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Predictors of Engagement in a School-Based Family Preventive Intervention for Youth Experiencing Behavioral Difficulties

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Abstract

The researchers longitudinally assessed parent and child levels of engagement in an evidence-based preventive intervention for children. The sample included 114 fifth graders with aggressive, disruptive behaviors and their parents who participated in the Coping Power Program. Findings indicate that levels of engagement differentially fluctuated for children and parents throughout the course of the intervention. Results also suggest that child levels of engagement early in the course of the program influenced parent mid-intervention levels of engagement. Further, these relationships persisted when the influence of family environment variables were included in analyses.

Keywords

child intervention engagement; family intervention; behavioral difficulties; school-based; Cognitive-Behavioral

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There is currently limited understanding and knowledge about the factors that foster and maintain child engagement, as well as parent participation in preventive interventions (Karver et al., 2008; Spoth & Redmond, 2000). This is concerning given the grave public health risks arising from untreated or undertreated child and adolescent behavioral difficulties. Chu and Kendall (2004) assert that while intervention engagement is related to a number of client contextual factors, it is mostly influenced by child, parent, and interventionist interpersonal traits, as well as within-session events. Although researchers have identified a number of factors known to influence both parental involvement and child engagement in intervention efforts, to date, very little attention has focused on the potential reciprocal influence parents and children have on one another's participation and engagement in preventive efforts. Given the critical role that intervention engagement plays in increasing the likelihood of positive outcomes, it is essential to evaluate if and how parent levels of attendance and child levels of intervention engagement reciprocally influence one another. Further, it is imperative that research efforts explore family environmental factors that are likely to influence both parent and child involvement throughout the course of family-based prevention programs (Chu & Kendall, 2009; Spoth & Redmond, 2000). The current study, thus, sought to longitudinally evaluate how parent intervention involvement

influences child engagement and vice versa within the context of a family-based preventive intervention for children at risk for developing significant behavioral difficulties.

Child Engagement Research

Although the number of studies evaluating the influence of interpersonal and within-session events for children and families is limited (Karver et al., 2008), findings suggest that intervention engagement is a process that continues to develop and influences the relationship between the interventionist and program participant over the course of an intervention (McGinty, Diamond, Brown, & McCammon, 2003). Research demonstrates that shifts in the level of involvement in interventions can occur and that early levels of intervention engagement predict later levels of intervention engagement for anxious youth (Chu et al., 2004; Chu & Kendall, 2009). Hill (2005) asserts that intervention engagement ebbs and flows throughout the course of treatment. There likely are shifts in participant engagement in preventive interventions as well.

Further, assessing intervention engagement over multiple time points may prove beneficial in an effort to further understand and identify patterns of change over the course of preventive interventions, as well as lend insight into how interpersonal relationships influence intervention engagement for youth at-risk for experiencing significant behavioral difficulties. To date, neither has been a focus in child prevention research efforts.

Intervention Engagement Defined

Client attendance, involvement, buy-in, full participation, active participation, and commitment to intervention efforts are all terms that have been used interchangeably to describe intervention engagement. One of the unfortunate realities of this line of research, however, is that the construct of intervention engagement suffers from a lack of a clear definition, consistent operationalization, and theoretical conceptualization across studies (Staudt, 2007). That is, while a number of studies have been published evaluating aspects of intervention engagement, very few of these studies have utilized a comprehensive or theoretically driven operationalization of the construct. Instead, many have measured intervention engagement in terms of the number of sessions attended, which does not appear to provide an adequate assessment of motivational factors that may also contribute to intervention engagement. In an attempt to address these conceptual and measurement issues, Staudt (2007) outlined a conceptual model of intervention engagement that suggests that the construct is comprised of at least two components; a behavioral component and a motivational component. Staudt's conceptualization of engagement, however, has received limited empirical validation in prevention intervention research.

Issues Influencing Child and Family-Based Intervention Efforts

A number of family, parent, and child contextual factors have been found to influence both child intervention engagement and early treatment termination (Nock & Kazdin, 2001). For example, family contextual factors such as, cultural beliefs related to privacy, ethnicity, negative attitudes about treatment and prevention efforts, high levels of familial hostility, poor living conditions, and low levels of social support available to family members are all likely to negatively influence child buy-in and participation levels in intervention efforts (Burnett-Zeigler & Lyons, 2010). Considerable evidence supports a link between pretreatment aspects of the family environment such as parental monitoring, discipline practices, and family cohesion with child intervention attendance and outcomes (Stormshak, Bierman, McMahon, & Lengua, 2000). Because children rely heavily on their parents to meet their basic, physical, and emotional needs, their attitudes toward intervention efforts are frequently a direct reflection of the attitudes, interactional patterns, and relationships they share with their parents (Giger & Davidhizar, 2007).

Child attitudes toward intervention efforts are particularly vulnerable to the negative effects of a chaotic family environment (Armbruster & Fallon, 1994; Atkins et al., 2006). As such, the family environment is likely to play a key role in promoting both parent participation and child engagement in preventive interventions through providing a vehicle for the communication of familial beliefs, the monitoring/discussion of treatment progress, and daily interactions that shape the parent-child relationship (N. E. Hill et al., 2004). Family management skills together with parental involvement are necessary to bolster intervention success (Spoth & Redmond, 2000); consequently, it is imperative that researchers begin to comprehensively evaluate the role of these factors in accounting for the variability in both parents' intervention involvement and child engagement in prevention programs.

Factors Influencing Parent Attendance

Parents often play a critical role in child focused interventions, particularly when preventive programs target aggressive and antisocial child behavior (Kazdin, Marciano, & Whitley, 2005). Parental perceptions of the severity of their child's problem behaviors, their child's susceptibility to adolescent problem behaviors, as well as familial openness or resistance to engagement efforts also influence parent decisions to regularly attend intervention programs (Kazdin & Whitley, 2003; Nock & Kazdin, 2001; Spoth & Redmond, 2000). Similarly, parent perceptions about what child treatment should entail as well as potential barriers of treatment (e.g., lack of transportation, treatment associated costs, and rapport with clinicians) influence their level of participation in intervention efforts (e.g., Spoth & Redmond, 2000).

The Current Study

Given the scarcity of research comprehensively examining intervention engagement among youth, further research is necessary to explicate the factors that contribute to and maintain participant attendance, involvement, buy-in, and commitment to preventive interventions (i.e. intervention engagement). This study, thus, examines important gaps in the child and family-based prevention literature. One of the primary research questions of the current study centers on the longitudinal relation between family environmental characteristics and intervention engagement for both parents and children. We hypothesized that the family environment (i.e., functional parent discipline practices, familial cohesion/closeness, positive parenting, and higher levels of parental monitoring) would exert a positive influence on parent attendance and child levels of intervention engagement as measured by within-session and out of session behaviors (i.e., session attendance, session participation points, group rule points, and personal goal points) (Hypothesis 1).

A second area of research interest for the current study was to evaluate Hill's (2005) assertion that intervention engagement ebbs and flows across the course of treatment. We were, thus, interested in evaluating the stability of parent attendance and child engagement over the course of the intervention. We expected to observe shifts in the strength of the associations found between the child engagement variable across multiple time points (Hypothesis 2). Similarly, we expected that shifts would occur in the strength of associations exhibited between the parent attendance variable across time points (Hypothesis 3). Our final research question assessed the possible influence of parental intervention attendance on child engagement over time and vice versa. Because parents hold primary responsibility for framing familial views about intervention efforts, we hypothesized that parent levels of intervention attendance would positively influence child levels of intervention engagement over time (Hypothesis 4).

Method

Participants

A total of 114 aggressive fifth grade boys (68%) and girls (32%) attending one of seven elementary schools were identified as at-risk for delinquent behavior and participated in the Coping Power intervention. Participants were recruited, treated, and assessed as part of a larger randomized clinical trial (Lochman, Boxmeyer, Powell, Roth, & Windle, 2006). Fourth grade teachers completed ratings of aggressive behavior for youth in their classrooms. Youth selected for participation in the Coping Power intervention comprised the top 30% of fourth grade students on teacher ratings of aggressive behavior. Within the larger trial, eighty-five percent of the families initially contacted agreed to participate. Of the 121 families who initially agreed to participation in the Coping Power program, six families voluntarily withdrew prior to the program beginning. The research team excluded another child because of a pervasive developmental disorder.

Since the present study focuses on session attendance and intervention engagement, the sample consisted of the 114 participants who actually received the intervention. The mean age of participants was 10.67 years ($SD=0.57$), with the majority of youth being male (68%).

Seventy-two percent of the children self-identified as African American, 27% as Caucasian, and 1% as other race/ethnicity. The largest group of children (47%) lived with a single mother; 24% lived with both biological parents, 14% with their mother and another adult male, 11% with other relatives, and 4% in an out-of-home placement. Forty-seven percent of the families reported an annual income of less than \$15,000, 23% between \$15,000 and \$29,000, 21% between \$30,000 and \$49,000, and 9% greater than \$50,000.

Coping Power Intervention

The Coping Power Program is a manualized cognitive behavioral preventive intervention for youth at-risk for behavior problems (Lochman, Wells, & Lenhart, 2008). The current study consisted of an abbreviated version of the program that included 24 child group sessions and 10 parent group sessions. The children assigned to the intervention condition received nearly the full dose of the Coping Power child component, with the average attendance rate being 87%. Parent attendance was much less consistent, with 29% of parents not attending any of the ten sessions offered. The mean number of Coping Power parent sessions attended was 3.75 ($SD=3.58$; Range 0 to 10). The child groups met on a weekly basis. Parent groups began within the first two weeks of the child intervention sessions, and continued every 2 weeks after that. The child and parent groups ended at approximately the same time.

Coping Power child component—The child groups consisted of five to six children and focused on teaching behavioral and personal goal setting, awareness of feelings and associated physiological arousal, use of coping self-statements, distraction techniques and relaxation methods when provoked and made angry, organizational and study skills, perspective taking and attribution retraining, social problem-solving skills, and dealing with peer pressure and neighborhood based problems by using refusal skills (Lochman et al., 2008). Delivery of the child component occurred at school during the regular school day, avoiding core academic periods. If a child missed a group session, the interventionist provided the child with an opportunity to attend an individual makeup session prior to the next group session. Children who moved to another school within the same city during the academic year received the intervention individually at their new school.

Coping Power parent component—The parent groups included parents and primary caregivers of the target children and focused on teaching behavior management skills and improving family problem solving, communication, and cohesion. Parent groups met either during the school day or after school, depending on scheduling preferences. Parent groups occurred either at the child’s school or at another convenient community location. Parents received a small stipend at the end of each parent meeting to help offset transportation costs. Interventionists also made an effort to facilitate ride sharing among parent group members at the start of each session. Additional efforts to encourage parent session attendance included providing onsite childcare during parent group meetings, providing dinner or snacks for parents, and program staff sending home reminder letters and making reminder telephone calls prior to each parent meeting.

Intervention integrity—Two members of the research team, typically one doctoral-level and one master’s level staff member, co-led each child and parent group. In all, 21 interventionists (5 male, 16 female) provided services over the course of the project. Eighty-six percent of the interventionists were Caucasian and the remainder were African-American. All interventionists attended a 10-hour training program prior to the start of and during the intervention and received weekly scheduled supervision. Each group leader received an intervention manual that indicated each session’s goals as well as the specific activities that were required for the sessions. Although some degree of individualization of the intervention was permitted for specific children or parents, allowing the interveners to spend more time on certain sections of the intervention to address children’s or parent’s particular deficits, all sections of the intervention were administered. Intervention staff rated the level of accomplishment of each objective at the end of each intervention session. Intervention staff reviewed these checklists during weekly supervision sessions. In addition, intervention sessions were occasionally audio- or videotaped. The supervisors reviewed taped sessions on a random basis, and supervisors directly observed the delivery of several sessions.

Measures

Participants completed assessment measures at baseline (family environment variables) and during the course of the intervention trial (parent attendance and child intervention engagement variables).

Parent attendance/child engagement—We assessed parent attendance and child engagement by dividing the variables across three distinct intervention periods representing the early phase, the middle phase, and the late phase of treatment. The structure of the Coping Power Program as well as research observing longitudinal shifts in treatment involvement among anxious youth (Chu & Kendall, 2001) influenced the decision to divide the parent attendance and child engagement variables across three distinct intervention phases. It is our contention that while it is important to determine if similar shifts take place among youth and parents within the Coping Power program, it is also crucial to evaluate at what points are such shifts likely to occur.

Within the context of the Coping Power Program, the first several sessions of both the parent and child portion of the intervention socialize participants to the format, expectations, and content of the program, as well as provide a psychoeducational foundation for subsequent intervention sessions.

Interventionists actively work to increase the level of buy-in and acceptance of the program. Problems with participation and attendance become evident during the early period of intervention (Nock & Kazdin, 2005; Staudt, 2007). The sessions conceptualized as the

middle phase of the Coping Power Program (sessions 4–6 for parents and sessions 9–16 for child participants) are considered the active component of the intervention. It is during these sessions when interventionists spend considerable amounts of time teaching and practicing with participants the parenting, child coping/behavioral, and family reinforcing skills needed to increase child prosocial behaviors. The late phase of both components of the intervention involves the review of the skills taught during the active phase of the program as well as provides opportunities to consider and practice relapse prevention skills.

Parent attendance was assessed by the sum of number of intervention sessions parents attended across the three distinct time periods representing the early phase of the program (i.e., sessions 1–3), the middle phase (i.e., sessions 4–6), and the late phase of the intervention program (i.e., sessions 7–10).

Child engagement was also assessed across the three distinct periods representing the early (i.e., sessions 1–8), middle (i.e., sessions 9–16), and late (i.e., sessions 17–24) phases of the intervention. Our desire was to create and utilize the most robust measure of intervention engagement possible. Due to the relatively small sample size and power limitations, we created composite intervention engagement variables for each program phase by converting the indicator values into *z* scores and then averaging them. We provide a discussion regarding the indicators comprising the intervention engagement construct below.

Composite child engagement variables were developed to represent each phase of the intervention as well as provide a preliminary means to capture Staudt's (2007) conceptualization of intervention engagement (i.e., involving behavioral and motivational indices of the construct). Staudt explained that the behavioral component of engagement refers to the participant's completion of tasks necessary for intervention implementation as well as positive outcomes. According to Staudt, session attendance, homework completion, in-session participation, and complying with clinician requests are all examples of the behavioral component of intervention engagement. The motivational component of intervention engagement, conversely, refers to the participant's level of buy-in and commitment to treatment.

Consequently, for the current study, the number of sessions attended, the number of in-session positive participation points earned, and the number of in-session rule points earned represented the behavioral component of intervention engagement. The number of points youth earned for meeting personal behavior goals outside of session represented both the behavioral and motivational components of intervention engagement as this indicator was a task necessary for intervention implementation and relied on a child's buy-in/commitment to achieving personal goals outside of the session context.

Family environment—Parents and children independently completed several well-validated measures representing the family environment during their baseline assessment. We constructed the family environment variable utilizing three subscales from the Family Relations Scale (i.e., beliefs about the family, the emotional cohesion, and the support subscales), the total score of the OSLC Family Activities Questionnaire, and two subscales of the Parenting Practices Questionnaire (i.e., positive parenting and parental involvement). We created a composite variable as an index of the family environment by converting the scale scores for the measures of interest into *z* scores and then averaging them. Our desire to create and utilize the most robust measure of family environment possible while working within the constraints of relatively small sample significantly influenced the decision to create a composite variable for the family environment construct.

The Family Relations Scale (FRS; Tolan, Gorman-Smith, Huesmann, & Zelli, 1997) was used to obtain reports of parental perceptions of family closeness, beliefs about the family, and level of familial support. The FRS is a 47-item measure comprised of six subscales: beliefs about the family, emotional cohesion, support, communication, shared deviant beliefs, and organization. Items were rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) with low scores reflecting negative perceptions of familial functioning, and high scores reflecting positive functioning. The beliefs about the family subscale measures familial child development expectations, the parent's perception of the purpose of the family, and the parent's perception of the importance of the family. The emotional cohesion subscale is an index of the emotional closeness as well as the level of dependability evident among family members. The support subscale is an index of the parent's perceptions of the family's level of support provided to members (Tolan et al., 1997). A number of studies have demonstrated the reliability and validity of the use of the FRS (e.g., Tolan et al., 1997). The internal consistency coefficients for the beliefs about the family, the emotional cohesion, and the support subscales were .88, .82, and .72 respectively in the current sample. The current study only utilized these subscales.

Parent and youth participation in family activities was assessed by the OSLC Family Activities Questionnaire (OSLC; Capaldi & Patterson, 1991). The family activities questionnaire is a count index, summing the frequency within the last week (0 = no days per week, 7 = seven days per week) with which children reported engaging in 28 activities with their caregivers. The internal consistency coefficient for this scale in the current sample was 0.82.

Child perceptions of parental involvement in their lives as well as their use of positive parenting practices were assessed with the Parenting Practices Questionnaire (PQ; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996). The PQ is a 17-item measure that assesses four parenting practices: (a) positive parenting, (b) discipline effectiveness, (c) avoidance of discipline, and (d) extent of parental involvement in the child's life. Items are rated on a 5-point Likert scale ranging from 0 (never/don't know) to 4 (always) with low scores reflecting low perceptions of parental involvement or use of positive parenting techniques. The positive parenting subscale assesses the child's perceptions of the parents' encouragement of prosocial behavior and use of positive rewards. The parental involvement subscale measures the child's perceptions of parental involvement in their daily routines, daily activities, and parental knowledge of the child's social engagements. The reliability and validity of the PQ has been established in previous research (e.g., Gorman-Smith et al., 1996). The internal consistency coefficients for the scales in the current sample ranged from 0.77(positive parenting) to 0.80 (parental involvement).

Procedure

Following parental consent and child assent, children and their primary caregivers underwent separate interviews in their homes, at school, or at researchers' offices depending on the participants' preferences. For each baseline assessment session, the interviewer read aloud the questions to participants who followed along with their own copies of the measures. Once the intervention began, intervention therapists awarded youth engagement points throughout the course of each treatment session. Intervention therapists recorded attendance and the number and type of engagement points earned immediately following each session.

Results

Data Analyses

To disentangle the stability of, and cross-influences between child engagement and parent attendance, we used an autoregressive cross-lag model. For example, in this cross-lagged model, we account for continuation within child engagement by regressing scores at time 2 on their immediate prior values (autoregressive part). To account for possible influences of Time 2 child engagement on parent attendance across time, cross-lagged paths between, for example, Time 2 parent attendance on T3 child engagement were included in the model. There were two steps to the analysis. In the first step, we examined an unconditional cross-lag model. In the second step, we controlled for the potential effects of family environment.

To test whether the estimated path coefficients adequately represented the associations between the studied variables, the Comparative Fit Index (CFI; critical value $> .90$; Bentler & Bonett, 1980; Marsh, Hau, & Wen, 2004) and the Root Mean Square Error of Approximation (RMSEA; critical value $.08$; (Browne & Cudeck, 1993) were used. The model was fitted in Mplus 6.0 (Muthén & Muthén, 1998–2007). We statistically handled missing data by full information maximum likelihood. To account for potential correlated scores by way of the different intervention groups, we controlled for group identification thereby adjusting the standard errors for potential non-independence.

Descriptive Results

Correlation analyses estimated first-order relations among the individual family environment and child engagement variables. Measures of family environment evidenced moderate, yet significant correlations with one another. Youth perceptions of parental involvement (PQ) evidenced significant relations with child perceptions of parents' use of positive parenting techniques (PQ) ($r = .73, p < .001$), the number of activities shared as a family (OSLC) ($r = .35, p < .001$); parent reports of familial cohesion (FRS) ($r = .24, p < .01$); and parent reports of the level of support provided by the family (FRS) ($r = .18, p < .05$). Child ratings of family time spent together (OSLC) were significantly related to parent reports of familial shared beliefs (FRS) ($r = .21, p < .05$) and familial cohesion (FRS) ($r = .38, p < .001$). Additionally, there were significant relations found between parental perceptions about shared family beliefs (FRS) and familial cohesion (FRS) ($r = .47, p < .001$); shared family beliefs (FRS) and the amount of support provided by family members (FRS) ($r = .31, p < .001$); familial cohesion (FRS) and the amount of support provided by family members (FRS) ($r = .46, p < .001$); as well as familial cohesion (FRS) and shared family beliefs (FRS) ($r = .47, p < .001$). In all, the moderate relations shared between the family environment variables suggested that creating a composite family environment variable would provide a robust measure of the family environment which would lead to the ultimate parsimony of the theoretical model tested in the forthcoming analyses.

As expected, the child engagement variables evidenced significant, yet moderate correlations with one another again suggesting that developing composite child engagement variables for each phase of treatment would provide robust measures of child intervention engagement consistent with Staudt's (2007) conceptualization of intervention engagement. We subsequently conducted correlation analyses to estimate first-order relations among the composite family environment, composite child engagement, and parent attendance variables across intervention phases (see Table 1). The composite measure of family environment shared a significant relation with early and middle intervention phase parent attendance. The composite measure of family environment and child engagement did not share any significant relations at any intervention phase time points, however. As expected, we found significant positive relations between all of the parent intervention attendance time

points. Parent attendance during the middle phase of the intervention was significantly associated with middle intervention phase child engagement. Middle phase child engagement shared positive and significant relations with both early and late phase child engagement. Interestingly, early and late phase child engagement were minimally related.

Step 1: Unconditional Autoregressive Cross-lag

The unconditional model presented adequate fit to the data ($\chi^2[4] = 2.21, p = 0.70$; CFI = 1.00; TLI = 1.00; RMSEA = 0.00, 90% CI = 0.00, 0.11). Figure 1 (Panel A) contains the standardized parameter estimates of the model. Child engagement at T1 significantly predicted child engagement at T2 and child engagement at T2 predicted child engagement at T3. Parent attendance also showed strong temporal stability from T1 to T3. Also, child engagement at T1 and T2 was significantly associated with parent attendance at T1 and T2. Child engagement at T3 was not associated with parent attendance at T3, however. We highlight three additional results. First, the parental engagement stability coefficients appeared to increase from moderate (0.56) to high (0.82). Second, the child engagement stability coefficients were moderate in magnitude but appeared to decrease (0.58 to 0.45). Third, child engagement at T1 predicted parent attendance at T2 with a low effect size (0.28, $p = .005$).

Due to the change in stability coefficients for parents (increasing) and children (decreasing), we tested whether or not the coefficients were significantly different by way of nested chi-square difference tests. That is, we restrained the two stability coefficients (T2 on T1 *and* T3 on T2) to be equivalent, and compared the chi-square from this ‘restrained’ model to the chi-square from the unconditional model. For the parents, the two models significantly differed ($\chi^2\Delta [1] = 5.16, p = 0.02$), indicating that the stability of attendance increased over time. For the children, the two models did not significantly differ ($\chi^2\Delta [1] = 0.09, p = 0.76$). Therefore, although the path coefficients decreased, they did not appear to significantly differ in magnitude.

Step 2: The Conditional Autoregressive Cross-lag

The model where we controlled for family environment adequately fit the data ($\chi^2[4] = 0.83, p = 0.93$; CFI = 1.00; TLI = 1.14; RMSEA = 0.00, 95% CI = 0.00, 0.04). All of the significant paths from the unconditional model remained significant (Figure 1, Panel B), with one exception. The statistically significant relationship between child engagement T2 and parent attendance T2 decreased in significance to a trend level association (0.08, $p = 0.06$). With the influence of the family environment entered into the model, child engagement at T1 continued to influence parent attendance at T2 with a moderately low effect size (0.31, $p = 0.04$). Additionally, family environment positively influenced T1 parent attendance (0.31). We tested the degree to which this positive relation may indirectly drive subsequent parent attendance levels and found no significant effects.

Discussion

These results demonstrate that intervention engagement is a dynamic rather than static process. Within-session and external contextual factors influence intervention engagement. Furthermore, engagement fluctuates across the course of intervention as well as stakeholder groups. Chu and Kendall (2004) noted a positive link between relationship factors, client task participation, and treatment maintenance. The current results indicate that interpersonal factors influenced the relations found between child intervention engagement and parent attendance in the Coping Power Program throughout the course of treatment. That is, child level of engagement during the early phases of the Coping Power Program positively influenced parent attendance midway through the intervention program. The findings are

among the first to suggest that children's level of intervention engagement has the potential to influence parents' levels of intervention attendance within the context of family-based preventive interventions targeted at high-risk youth. Child engagement influenced parent attendance even after the models accounted for the family environment. Previous studies have highlighted that child temperament as well as problematic behavior have the potential to negatively influence parenting behavior (e.g., Clark, Kochanska, & Ready, 2000; Kerr & Stattin, 2003). It very well may be that children set the social norm within the context of families struggling with a child exhibiting a risk for severe behavioral difficulties.

Research suggests that social relationships, whether between the therapist and client or between the client and others within their social context, exert an influence on intervention processes (Kazdin & Whitley, 2003, 2006a). While previous research highlights the potentially negative influence that family contextual variables may have on child and parent intervention engagement (e.g., Spoth & Redmond, 2000), the current findings suggest that the influence of family contextual factors may not change the nature of parent attendance when parents are influenced to attend treatment by their children who are showing that they are committed, involved, and benefitting from treatment efforts. As an alternative explanation, Halvorsen and Heyerdahl (2007) suggest that parental trust in intervention efforts and child motivation to participate in intervention efforts form the cornerstone of intervention engagement for youth evidencing significant problematic behaviors and not family contextual factors.

There are several potential explanations for the findings observed. First, witnessing their children's motivation to participate and buy-in to intervention goals may have piqued parents' interest in intervention efforts. Parental expectancies about the effectiveness of intervention efforts tend to impact their willingness to attend child intervention sessions (Kazdin & Whitley, 2003; Nock & Kazdin, 2001; Spoth & Redmond, 2000). Parents' perceptions of intervention effectiveness may have increased as a function of witnessing their child's dedication to completing intervention homework assignments outside of group sessions. A second possible explanation for the study findings is that children may directly prompt and reinforce parent intervention attendance. Within the context of the current intervention, intervention staff observed and encouraged children to remind their parents about group meetings. These reminders may have significantly increased the likelihood of parents attending intervention sessions. A third possible explanation for study findings is that as children's behavior improved, parent willingness to attend intervention sessions may have increased.

Another major finding of the current study is that the family environment appeared to exert an influence on parent attendance during the initial phase of the intervention, but did not exert such an influence at the later stages of the program. Findings suggest that parents living in higher functioning and positive family environments at the time of the baseline assessment were more likely to attend intervention sessions during the initial phase of treatment, but were no more likely to attend intervention sessions during the middle and final phases of the program than parents living in more negative family environments regardless of child levels of intervention engagement during the early phases of treatment. It is likely that parents hailing from more organized and supportive family environments experienced fewer initial contextual barriers that had the potential to negatively influence their ability and willingness to attend intervention sessions during the beginning phase of the program. Research has found that real and perceived barriers influence parent levels of participation in intervention efforts (Bögels & Phares, 2008; Logan & King, 2001; Spoth & Redmond, 2000). It could also be that more positive family environments provided the means by which parents could see the value in attending intervention sessions designed to increase their ability to manage problematic child behavior.

The lack of an association between family environment and parent attendance during the middle and final phases of the Coping Power program may suggest that once parents observe the benefits of learning and implementing effective child behavioral management practices, the nature of the family environment is not a deterrent from attending treatment sessions. Nock and Photos (2006) hypothesized that as parent levels of motivation increase, their perceptions of barriers to treatment participation are likely to decrease and thus positively influence their session attendance. The intervention may have had a direct effect on the parent and family variables that made up the family environment construct by the middle and late phases of the intervention, contributing to the lack of a significant association between family environment and parent attendance during these intervention phases. It could be that as parents learned skills that positively influenced the family environment, the influence of the baseline family environmental context became less relevant for attendance at later stages of the intervention.

Within the current study, results indicate that for parents, attendance at earlier periods in treatment predicted attendance estimates at later phases of the intervention. Similarly, intervention engagement at earlier periods in treatment predicted intervention engagement estimates at later phases of the intervention for children. Further, the results suggest that as time progresses, the stability of parent intervention attendance estimates tends to increase, whereas the stability of child engagement estimates remain relatively unchanged over the course of the program. Procedural factors may have affected the stability of child and parent engagement.

Parent meetings occurred once every two weeks whereas child groups met on a weekly basis during the school day. The child groups existed within the constraints of the academic settings and quickly became a part of each child's weekly routine. Consequently, it is very likely that the routine nature and relative predictability of regular group participants facilitated the stability of child engagement estimates across all phases of the intervention. Of the parents who attended intervention sessions, the average number of sessions attended was four. It may be that the biweekly nature of parent sessions coupled with inconsistent parent attendance at group sessions slowed the ability of parents to develop a consistent and core group of session attendees. Such inconsistency may have negatively influenced parent attendance stability estimates during the early phase of treatment. However, as a core set of parents began to attend group sessions, fluctuations in parent attendance may have been less likely to influence stability estimates.

Another interesting aspect of the current study's findings is that parents and children began treatment evidencing moderate levels of intervention engagement. While previous research suggested that engaging youth with behavioral difficulties frequently presents a significant challenge to interventionists (e.g., Chu et al., 2004; Kazdin & Whitley, 2003), youth and parents involved in the current intervention trial appeared well-prepared and willing to either attend or engage in treatment from its outset. The researchers initiated a number of efforts to encourage parent session attendance including providing childcare during parent group meetings, providing dinner or snacks for parents, and program staff sending home reminder letters and making reminder telephone calls prior to each parent meeting. Children received rewards for attending sessions and intervention staff strongly encouraged the youth to remind parents of their upcoming sessions. Future research should look to determine if shifts in engagement and attendance levels occur after the novelty of an intervention has dissipated in larger samples.

Research has demonstrated that child externalizing behavioral difficulties influence whether or not children engage and remain in intervention programs (Kazdin & Whitley, 2003, 2006b; Pinto et al., 2007; Prado, Pantin, Schwartz, Lupei, & Szapocznik, 2006). Further,

intervention engagement among youth exhibiting behavioral difficulties has traditionally been noted to be quite low, in part due to the nature of their problematic interaction patterns (e.g., Prado et al., 2006; Szapocznik et al., 1988). The current study utilized an operationalization of child intervention engagement first proposed by Staudt (2007) which suggests that the construct of treatment engagement is comprised of a behavioral component and a motivational component. While Staudt's conceptual model has yet to be formally tested, the present study found that such an operationalization could yield a relatively stable measure of intervention engagement that showed significant relations with a more antiquated operationalization of intervention engagement (i.e., parent attendance) for youth at-risk of evidencing significant behavioral problems.

Staudt (2007) explained that the behavioral component of engagement refers to the participant's completion of tasks necessary for intervention implementation as well as positive outcomes. According to Staudt, session attendance, homework completion, in-session participation, and complying with clinician requests are all examples of the behavioral component of intervention engagement. The motivational component of intervention engagement, conversely, refers to the participant's level of buy-in and commitment to treatment. Staudt's conceptualization of intervention engagement appears quite useful in that it directly assesses the issues that are likely to negatively influence intervention involvement. Given that the Coping Power child component sessions focused on teaching coping and problem solving skills, as well as strategies for enhancing social relationships and resisting peer pressure, it is unlikely that the present study's operationalization of intervention engagement was confounded with intervention targets. Future research endeavors should use more comprehensive measures of intervention engagement, including motivational as well as behavioral components.

Limitations

Our findings about parent and child treatment engagement are limited to this Coping Power program and to similar targeted preventive programs for aggressive, at-risk children. The influence of family contextual factors on intervention engagement could be different with other types of programs. Evaluating child intervention engagement versus parent attendance is an additional limitation. Future research utilizing a robust measure of parent engagement will enhance the field's understanding of the demonstrated relations. For example, future studies could build upon our findings by examining parents' perceived relevance of treatment or parents' assessment of their self-efficacy related to session attendance. In addition, this study did not examine other within-session process factors (e.g., therapist alliance, treatment acceptability) that have been proposed to effect intervention engagement (Kazdin & Whitley, 2003). Further, sample size and power limitations prevented the development of more robust family environment and child engagement latent variables. Sample size limitations also precluded an examination of potential moderator variables (e.g., gender, ethnicity, levels of behavioral problems) that may have influenced the effects demonstrated. Lastly, missing data may have affected the relations demonstrated among study variables. Given that parent intervention attendance rates ranged between 30% and 50% and 90% of children regularly attended intervention sessions, it is likely that the study results represent a relatively motivated group of parents and children.

Implications

A number of important implications follow from this study. First, when implementing a program like Coping Power, it is important to frequently assess intervention engagement among participants over the entire course of treatment. The findings suggest that fostering child engagement at the outset of treatment is likely to increase parent attendance in intervention efforts. That is, promoting child involvement and buy-in early in the treatment

process has significant implications for parent attendance and potential intervention engagement. Receiving incentives in the form of participation, goal, and rule points appeared to provide a compelling incentive for youth participating in the Coping Power Program. Clinicians and intervention developers may consequently want to continue to consider the methods by which children are most likely to become engaged in preventive interventions.

A third implication of the current research suggests that because parent interest in intervention efforts may increase as child levels of engagement increase, clinicians may need to provide parents with frequent and clear information related to how their child is becoming engaged in the intervention. Interventionists may provide this information through notes, telephone calls, or by developing specialized parent engagement interventions. Likewise, children were strongly encouraged and provided with the means to remind their parents about upcoming intervention sessions. These reminders and receiving frequent encouragement from children about upcoming parent sessions likely influenced parent attendance.

A fourth implication of study findings is that intervention developers and clinicians may need to pay particular attention to the inherent parenting resources, practices, and quality of family relationship prior to the start of an intervention, as these factors can have both positive and negative effects on the willingness of parents to initially attend intervention sessions. However, once parents experience the benefits of an intervention, the effect of the family environment on parent attendance may become less of an issue.

Lastly, the current study highlights the importance of considering a broader conceptualization of engagement, beyond client attendance. These findings indicate Staudt's conceptualization of intervention engagement provides a useful starting point as we seek to clarify the nuanced factors that may influence engagement.

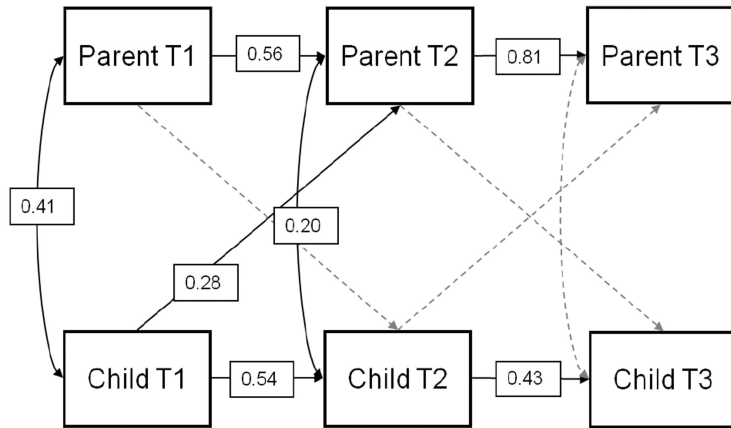
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Panel A



Panel B

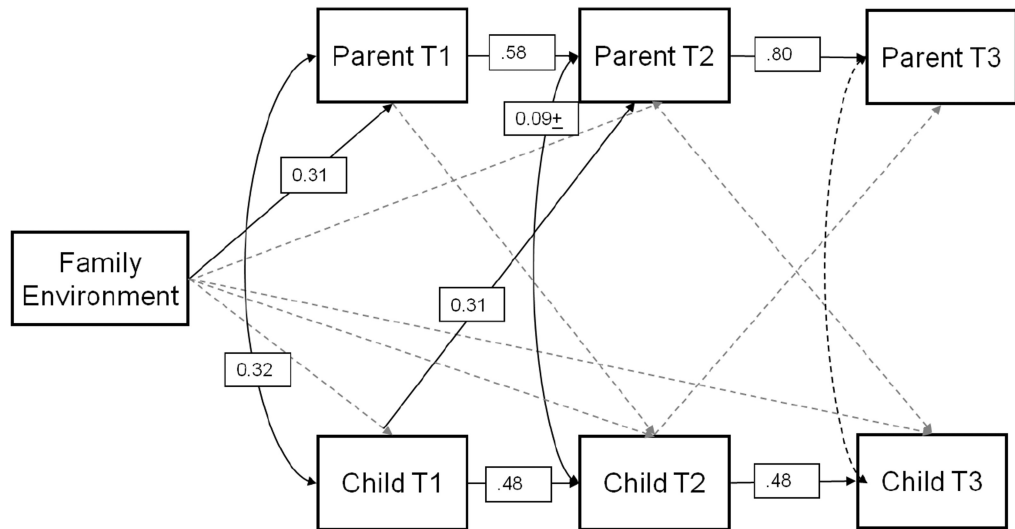


Figure 1.

Table 1

Zero-Order Correlations for All Variables

Variable	1	2	3	4	5	6	7
1. Family Environment	-						
2. Parent Attendance T1	.20*	-					
3. Parent Attendance T2	.19*	.64**	-				
4. Parent Attendance T3	.17	.55**	.79**	-			
5. Child Engagement T1	.04	.17	.14	.06	-		
6. Child Engagement T2	.09	.08	.21*	.09	.27*	-	
7. Child Engagement T3	.08	.04	.11	.07	.17	.38**	-
<i>M</i>	.000	-.013	-.017	-.026	-.050	.000	-.014
<i>SD</i>	.67	1.00	1.00	.98	.94	.70	.85

Note.

* p .05,

** p .01.