinical Psychology, 66*, 715–730.

Webster-Stratton, C., & Hammond, M. (1998). Conduct problems and level of social competence in Head Start children: Prevalence, pervasiveness, and associated risk factors. *Clinical Child and Family Psychology Review, 1*, 101–124.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology, 30*, 283–302.

Williams, C. L., Perry, C. L., Dudovitz, B., Veblen-Mortenson, S., Anstine, P. S., Komro, K. A., et al. (1995). A home-based prevention program for sixth-grade alcohol use: Results from Project Northland. *The Journal of Primary Prevention, 16*, 125–147.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*, 30–41.