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Relationship Quality and the Mentoring of Aggressive, High-Risk Children

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Abstract

We used data from a randomized clinical trial to examine the degree to which relationship quality predicted outcomes for aggressive children in two different mentoring programs. Data were available for 145 aggressive children in grades 2 and 3. Children were blocked by school and randomly assigned to PrimeTime ($n = 75$) or Lunch Buddy ($n = 70$) programs. PrimeTime combined community-based mentoring with child-focused skills training and consultation for parents and teachers, and mentors were extensively trained and supervised. Lunch Buddy was a stand-alone, school-based mentoring program that involved lunchtime visits and a different mentor each semester. PrimeTime children rated their mentors as more supportive than did Lunch Buddy children. Relationship conflict predicted changes in teacher-rated externalizing problems. Ratings of relationship quality interacted with treatment in predicting changes in parent-rated externalizing behavior for PrimeTime children only.

Keywords

aggression; child; mentor; externalizing; relationship

Youth mentoring, the pairing of a volunteer mentor with a child or adolescent at risk, is often touted as an effective prevention tool (Armstrong, 2000; Dortch, 2000). Some have portrayed mentoring as a proven method for reducing youth violence and preventing juvenile delinquency (e.g., McGill, Mihalic, & Grotmeter, 1997). Unfortunately, the practice and promotion of youth mentoring has outpaced its empirical support (DuBois & Karcher, 2005). The need for research evidence is particularly acute for programs that target aggressive children and antisocial youth (Blechman & Bopp, 2005; Cavell & Smith, 2005; McClanahan, 2007). Relationship factors are thought to be critical to the success of youth mentoring (e.g., DuBois, Neville, Parra, & Pugh-Lilly, 2002; Parra, DuBois, Neville, Pugh-Lilly, & Povinelli, 2002; Rhodes, 2002, 2005; Spencer, 2006), but few studies have examined the role of relationship quality in programs for highly aggressive, school age children.

The development of effective interventions for aggression in children is critical. The developmental trajectory of aggressive children is fairly stable, multiply determined, and predictive of serious maladaptive outcomes (Broidy, Nagin, & Tremblay, 2003; Loeber, 1990; Patterson, Reid, & Dishion, 1992). Aggressive school age children are early starters on a developmental path toward later delinquency (Patterson et al., 1992). Commonly recommended interventions are behavior management training for parents and social problem solving skills training (PSST) for children (Cavell, Hymel, Malcolm, & Seay, 2006), with some evidence for blending the two interventions (e.g., Kazdin, Seigel, & Bass, 1992).

More than 4500 organizations in the United States offer youth mentoring (Rhodes, 2002), and roughly half of all mentoring programs appeared in the last 10-15 years (Sipe & Roder, 1999). Youth mentoring is often cast as an effective but inexpensive remedy for the problems that face at-risk youth (e.g., Dortch, 2000). Proponents point to studies of Big Brothers Big Sisters of America (BBBSA) showing that mentored youth are less likely to hit someone, to use drugs or alcohol, or to skip school (Grossman & Tierney, 1998), and federal tax dollars have been used to fund mentoring programs for safe and drug free schools, for delinquent youth, and for children of incarcerated parents. The wide appeal of youth mentoring has outpaced its scientific base (Blechman, 1992; DuBois, Holloway, Valentine, & Cooper, 2002; Rhodes, 1994, 2002; Smith, 2002). DuBois, Holloway, and colleagues (2002) conducted a meta-analysis of 59 mentoring studies and found average effect sizes of .14 and .18 for fixed and random effects, respectively. Effect sizes were significantly larger ($ds = .24$ and $.25$) for programs using best practices (e.g., training and supervision, clear expectations for contact frequency and length) and for programs in which youth were selected based on environmental

risk factors (e.g., socioeconomic disadvantage). Effect sizes were near zero, however, for youth selected because of individual risk factors (e.g., behavior problems). We also note that youth mentoring leads generally to fewer gains than that achieved via academic or work place mentoring, programs that typically target late adolescents and adults, respectively (Eby, Allen, Evans, Ng, & DuBois, 2007).

Evidence supporting mentoring programs for aggressive children or antisocial youth is particularly hard to find (Blechman & Bopp, 2005; Blechman, Maurice, Buecker, & Helberg, 2000; Cavell & Smith, 2005; Davidson & Redner, 1988; Roberts, Liabo, Lucas, DuBois, & Sheldon, 2004; Smith, 2002), and quantitative reviews cast serious doubt on the efficacy of mentor-based interventions for this population (DuBois, Holloway et al., 2002; Smith, 2002). Smith (2002) reported a mean weighted effect size for outcomes involving antisocial behavior opposite of that expected ($d = -.12$, 95% CI = $-.20/-.04$, $p < .00$), suggesting that mentored youth engaged in more aggressive or delinquent behavior than non-mentored youth. The oft-cited study by Grossman and Tierney (1998; see also Tierney, Grossman, & Resch, 1995) revealed little impact on several outcomes related to antisocial behavior (e.g., shoplifting, destruction of property, fighting, tobacco use). As an intervention for antisocial youth, mentoring is occasionally viewed as complement to more established interventions (Conduct Problems Prevention Group, 2004; McClanahan, 2007). Cavell and Hughes (2000) combined community-based ("PrimeTime") mentoring (i.e., outside of school hours) with child-focused social problem solving skills training (PSST) and supportive consultation for parents and teachers. Aggressive children in grades 2 and 3 ($N = 62$) were randomly assigned to PrimeTime or to a stand-alone "Standard Mentoring" condition. Both interventions spanned 3 semesters and both relied on college student mentors to provide one-on-one mentoring outside of school hours. PrimeTime mentors were extensively trained and supervised; standard mentors were minimally trained and monitored. Unexpectedly, outcomes for the two groups did not differ, as children in both conditions evinced significant decreases in parent- and teacher-rated aggressive behavior at post-treatment and significant declines in parent- and peer-rated aggression at the one-year follow-up. Without a no-treatment control, it is impossible to know if these changes were due to treatment or to other factors (e.g., history).

In a second study, Hughes and Cavell compared PrimeTime to a different stand-alone mentoring program (Hughes, Cavell, & Meehan, 2001; Hughes, Cavell, Meehan, Zhang, & Collie, 2005). Outcome data were available for 174 second and third grade children who met teacher- and peer-rated criteria for heightened aggression. Because of unexpected gains for children in the Standard Mentoring condition (and because schools did not allow a no-treatment control), Hughes and Cavell sought a control condition that was relatively inert. Based on the prevailing assumption that a close relationship is critical to successful mentoring (e.g., Rhodes, 1994), they designed a school-based mentoring program that severely limited the opportunity for relationship formation. In their Lunch Buddy program, all visits occurred in the school cafeteria during a 30-minute lunch period and children were given a new mentor each semester. Contrary to expectations, children in both conditions showed significant improvement at post-treatment and at follow-up (1- and 2-year) on parent- and teacher-rated externalizing problems (Achenbach & Edelbrock, 1991) and on teacher ratings of behavioral and scholastic competence (Harter, 1985). There were no differential treatment effects immediately following the intervention; however, significant treatment effects emerged at the one- and the two-year follow-up for teacher-rated externalizing problems and teacher-rated behavioral and scholastic competence. Interestingly, these effects favored the less intensive Lunch Buddy program (Hughes et al., 2001). Subsequent analyses involving children who stayed in the same school throughout the intervention ($n = 86$) revealed that school context significantly moderated treatment outcome. Specifically, Lunch Buddy mentoring was particularly effective for aggressive children in schools marked by high levels of playground aggression, economic

disadvantage, and family mobility. In contrast, PrimeTime was more effective in schools with low adversity (Hughes et al., 2005).

Findings in support of Lunch Buddy mentoring require replication but also raise questions about the role of the relationship in youth mentoring. Other mechanisms likely contribute (Cavell & Smith, 2005; Rhodes, 2002, 2005; Rhodes, Spencer, Keller, Liang, & Noam, 2006), but current models place clear emphasis on the relationship itself (Keller, 2005b; Rhodes, 1994, 2002, 2005). For Parra et al. (2002), the mentoring relationship is “a final common mechanism of influence” (p. 380). Emphasis on a close, trusting bond between mentor and mentee is supported by studies that link outcomes to relationship quality (e.g., DuBois & Neville, 1997; DuBois, Neville et al., 2002; Herrera, Grossman, Kauh, Feldman, & McMaken, 2007; Parra et al., 2002; Styles & Morrow, 1992) and to match length, an indirect measure of relationship quality (Grossman & Rhodes, 2002). Grossman and Rhodes found that relationships lasting 12 months or longer were associated with positive outcomes but those ending before 6 months tended to have negative outcomes (e.g., greater alcohol use). These findings have been used to champion efforts to promote close, long-lasting mentoring relationships (e.g., Keller, 2005b; Rhodes et al., 2006).

Grossman and Rhodes also found that 40% of community-based mentoring relationships ended prematurely and that youth prone to interpersonal difficulty (e.g., victims of maltreatment, referred for psychological treatment) were especially likely to experience premature termination. Thus, it would seem that mentoring relationships involving antisocial youth might be particularly hard to sustain (Bauldry & Hartmann, 2004). Few studies have examined mentor relationship quality as a potential mechanism for reducing antisocial behavior and some reveal counter-intuitive findings (Smith, 2002). Smith found that mentoring programs offering shorter visits (< 1 hour) and briefer relationships (< 3 months) led to significantly less antisocial behavior than programs with longer visits (> 1 hour) and more lasting relationships (≥ 12 months), respectively. Cavell and Hughes (2000) tested whether the quality of mentoring relationships predicted outcomes in their sample of highly aggressive children. These investigators minimized the premature ending of relationships by relying on college student mentors who earned course credit for completing their assignment. Results indicated a) that children in the PrimeTime condition reported more positive mentoring relationships than children in the Standard Mentoring condition; b) that mentors' ratings of relationship quality predicted teacher-rated aggression at follow-up; and c) that children's ratings of relationship quality predicted parent-rated aggression at post-treatment, but for children in the PrimeTime condition only. These findings offer some support for the notion that relationship quality contributes to the success of mentoring programs for aggressive children.

This study is an attempt to replicate and extend the findings of Cavell and Hughes (2000). Data were gathered as part of the second clinical trial conducted by Hughes, Cavell, and colleagues (Hughes et al., 2001; Hughes et al., 2005). Children had been assigned to PrimeTime, which involved community-based mentoring, or to the Lunch Buddy program, which involved school-based mentoring. In line with previous findings (Cavell & Hughes, 2000), we made the following hypotheses. First, we expected children in the PrimeTime condition to rate mentoring relationships more positively than children in the Lunch Buddy program (see also Herrera, 1999; 2004). Secondly, we hypothesized that relationship quality would predict teacher-rated externalizing problems immediately following the intervention and at one- and two-year follow-ups. Our third hypothesis was that relationship quality would predict parent-rated outcomes, but only for children in PrimeTime. The benefits of community-based mentoring are thought to be mediated by improved parent-child relationships (Rhodes, Grossman, & Resch, 2000; Rhodes, Reddy, & Grossman, 2005). Also, parents of PrimeTime children had occasions to interact with mentors and regular consultation with case managers who supervised mentors, both of which gave parents considerable information about how their child was

behaving in this three-semester relationship. Parents of Lunch Buddy children, on the other hand, had limited access to information about how their child was behaving in the context of school-based mentoring.

Our study extends the work of Cavell and Hughes (2000) in four ways. First, the sample was larger and the follow-up period longer than that used by Cavell and Hughes (2000). Second, child and mentor ratings of relationship quality were gathered after each semester of mentoring, which allowed for a broader and more reliable gauge of relationship quality. Third, measures of relationship quality assessed both level of support and level of conflict. This is potentially important given evidence that negative aspects of mentoring relationships are more predictive of youth outcomes than positive aspects (Rhodes, Reddy, Roffman, & Grossman, 2005). Finally, our data allowed us to examine relationship quality in the context of two very different mentoring programs. PrimeTime involved well-trained, closely supervised community-based mentoring combined with child-focused PSST and consultation for parents and teachers. Lunch Buddy was a stand-alone mentoring program with limited opportunities to form close mentoring relationships. Both programs spanned three academic semesters, both relied on college student mentors, and both used course credit and class grades as contingencies to ensure consistent visits and to eliminate the risk of early termination. Because of these program structures, the relation between child outcomes and relationship quality was not confounded by variability in the duration of mentoring.

Method

Participants

Children's participation in the project spanned two academic years (not counting follow-up assessments), with Fall of Year 1 devoted to screening and pre-treatment assessment. The project began the following semester and lasted for three successive semesters. The project was approved by the university institutional review board and only children for whom we had active parental consent and student assent participated. Because our primary research question focused on the predictive utility of mentor relationship quality, procedures and methods from the original intervention study (Hughes et al., 2001) are briefly summarized here. More detailed information can be obtained from the corresponding author.

Analyses were based on a sample of 145 children who participated in a prevention project that targeted aggressive elementary school students. Second- and third-grade teachers from 13 public elementary schools in a suburban school district in the Southwest were asked to nominate students who matched a behavioral description of an aggressive child. Teachers nominated 356 children and parental consent to screen was obtained for 281 (79%) children, 212 (75%) of whom met the following criteria for inclusion: (a) a score at or above 70T on the Aggressive Behavior subscale of the Teacher Report Form of the Child Behavior Checklist (TRF; Achenbach & Edelbrock, 1991); (b) a score at or above 2 standard deviations above the classroom mean on peer-nominated overt or relational aggression; or (c) a score at or above 60T on the Aggressive Behavior subscale of the TRF and a score above the classroom mean on peer-nominated relational or overt aggression.

Parental consent for participation in the intervention study was obtained for 174 (82%) eligible children. Children were blocked by school and randomly assigned to one of two mentoring programs: PrimeTime (N= 89) or Lunch Buddy (N=85). Post-treatment data on teacher- or parent-rated externalizing problems and ratings of mentor relationship quality were available for 145 children (PrimeTime = 75; Lunch Buddy = 70). Children with and without post-treatment data did not differ on baseline demographic or outcome variables. Table 1 reports demographic characteristics for children in each condition. Roughly 60% of the sample was

boys and the mean age was 8.2 years ($SD = .65$). There were no significant differences between treatment groups on demographic characteristics or pre-treatment outcome variables.

Intervention Conditions

Children were randomly assigned to one of two interventions, both of which involved a mentoring program that spanned three academic semesters (spring, fall, spring). All mentors were enrolled in a Field Experience class in which course grades were tied to the consistency of mentoring visits. Mentoring relationships in both conditions were closed at the end of the intervention phase of the study. Mentors were prohibited from initiating contact with their mentee but were free to respond (via phone or mail) to communications from their mentee. Mentors were typically White, non-Hispanic (85%) women (88%) majoring in psychology or education. There were no significant differences in the demographic characteristics of mentors across the two conditions.

PrimeTime—PrimeTime condition was a multi-component intervention that combined community-based mentoring with consultation for parents and teachers and problem solving skills training (PSST) for children. PrimeTime mentors were extensively trained and supervised and their mentoring relationships lasted for roughly 16 months. Training was conducted as a semester-long, 3-credit course held prior to the start of mentoring. The course combined a) didactic lessons addressing childhood aggression and the prevention of juvenile delinquency with b) practical training in child-directed play skills designed to enhance relationships with and manage the behavior of highly aggressive, antisocial children (Cavell, 2000; Cowen, Orgel, Gesten, & Wilson, 1979; Guerney, 1983). Once mentoring began, mentors attended weekly group supervision meetings led by doctoral student case managers (1 African-American, 7 White non-Hispanic, 3 White Hispanic) supervised by a doctoral-level school or clinical child psychologist with more than 10 years of practice experience. Mentors met weekly with their mentee outside of school hours and visits continued over the course of three successive semesters. Although the choice of activity was repeatedly negotiated between mentor and mentee (with oversight from supervisors and parents), mentors were encouraged to engage in activities and interactions that could strengthen the relationship and to avoid activities that precluded such interactions. Particular attention was also given to the topic of conflict. PrimeTime mentors were cautioned against avoiding conflict, were encouraged to work through conflict, were taught specific skills for managing conflict, and were supported by their supervisor and by fellow mentors when dealing with conflict. The last few months of supervision prepared mentors for ending their relationships, including how to say goodbye to their mentee and ways to mark the end of the relationship (e.g., goodbye party, exchange of photos, presenting mentees with a scrapbook).

The same case managers who supervised mentors also consulted with parents (usually in the home) and with teachers (at school). Case managers had a goal of meeting with parents and with teachers twice per month. Because parent and teacher consultation was unsolicited, case managers adopted a stance that was more supportive than problem-driven. Specifically, consultants strived to support parents' and teachers' efforts to set clear limits on antisocial behavior, to establish adaptive structures for the home or the classroom, and to promote a positive relationship with the target child (Cavell, 2000; Hughes & DeForest, 1993).

Case managers were also responsible for leading child skills training groups. Skill training was designed to promote children's capacity for affect regulation and for conflict resolution (Hughes, 1998). All groups were school-based and training occurred during the fall and spring semesters of Year 2. Children met weekly for 30-45 minutes in small groups of 3 to 6 children. Each group also included children identified by teachers as "good citizens" in numbers equal to or greater than the number of aggressive target children.

Over the 16-month intervention period, case managers averaged 13.63 parent visits ($SD = 9.01$) for a mean total of 568 min per parent ($SD = 421$). Case managers averaged 11.64 teacher visits ($SD = 6.87$) for a mean total of 338 min per teacher ($SD = 235$). PrimeTime mentors averaged 33.49 mentor visits ($SD = 13.56$), which typically lasted 1-2 hr. Children attended an average of 22.35 problem-solving-skills training sessions ($SD = 4.40$).

Lunch Buddy—The Lunch Buddy program was a stand-alone mentoring intervention that spanned three academic semesters. Target children were paired with a different mentor each semester, and mentors visited twice weekly during scheduled lunch times. Mentors typically sat with their mentee at a cafeteria table that included several classmates. Apart from being told that they were mentoring a child experiencing behavioral difficulties, Lunch Buddy mentors received no formal training or supervision. They participated in a 90-minute orientation session that focused on a) preliminary paperwork, b) issues of safety and proper dress and behavior in an elementary school, and c) instructions for completing weekly log sheets. Lunch Buddy mentors received two handouts: A one-page handout on how and when to end the mentoring relationship and a two-page handout (excerpted from mentor training guides available at <http://www.beamentor.org>) that described mentor roles and responsibilities and general tips for listening and communicating with mentees. Lunch Buddy children received, on average, 50.64 visits ($SD = 14.26$) from mentors, with each visit lasting approximately 30 minutes or the usual length of a school lunch period.

Measures

Externalizing problems—Parents and teachers rated target children's externalizing problems via the Child Behavior Checklist (CBCL) or Teacher Report Form (TRF, Achenbach & Edelbrock, 1991), respectively. The CBCL and TRF are widely used checklists that contain 113 items rated on a 3-point scale from 0 (*not true*) to 2 (*very true or often true*). Published reliability and validity estimates support the utility of these instruments for both research and clinical purposes. Broadband raw externalizing scores were used in the present analyses.

Mentor relationship support—Both child and mentor reports were used to assess mentor relationship support after each semester. We used two different instruments to assess relationship support. The first was the Mentor Alliance Scale (MAS), an adapted version of the Therapeutic Alliance Scale (TAS; Shirk & Saiz, 1992). The TAS was originally designed to assess the strength of the therapeutic alliance between children and therapists. Sample MAS-child items include, "I tell my mentor about things that upset me" and "I like spending time with my mentor." Children rated each item using a 4-point Likert scale (1 = *not like me*; 4 = *very much like me*). A parallel version for mentors was adapted from the therapist version of the TAS. Items were rated on a 6-point Likert scale (1 = *not like my mentee*; 6 = *very much like my mentee*). Alpha coefficients ranged from .75 to .84 and from .81 to .90 for the child- and mentor-MAS scales, respectively, across the three semesters.

The second measure of relationship support was the Network of Relationships Inventory (NRI, Furman & Buhrmester, 1985). The NRI assesses children's perceptions of their relationships with various members of their social network (e.g., "How good is your relationship with this person?"). For each relationship (e.g., parents, teacher), children rate 11 types of social support (e.g., companionship, instrumental aid, intimacy) using a 5-point Likert scale (1 = *little or none*; 5 = *the most*). NRI scores have been shown to vary predictably with relationship, source, and age (Buhrmester & Furman, 1987; Furman & Buhrmester, 1985). Mentors completed a parallel version of the NRI (e.g., "Overall, I am satisfied with my relationship with this child") using a 5-point scale (1 = *Not true at all*; 5 = *Very true*). Mentor NRI-support scores were based on a composite of the following subscales: satisfaction, intimacy, nurturance, affection, admiration, and reliable alliance. Child NRI-support scores were similarly derived except that

scores from the nurturance subscale (i.e., child's effort to nurture and support others) were not included. Alpha coefficients for the child and mentor NRI-support scales ranged from .88 to .92 and from .91 to .94, respectively, across the three semesters.

Mentor relationship conflict—Child and mentor ratings of relationship conflict were assessed via the conflict subscale of the child- and mentor-NRI. The conflict subscale contains 6 items that are rated on the same 5-point scale as other NRI items. Sample items include “How much do you and this person get upset or mad at each other?” and “How much do you and this person argue with each other?” Alpha coefficients for child- and mentor-rated conflict ranged from .59 to .87 and from .83 to .87, respectively, across the three semesters.

Teacher-student relationship support and conflict—Teacher ratings of relationship support and conflict were assessed pre-treatment via subscales that directly paralleled those on the mentor-NRI. Alpha coefficients for teacher-rated support and conflict were .92 and .87, respectively.

Procedure

Outcome variables were assessed pre-treatment, post-treatment, and at one and two year follow-ups. Parent measures were completed in children's homes and teachers completed measures at school. Mothers provided ratings of children's externalizing scores unless a father (< 5%) or some other parent figure (< 5%) was the sole head of the house. Child ratings of mentor relationship support and conflict were obtained during individual interviews administered by trained undergraduate or graduate research assistants. Mentors completed measures of relationship support and conflict at end-of-semester meetings.

Results

Preliminary Analyses

Table 2 presents mean item scores for child and mentor ratings of support (NRI-support and MAS) and conflict (NRI-conflict) by treatment condition. Because mentor relationship quality was assessed at the end of each semester, and because Lunch Buddy children had three different mentors, support and conflict scores were averaged across the three semesters. Across three semesters, median correlations among child ratings of support and conflict were .37 and .57, respectively. For mentor ratings of support and conflict, median correlations for the three semesters were .46 and .33, respectively. Also listed in Table 2 are mean raw scores on parent- and teacher-rated externalizing problems obtained pre-treatment, post-treatment, and at the one- and two-year follow-up. Note that sample size varied somewhat depending on the measure and the time point for data collection.

We used analyses of variance (ANOVAs) to test for treatment differences in ratings of mentor relationship support and conflict. Significant differences were found only for child-rated support; neither child-rated conflict nor mentors' ratings of support and conflict differed significantly across the two mentoring conditions. As predicted, children in the PrimeTime condition rated the mentoring relationship as more supportive than did children in the Lunch Buddy condition on both the NRI, $F(1,131) = 8.37, p < .01$, and the MAS, $F(1,141) = 6.48, p < .05$.

Intercorrelations among ratings of support and conflict are shown in Table 3. To reduce the number of analyses, and because support scores on the NRI and the MAS were highly correlated for both children ($r = .65, p < .0001$) and mentors ($r = .74, p < .0001$), we formed composite child- and mentor-rated support variables by averaging standardized NRI and MAS scores. As expected, ratings of relationship support and conflict were negatively correlated. The

correlation between mentor-rated support and conflict was significant ($r = -.38, p < .001$), whereas the correlation between child-rated support and conflict was not ($r = -.15, p = .08$). We also computed these correlations separately by treatment condition. The correlation between child and mentor ratings of relationship support ($r = .24$) was significant ($p < .05$) for PrimeTime dyads, as was the correlation between their ratings of relationship conflict ($r = .29$). For Lunch Buddy dyads, neither ratings of support ($r = .22$) nor ratings of conflict ($r = .01$) were significantly correlated between children and mentors. The correlation between mentors' own ratings of support and conflict was significant for both PrimeTime and Lunch Buddy mentors ($r_s = -.40$ and $-.37$, respectively), whereas the correlation between children's own ratings of support and conflict was significant for Lunch Buddy children ($r = -.26$) but not for PrimeTime children ($r = .05$). This pattern of correlations suggests that PrimeTime mentors and children shared similar views about the level of support and conflict in their relationship, and that PrimeTime children felt supported even when conflict was present. Lunch Buddy mentors and children had less overlapping views about relationship support and conflict, and Lunch Buddy children were more likely to feel supported when conflict was minimized.

Also examined were correlations across the four time points (pre-, post-treatment, 1-year FU, 2-year FU) for ratings of child externalizing problems. Intercorrelations among teacher ratings were significant and ranged from .20 to .53; intercorrelations among parent ratings were also significant and ranged from .54 to .76. Correlations between parent- and teacher-rated externalizing problems were not significant, reflecting perhaps a restricted range of scores for this sample of highly aggressive children.

We also computed bivariate correlations between relationship quality variables and child externalizing problems at all time points. Only four of these correlations were significant and three involved the relation between conflict and teacher-rated externalizing problems. Mentor-rated conflict was positively related to externalizing problems at post-treatment ($r = .21, p < .05$), and child-rated conflict was positively related to externalizing problems at the one- ($r = .21, p < .05$) and at the two-year follow-up ($r = .29, p < .01$). Unexpected was a positive correlation between child-rated support and teacher-rated externalizing problems at the one-year follow-up ($r = .18, p < .05$). None of the correlations between mentor relationship quality and parent-rated externalizing problems was significant.

Primary Analyses

We used hierarchical, multiple regression analyses to examine more fully the relation between relationship quality and children's externalizing problems as rated by teachers or parents immediately following the intervention and at the one- and two-year follow-up. Separate analyses were conducted on mentor and child ratings of relationship quality. All analyses controlled for pre-treatment externalizing score, child gender, and treatment condition. Teachers' pre-treatment ratings of teacher-student relationship support and conflict were included as covariates in an effort to control for children's baseline tendencies to enhance or detract from the quality of relationships with non-parental adults. We also tested for possible interactions between relationship quality and treatment condition¹. Results are summarized in Tables 4 and 5. Presented are findings from the truncated, main effects model except where there was a significant interaction effect.

The extent to which relationship support and conflict predicted TRF externalizing scores was examined first. Neither mentor support nor the mentor support X treatment interaction predicted teacher-rated externalizing problems. However, there was a trend for mentor-rated

¹We also examined the possibility that gender moderated the relation between mentor relationship quality and child externalizing problems. There was little evidence of moderation. We also tested the interaction between relationship support and conflict in predicting child outcomes. Results failed to support an interaction.

conflict to predict TRF scores at post-treatment, $\beta = 0.18$, $t(117) = 1.88$, $p = .06$, as well as a significant main effect for mentor-rated conflict to predict TRF scores at the one-year follow-up, $\beta = 0.26$, $t(108) = 2.09$, $p < .05$. In both instances, mentors' rating of relationship conflict positively predicted teacher-rated problem behavior. We also found that child-rated conflict significantly predicted TRF scores at post-treatment, $\beta = 0.39$, $t(105) = 2.30$, $p < .05$, at the 1-year follow-up, $\beta = 0.36$, $t(97) = 3.89$, $p < .001$, and at the 2-year follow-up, $\beta = 0.37$, $t(93) = 2.08$, $p < .05$. As with mentor ratings, child-rated conflict was positively related to teachers' reports of problem behavior. The main effect of child-rated conflict at post-treatment was qualified by a significant interaction with treatment condition. We also found a significant interaction between treatment condition and child-rated support in predicting TRF scores at the 2-year follow-up. However, post hoc analyses failed to support a moderating role for treatment condition when predicting teacher-rated externalizing problems.

We next examined the extent to which relationship support and conflict predicted CBCL externalizing scores. No significant main effects emerged for either mentor or child ratings of conflict and support. However, we did find three significant interactions. Child-rated conflict interacted significantly with treatment condition in predicting CBCL scores immediately following treatment, whereas mentor-rated support interacted significantly with treatment condition in predicting CBCL scores at the 1-year and 2-year follow-up. Post hoc analyses revealed that child-rated conflict was a significant positive predictor of parent-rated externalizing problems post-treatment for children in the PrimeTime condition only, $\beta = 0.26$, $t(101) = 2.28$, $p < .05$. Similarly, mentor-rated support significantly predicted parent-rated externalizing problems for PrimeTime children only at the 1-year follow-up, $\beta = -0.24$, $t(91) = -2.40$, $p < .05$, and at the 2-year follow-up, $\beta = -0.19$, $t(83) = -1.74$, $p = .09$.

Discussion

This study tested a fundamental assumption in the field of youth mentoring—the essential role of relationship quality as a predictor of outcomes. Our findings replicate and extend previous findings suggesting a link between the quality of mentoring relationships and treatment outcomes for aggressive, school age children (Cavell & Hughes, 2000). Overall, we found that children in the Lunch Buddy condition rated their mentoring relationships as less supportive than did children in the PrimeTime condition. Thus, it appears that deliberate attempts to dilute the strength of the Lunch Buddy relationship were successful. However, we should note that children in both conditions gave generally favorable ratings to their mentoring relationships, as judged by mean support scores (see Table 2). We also found that mean child-rated conflict scores were generally low and did not differ significantly across conditions, although it is possible that even low levels of reported conflict are problematic. For mentors, neither ratings of support nor ratings of conflict differed significantly across conditions. Researchers seldom compare two or more mentoring programs (c.f., DuBois & Neville, 1997), so it is difficult to interpret these null findings. Cavell and Hughes (2000) also reported significant differences in child-rated support favoring PrimeTime but no differences in mentor-rated support. Unlike the two programs examined here, both programs in the Cavell and Hughes (2000) study were community-based.

Paradoxically, key differences between PrimeTime and Lunch Buddy programs could account for the similarity in mentors' ratings of relationship quality. We suspect that extensive training and supervision enabled PrimeTime mentors to maintain relationship satisfaction in the face of conflict, whereas minimally trained Lunch Buddy mentors had little opportunity for conflict before being replaced by the next mentor. Child and mentor ratings of relationship quality were modestly correlated in this study (see Table 3), so it is also possible that “mentors who felt close to their mentees did not necessarily have mentees who felt close to them” (Herrera, 2004, p. 14).

Despite significant differences across conditions in children's ratings of relationship support, there was little evidence that support variables (child- or mentor-rated) predicted changes in children's teacher-rated externalizing problems. This is somewhat surprising given that other researchers have found links between the quality of mentoring relationships and key outcomes (e.g., Cavell & Hughes, 2000; Herrera, 2004; Parra et al., 2002). On the other hand, researchers seldom assess both the negative and the positive aspects of relationship quality (c.f., Rhodes, Reddy, Roffman, & Grossman, 2005) or even consider the possibility that mentoring relationships have a negative side (Spencer, 2007). When both support and conflict were used to predict TRF scores, only the latter emerged as a significant predictor. Child-rated conflict consistently predicted TRF raw externalizing scores at post-treatment, at the 1-year follow-up, and at the 2-year follow-up. Mentor-rated conflict was significant in predicting TRF scores at the 1-year follow-up. In each case, children in less conflicted mentoring relationships were viewed by teachers as having less problem behavior. It is unclear whether the predictive significance of child- versus mentor-rated conflict warrants interpretation at this time. However, it was clear that relationship conflict, whether rated by mentors or by mentees, was generally related to teacher-rated externalizing problems.

We found little evidence that treatment condition moderated the relation between relationship conflict and TRF scores. Significant interaction effects emerged for child-rated conflict X treatment at post-treatment and for child-rated support X treatment at the 2-year follow-up, but post hoc tests of the simple slopes were not significant. This is not surprising considering that both treatment conditions involved school-based activities that potentially influenced children's behavior at school or teachers' perceptions of children's behavior at school. In the Lunch Buddy program, the only activity was child-focused, lunchtime visits with a mentor. In PrimeTime, the school-based activities were small group, problem solving skills training and case manager consultation with teachers. Given the multi-faceted nature of PrimeTime, it is not possible to estimate the extent to which changes in teacher-rated problem behavior were related specifically to mentoring or to these non-mentoring components. It is also possible for community- and school-based mentoring programs to produce similar outcomes but through entirely different mechanisms (Keller, 2005a). Community-based mentoring is thought to have proximal impact on improved parent-child relationships (Rhodes et al., 2000; Rhodes, Reddy, & Grossman, 2005), whereas school-based mentoring could operate by enhancing children's relationships with teachers and peers or by increasing their sense of school belonging (Herrera, 1999, 2004).

As expected, relationship quality predicted parent-rated outcomes, but only for children in the PrimeTime condition. We based this expectation on similar findings reported by Cavell and Hughes (2000), on studies linking community-based mentoring to enhanced parent-child relationships (Rhodes et al., 2000; Rhodes, Reddy, & Grossman, 2005), and on the fact that PrimeTime parents had greater access to information about their child's behavior in the context of a three-semester mentoring relationship. Support for this hypothesis was found at each time point. Treatment condition interacted with child-rated conflict to predict CBCL scores immediately following treatment, and treatment interacted with mentor-rated support scores in predicting CBCL scores at both follow-up assessments. In each instance, post hoc analyses revealed significant effects for children in the PrimeTime condition only. Specifically, PrimeTime children who reported lower levels of conflict in the mentoring relationship were rated by parents as better behaved immediately following the intervention and PrimeTime children whose mentors reported higher levels of relationship support were rated by parents as better behaved at the 1-year and 2-year follow-ups.

Results from our bivariate analyses point to potentially important differences in how mentor-mentee dyads in the two conditions experienced relationship support and conflict. PrimeTime mentors and mentees had fairly concordant perceptions of relationship quality, and PrimeTime

children were more likely to report feeling supported even when they felt conflict was present. In the Lunch Buddy program, mentor-mentee dyads had less concordant views of relationship quality and Lunch Buddy children were unlikely to report feeling supported in the presence of conflict.

Potential differences in mentor-mentee dyads' perceptions of relationship quality should not be seen as evidence that one program was superior to the other. Instead, our findings help explain how two different mentoring programs could produce similar benefits for aggressive, school age children (Hughes et al., 2001;2005). Because PrimeTime mentors received specialized training and weekly supervision, they might have been more open to and better prepared for conflict involving aggressive children. An open and direct approach to managing conflict appeared to fit the structure of PrimeTime as there was ample time and opportunity for conflict to arise. The relationship spanned three successive semesters, a typical visit lasted 1-2 hours, interactions occurred outside of school hours, and the choice of activity was repeatedly negotiated between mentor and mentee. Thus, children who benefited from PrimeTime could have done so because they participated in a supportive, meaningful relationship with a single mentor over a span of three academic semesters. Conversely and coincidentally, the structure of the Lunch Buddy program might have been an excellent fit for mentors who were not specially trained to deal with conflict. Visits were restricted to the school cafeteria, interactions lasted just 30 minutes, activities were limited to those allowed under the school's lunchtime rules, and mentors ended their relationships after only one semester. Thus, children who benefited from the Lunch Buddy program might have done so because lunchtime mentoring was relatively free of conflict. If researchers find that aggressive children reliably benefit from Lunch Buddy mentoring, then other factors besides a close, lasting bond are likely to be operating (Cavell & Smith, 2005). Hughes et al. (2005) speculated that Lunch Buddy mentors might have had a positive impact on target children's peer ecology, either through positive changes in lunchtime peer interactions or enhanced reputations among lunchtime peers.

We should note that features common to both programs likely influenced child and mentor ratings of relationship quality. Both programs spanned three academic semesters and both drew from the same pool of college student mentors. And despite efforts to lessen the quality of Lunch Buddy mentoring relationships, Hughes et al. (2001;2005) actually followed a number of recommended best practices in youth mentoring (DuBois, Neville, et al., 2002). Specifically, Lunch Buddy mentors were closely monitored and given clear expectations about activities, frequency of contact, and length of the relationship. Both programs also used academic credit and course grades to ensure consistent visits and to prevent early termination. Surprisingly, few mentoring programs use this kind of academic incentive (Herrera, 2007), despite estimates that nearly 70% of school-based mentors are college or high school students (Herrera et al., 2007). But if children can be harmed when mentoring is inconsistent (Karcher, 2005) or when mentoring ends early (Grossman & Rhodes, 2002), then it makes sense to consider the use of external contingencies.

Also common to both PrimeTime and Lunch Buddy conditions was the practice of scheduling a definitive ending to the mentoring relationship. This too appears to be an uncommon practice among mentoring programs. In fact, BBBSA mentors are encouraged to continue the relationship beyond the expected minimum length, which is one calendar year for community-based mentoring and two academic semesters for school-based mentoring (Grossman & Rhodes, 2002; Herrera et al., 2007). The practice of encouraging mentors to go beyond the expected minimum is based on BBBSA's goal of forming a lasting mentoring relationship (see <http://www.bbbs.org>). This practice is based on the assumption that longer relationships are more beneficial. BBBSA mentors are given guidelines for closing a mentoring relationship, but the decision to end the relationship and the manner in which it ends rests mainly with the

mentor (Herrera, 2007). Unfortunately, a sizeable number of mentoring relationships end before the promised length of time (Grossman & Rhodes, 2002). Difficulty meeting the goal of lasting relationships could explain mixed findings from a recently completed, multi-site impact study of school-based mentoring. Herrera and colleagues (2007) found that mentored youth enjoyed significant gains (e.g., better academic performance, fewer school infractions) relative to non-mentored youth after approximately one semester of mentoring. Those gains were lost, however, when matches were not continued from one semester (spring) to the next (fall). A premature ending was particularly problematic for youth who had lower quality mentoring relationships, as indicated by declines on several outcome variables. Unlike the Lunch Buddy program, BBBSA does not routinely pair youth with a new school-based mentor each semester. Doing so would preclude the possibility of a lasting relationship. On the other hand, it would fit well the notion that children benefit from multiple and diverse relationships that offer a “convoy of support” (e.g., Levitt, 2005, p. 28). Actively re-matching children with a new mentor each semester also has the advantage of shortening the time commitment for any one mentor and possibly attracting more volunteers (Herrera, 1999). If research continues to show that mentoring that ends early is harmful and that scheduled endings are not harmful—even after only one semester—then mentoring programs should consider the value of specific end-dates. In this way, a mentoring relationship that begins well and goes well can also end well.

Study Limitations

There are several limitations to our study. The first is that we examined the role of relationship quality in the context of mentoring programs that are somewhat unique. Because both programs paired mentors with highly aggressive children, our findings may not generalize to mentoring programs that target older youth or children and adolescents who do not have significant externalizing problems. Both programs also relied exclusively on college student mentors and both were developed as part of a university-based research project. Thus, our findings may not apply to programs such as BBBSA that are broader in scope and face more real-world challenges (e.g., reliance on community volunteers). Also worth noting is that the PrimeTime program combined mentoring with additional treatment components, which confounds attempts to estimate the extent to which child outcomes were related solely to mentoring. The Lunch Buddy program was originally designed as a control condition with little anticipated impact on children’s functioning. As a result, its potential benefit to children was unexpected and findings involving the role of relationship quality were correlational, post hoc, and they are in need of replication.

Relationship quality was assessed via measures of support and conflict and reports were gathered from both children and mentors at multiple time points. Still, these were summary impressions collected at the end of each semester and not data gathered during the course of the relationship. Future studies would be enhanced if the assessment of relationship quality was broadened to include more frequent probes, reports from parents or teachers, or samples of directly observed interactions.

Most of our significant findings involved ratings of relationship conflict. Although we cited recent studies indicating that negative mentoring experiences were more predictive of youth outcomes than positive experiences, it was surprising to find so few associations between relationship support and children’s externalizing problems. Although it is tempting to suggest that a significant link between relationship conflict and child externalizing problems offers renewed promise for mentoring as an intervention strategy for aggressive children, it is possible that relationship conflict is simply a marker variable indicating which children are likely to have behavior problems in subsequent years. Arguing somewhat against that interpretation is the fact that we included as covariates in all analyses children’s pre-treatment externalizing

scores as well as ratings of the quality of their teacher-student relationships prior to the start of mentoring². It is important to note that our data are correlational in nature and relationship quality was not randomly assigned. Therefore, our findings cannot be used to infer a causal relation between mentor relationship quality and child externalizing problems. It is also important to recognize that our findings offer, at best, a partial view of the many factors operating in mentoring programs such as PrimeTime and Lunch Buddy. The significant findings that emerged explained only a modest amount of variance in children's problem behavior.

Implications for Research, Policy, and Practice

We replicated and extended previous work supporting the predictive utility of relationship quality in mentoring programs for highly aggressive, school age children (Cavell & Hughes, 2000). Data were drawn from a larger sample tracked for a longer period of time, and relationship quality was examined in the context of two very different mentoring programs. Importantly, both programs kept the promise of youth mentoring: children were safe, visits were consistent, and mentors did not abandon their charges.

Our findings raise important questions for those who oversee and formulate policy regarding mentoring programs for children at risk. Is a close, lasting bond a necessary condition for positive outcomes or can similar gains be achieved via successive rematches and planned goodbyes? In what ways is the peer context of lunchtime mentoring critical to any gains achieved? Is it possible that successive rematches, planned goodbyes, narrowly defined mentoring contexts (e.g., school lunches), and strong contingencies for retaining mentors can override the impact of individual child risk factors on the quality and length of mentoring relationships? To what extent do program structures such as these allow for the effective management of volunteer mentors above and beyond that achieved via the recommended best practices of selecting, training, and supervising mentors? Answers to these questions will advance the utility of youth mentoring as a bona fide prevention tool.

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²We found support for the predictive utility of mentor relationship quality, even when controlling for nine additional pre-mentoring covariates. These controls include parents' ratings of externalizing problems when predicting TRF scores and teachers' ratings of externalizing problems when predicting CBCL scores. Other covariates were scores from the parent or child NRI scale (i.e., parents' ratings of support and conflict with their child; children's ratings of support and conflict with mother, teacher, and best friend, respectively). In our original analyses, predicted main effects of relationship conflict and support (mentor- or child-rated) accounted for a median of 4.5% of the variance in TRF externalizing scores (range = 1% to 12%). In our supplemental analyses, main effects of conflict and support accounted for a median of 6.5% of the variance in TRF externalizing scores (range = 2% to 8%). In our original analyses, predicted interaction effects between treatment condition and conflict (mentor- or child-rated) and between treatment condition and support (mentor- or child-rated) accounted for a median of 3% of the variance in CBCL externalizing scores (range = 2% to 5%). In our supplemental analyses, these interaction terms accounted for a median of 4% of the variance in CBCL externalizing scores (range = 1% to 6%).

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Table 1
Demographic Characteristics by Treatment Condition.

Variables	PrimeTime (<i>n</i> = 75)		Lunch Buddy (<i>n</i> = 70)	
	Categorical variables			
	<i>n</i>	%	<i>n</i>	%
Male	44	58.7	44	62.9
Grade				
2	40	53.3	33	47.1
3	35	46.7	37	52.9
Race				
White non-Hispanic	24	32.0	26	37.1
White Hispanic	21	28.0	16	22.9
African American	30	40.0	27	38.6
Asian	--	--	1	1.4
Parents' marital status				
Married	33	44.0	24	34.3
Separated	7	9.3	3	4.3
Divorced	14	18.7	12	17.1
Never married	19	25.3	16	22.9
Other	2	2.7	14	20.0
Continuous variables				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	8.19	0.62	8.12	0.68
Years of mother's education	11.75	2.79	12.18	2.19
Years of father's education	11.63	3.91	12.47	2.68

Table 2
Means and Standard Deviations for Primary Variables by Treatment Condition.

Variable	PrimeTime			Lunch Buddy		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Child MAS	74	3.41	0.36	69	3.24	0.41
Child NRI-support	71	4.16	0.66	62	3.78	0.84
Child NRI-conflict	71	1.14	0.27	62	1.21	0.37
Mentor MAS	74	4.45	0.50	70	4.51	0.62
Mentor NRI-support	74	3.84	0.49	70	3.73	0.54
Mentor NRI-conflict	74	1.63	0.61	70	1.72	0.46
TRF Ext raw score pre-treatment	75	30.45	10.67	70	30.56	10.20
TRF Ext raw score post-treatment	73	24.67	14.76	68	22.04	12.81
TRF Ext raw score 1-year FU	64	26.45	13.71	62	17.02	14.06
TRF Ext raw score 2-year FU	60	21.38	15.03	64	19.13	15.32
CBCL Ext raw score pre-treatment	73	18.56	11.20	63	15.19	9.42
CBCL Ext raw score post-treatment	66	14.09	8.87	52	13.83	8.02
CBCL Ext raw score 1-year FU	50	14.92	9.61	47	12.09	8.30
CBCL Ext raw score 2-year FU	50	14.16	11.27	37	12.97	7.64

Note: MAS = Mentor Alliance Scale, NRI = Network of Relationships Inventory, TRF = Teacher Report Form, Ext = Externalizing, FU = Follow-up, CBCL = Child Behavior Checklist.

Table 3

Bivariate Correlations among Predictor Variables.

Variables	Mentor support	Mentor conflict	Child support	Child conflict
Mentor support	--			
Mentor conflict	-.38**	--		
Child support	.22*	-.01	--	
Child conflict	-.06	.16	-.15	--

Support and conflict variables are mean scores computed across 3 time points.

**
Note: $p < .01$

*
 $p < .05$.

Table 4
Mentor- and Child-Rated Relationship Support and Conflict Predicting TRF Externalizing Problems.

Predictor variables	<i>R</i>	<i>B</i>	<i>R</i> ² Δ	<i>F</i> Δ
<u>TRF post-treatment</u>				
Mentor-rated support	-.15	.05	.05	2.86 (<i>p</i> = .06)
Mentor-rated conflict	.20	.18 (<i>p</i> = .06)		
<u>TRF 1-year follow-up</u>				
Mentor-rated support	-.07	.05	.04	2.82 (<i>p</i> = .06)
Mentor-rated conflict	.20	.26 [*]		
<u>TRF 2-year follow-up</u>				
Mentor-rated support	-.15	-.14	.03	1.54
Mentor-rated conflict	.12	.06		
<u>TRF post-treatment</u>				
Child-rated support	.03	.03	.01	0.50
Child-rated conflict	.06	.39 [*]		
Child support X treatment	.00	-.11	.05	2.71(<i>p</i> = .07)
Child conflict X treatment	-.07	-.39 [*]		
<u>TRF 1-year follow-up</u>				
Child-rated support	.20	.12	.12	7.73 ^{**}
Child-rated conflict	.28	.36 ^{**}		
<u>TRF 2-year follow-up</u>				
Child-rated support	.07	-.20	.10	5.02 ^{**}
Child-rated conflict	.30	.37 [*]		
Child support X treatment	.15	.32 [*]	.04	2.05
Child conflict X treatment	.20	-.01		

Note. All analyses controlled for pre-treatment level of the outcome variable, gender, treatment condition, and pre-treatment ratings of teacher-student relationship support and conflict. TRF = Teacher Report Form ; CBCL = Child Behavior Checklist.

^{*}
p < .05

^{**}
p < .01.

Table 5
Mentor- and Child-Rated Relationship Support and Conflict Predicting CBCL Externalizing Problems.

Predictor variables	<i>r</i>	<i>B</i>	<i>R</i> ² Δ	<i>F</i> Δ
<u>CBCL post-treatment</u>				
Mentor-rated support	-.03	-.06	.00	0.23
Mentor-rated conflict	.02	-.05		
<u>CBCL 1-year follow-up</u>				
Mentor-rated support	.07	-.08	.02	1.56
Mentor-rated conflict	-.04	-.11		
Mentor support X treatment	-.19	-.30*	.03	2.37 (<i>p</i> = .10)
Mentor conflict X treatment	.00	-.10		
<u>CBCL 2-year follow-up</u>				
Mentor-rated support	-.05	.16	.01	0.35
Mentor-rated conflict	.15	.09		
Mentor support X treatment	-.12	-.32*	.05	3.63*
Mentor conflict X treatment	-.07	-.18		
<u>CBCL post-treatment</u>				
Child-rated support	-.11	-.05	.02	1.21
Child-rated conflict	-.08	-.19		
Child support X treatment	-.12	-.05	.04	2.53 (<i>p</i> = .09)
Child conflict X treatment	.06	.33*		
<u>CBCL 1-year follow-up</u>				
Child-rated support	.02	-.12	.01	0.67
Child-rated conflict	-.16	-.05		
<u>CBCL 2-year follow-up</u>				
Child-rated support	-.08	-.10	.02	1.01
Child-rated conflict	-.13	.06		

Note. All analyses controlled for pre-treatment level of the outcome variable, gender, treatment condition, and pre-treatment ratings of teacher-student relationship support and conflict. TRF = Teacher Report Form; CBCL = Child Behavior Checklist.

*
p < .05

**
p < .01.