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Effectiveness of Parent-Child Mediation in Improving Family Functioning and Reducing Adolescent Problem Behavior: Results from a Pilot Randomized Controlled Trial

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Abstract

Parent-child mediation programs are intended to resolve or manage disputes and improve family functioning, but rigorous evaluations of their effectiveness are lacking. Families referred to a community-based mediation program ($N=111$) were randomized to an intervention or wait-list control group, and completed three surveys over a 12-week period. With the exception of parent-reported child delinquency (which decreased more in the intervention group), this evaluation provides little support for the short-term effectiveness of parent-child mediation for improving family functioning and reducing child problem behaviors in general. Given that this is the first randomized controlled trial of a parent-child mediation program, additional evaluations involving larger samples and longer follow-ups are needed before firm conclusions can be drawn about the effectiveness of this intervention.

Keywords

Parent-child mediation; Family functioning; Academic performance; Substance use; Delinquency

Introduction

Many youth exhibit one or more concerning behaviors during adolescence such as delinquency (Kann et al., 2014), substance use (Miech, Johnston, O'Malley, Bachman, & Schulenberg, 2015), running away from home (Tucker, Edelen, Ellickson, & Klein, 2011), and truancy (Vaughn, Maynard, Salas-Wright, Perron, & Abdon, 2013). Just as these types

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Informed consent: Informed consent was obtained from all individual participants included in the study.

Authors' Contributions

JT conceived of the study, participated in its design and coordination, and drafted the manuscript; ME participated in the design and interpretation of the data, and helped to draft the manuscript; WH performed the statistical analysis and helped to draft the manuscript. All authors read and approved the final manuscript.

of behaviors become more prevalent during adolescence, parent-child conflict can increase in frequency and/or intensity during this developmental period as well (De Goede, Branje, & Meeus, 2009; Laursen, Coy, & Collins, 1998). Family conflict is an important risk factor for the initiation and maintenance of youth problem behavior (Ehrlich, Dykas, & Cassidy, 2012; Klahr, Rueter, McGue, Iacono, & Burt, 2011; Timmons & Margolin, 2015). In turn, the youth's engagement in problem behavior can trigger or escalate family conflict. For these youth and their families, effective family-focused programs are needed to help them resolve family disputes and learn conflict resolution skills.

Improvements in family functioning may have significant positive effects on a wide range of adolescent problem behaviors. Cross-sectional and longitudinal data indicate that youth engagement in problem behavior is associated with the targets of parent-child mediation: reducing conflict (Brook et al., 2009; Trentacosta et al., 2011; Vanassche, Sodermans, Matthijs, & Swicegood, 2014), improving general communication (Luk, Farhat, Iannotti, & Simons-Morton, 2010; Pokhrel, Unger, Wagner, Ritt-Olson, & Sussman, 2008; Tobler & Komro, 2010), and developing problem-solving skills (Wijsbroek, Hale, Van Doorn, Raaijmakers, & Meeus, 2010). Further, results from family-focused interventions suggest that teaching families skills in the areas of communication and family management can produce positive effects on family functioning and youth behavioral outcomes (Chu, Bullen, Farruggia, Dittman, & Sanders, 2015; Hogue, Liddle, Becker, & Johnson-Leckrone, 2002; Van Ryzin & Dishion, 2012), including among youth with serious problem behavior (Henderson, Dakof, Greenbaum, & Liddle, 2010; Henggeler, Pickrel, & Brondino, 1999; Santisteban et al., 2003).

Parent-child mediation is designed to resolve or manage family disputes and improve family functioning. Mediation is a voluntary method of dispute resolution in which a neutral third party assists individuals who are in conflict with each other in reaching a settlement. The specific prevention goals of parent-child mediation are to enhance family functioning, keep the family intact (e.g., avoid foster care placement), and improve youth outcomes (Smith, 1995; Van Slyck, Newland, & Stern, 1992). A major distinction between parent-child mediation and other youth mediation programs is that the former is focused on not only resolving or managing specific family disputes, but fostering greater parent-child communication and providing negotiating tools for the family to take home and use in resolving future disputes themselves (Van Slyck et al., 1992). Typically delivered over a small number of sessions, these programs encourage structured negotiations about concrete issues of family life and help family members work towards a specific agreement for resolving or managing these issues that all parties feel is fair and realistic. The mediation process is based on the premise that compliance with these agreements of daily living increases trust between the parent and child, and facilitates communication and negotiation on larger issues in the future (Zetzel, 1985). In general, mediation is intended to have lasting positive effects on individual participants by improving their skills, knowledge and dispositions (Pincock, 2013). In the case of parent-child mediation, the goal is to produce fundamental changes in family dynamics and provide family members with concrete skills that can have a sustained positive effect on family functioning and youth problem behavior over time.

Creating a neutral and trusting environment where all parties are equal participants is fundamental to the mediation process (Schuman, 2002). Although not Motivational Interviewing (MI) per se, the delivery of child mediation shares a number of features with MI (Herrman, Hollett, Gale, & Foster, 2001). Mediators are trained to be non-judgmental and non-confrontational, and to follow general MI principals of expressing empathy (e.g., acceptance facilitates change), rolling with resistance (e.g., avoid arguing), and supporting self-efficacy (e.g., encourage a person's belief in the possibility of change) (Miller & Rollnick, 2002). Further, parent-child mediators are trained to be sensitive to perceived power imbalances between parents and youth, to be flexible in terms of meeting the parties where they are, and to build trust and maintain confidentiality throughout the process (Shaw, 1985).

Historically, there has been considerable support for youth-oriented mediation programs among public and private juvenile justice and social service agencies (Phear, 1985; Smith, 1995). Parent-child mediation is often used as an alternative to such standard interventions as adjudication, probation, and counseling for dealing with major but resolvable conflicts involving youth and their family (Van Slyck et al., 1992). There is some evidence that the majority of parents and adolescents participating in parent-child mediation believe that it made a positive difference in how they get along, thought it was successful, and would recommend it to a friend without reservation (Stahler, Ducette, & Povich, 1990). However, although hundreds of community mediation centers operate in communities across the U.S. (Corbett & Corbett, 2011), with most offering mediation to resolve parent-child conflict (Charkoudian & Bilick, 2015), there are only a handful of evaluations in the literature, mostly published in the 1980s, and none have compared families receiving and not receiving parent-child mediation on indicators of family functioning.

The first evaluation involved 153 families who were referred for mediation from family courts (Morris, 1983; Shaw, 1984; Shaw, 1985). The investigators concluded that mediation was successful for 77% of the families at the 2-month follow-up, with success defined as a positive outcome on at least two of these five factors: the parent thought the mediation was helpful, the child was more manageable, and the presenting problems were resolved; the family completed all four mediation sessions (or attended fewer sessions, but all parties felt satisfied with the progress made); and the child did not return to the family court on a new charge. A second evaluation involved 48 families who were referred to mediation due to the child's status offense (Merry & Rocheleau, 1985). At the 1-month follow-up, participants generally reported enhanced parent-child communication, decreased family fighting, and general improvement in family functioning. A third evaluation involved 34 families who participated in mediation (Lam, 1989). Interviews were conducted prior to mediation, as well as at 1-week and 2-months post-mediation, showing positive changes over time in family communication, cooperation, and conflict. Finally, an evaluation was conducted with 70 families referred to parent-child mediation as an alternative to justice system intervention (Van Slyck et al., 1992). Both parent and child completed the Family Environment Scale (Moos & Moos, 1986) before mediation and then within three months post-mediation. For parents, significant improvement was found in encouragement of independence, as well as trends on the subscales of expressiveness and active/recreational orientation. Children

showed significant improvement in their perceptions of the family encouraging active/recreational activities, and a trend in the family encouraging an achievement orientation.

Although the existing literature suggests that parent-child mediation may have a positive effect on family functioning, significant methodological shortcomings limit the inferences that can be drawn (Beck & Sales, 2001). These shortcomings include lack of control groups, small sample sizes, and limited assessment batteries. Further, we do not know whether parent-child mediation, to the extent that it improves family functioning, may have positive effects on the youth's academic performance, substance use, or engagement in delinquent behavior. Clearly, more rigorous evaluations of these mediation programs are warranted.

Current Study

This study is the first randomized controlled trial to evaluate the effectiveness of a parent-child mediation program on family functioning and child problem behaviors. The primary goal was to evaluate whether families of adolescents receiving parent-child mediation showed greater improvement in family communication, family conflict, and family cohesion at 6-week and 12-week follow-ups compared to a wait-list control sample of families not receiving parent-child mediation. To address this goal, we obtained independent reports of family functioning from the parent and the adolescent. A secondary goal was to explore whether adolescents in families that received parent-child mediation showed greater improvements in substance use behaviors and intentions, academic performance, and delinquency at 6-week and 12-week follow-ups compared to adolescents in the wait-list control sample. Finally, we examined the acceptability of parent-child mediation, from the perspective of both parties, in terms of whether they planned on using the skills they learned during the mediation session at home and their overall level of satisfaction with the mediation session they attended.

Methods

Participants and Procedures

Families were eligible if they had a middle school or high school aged child who was referred to a non-profit community-based agency located in California for family mediation due to problems such as poor grades, truancy, defiant behavior, delinquency, and substance use. Families were ineligible if they were referred to the program for the following reasons: conflicts involving gang violence (e.g., shootings, killings), conflicts involving weapons, arson, conflicts involving explicit sex activities, conflicts involving domestic violence/child abuse, and threats to harm self or others. These highest risk youth were excluded because their level of need exceeds what this agency's family mediation program is designed to address. In addition to self-referrals, families could be referred to the program by their child's school or by local police or probation departments.

Referred families were randomly assigned to the intervention group or a wait-list control group in an approximately 60:40 ratio to account for the somewhat higher participation rate in the group that could receive mediation right away (e.g., the intervention group). Once randomized, families were mailed an introductory packet of materials, tailored to condition,

that explained the mediation program and research study. This mailing was followed by a phone call to the family, which involved talking separately to the parent and child, explaining the mediation program and the research study, answering any questions, and determining interest in participating. Families could refuse the study and still receive mediation. All families who participated in the study were asked to agree to participate in at least one family mediation session, and to complete three surveys (baseline, 6 weeks later, and 12 weeks later). Intervention families typically completed their first mediation session immediately after the baseline survey. Families in the wait-list control condition were eligible to receive the mediation program after completing the 12-week follow-up assessment. There was no further follow-up of any families by research staff after the 12-week assessment. All families received a Community Resource Guide with contact information for free and low-cost family and social services in the study area. Informed consent was obtained from both parents and children, all materials and procedures were approved by the institution's Internal Review Board, and survey responses are protected by a Certificate of Confidentiality from the National Institutes of Health.

Two hundred and eighty-three families were referred to the program and had usable contact information. Of these referred families, 111 agreed to participate and completed the baseline survey ($n=57$ intervention families, $n=54$ control families). Non-participation was due primarily to lack of interest or perceived need for mediation ($n=122$), but also included not being eligible for the study ($n=28$) and not showing up for the baseline survey ($n=22$). Retention rates were good at both the 6-week (intervention: 74%; control: 81%) and 12-week (intervention: 88%; control: 87%) follow-ups. As shown in Table 1, the sample was predominantly Hispanic, reflecting the racial/ethnic composition of the communities served by the agency. Children referred for parent-child mediation services were 15 years old, on average, and were fairly evenly distributed across gender and whether they lived in a single- or two-parent household. There were no significant differences between the intervention and control groups on any of the study variables at baseline, including background characteristics, family functioning, substance use intentions and behavior, academic performance, and delinquency.

Surveys

The parent and child completed separate surveys, which were conducted in settings that afforded sufficient privacy. Follow-up surveys were conducted 6-weeks and 12-weeks after the baseline survey. Both the parent and child received gift cards for participating in the surveys (\$25 at baseline, \$25 at 6-week follow-up, and \$50 at 12-week follow-up). The parent survey was available in both English and Spanish; the child survey was available in English only (no child was unable to complete the survey due to language difficulties).

Parent-Child Mediation

Families were offered up to 3 mediation sessions, depending on need and the family's preference, and received a Community Resource Guide with contact information for free and low-cost family and social services in the study area. These sessions were facilitated by the agency's volunteer mediators, who had received 50 hours of formal training in delivering family mediation. The mediation session occurred either at the agency or the child's school

in a room that afforded sufficient privacy, and was conducted in either English or Spanish depending on the family's preference. The structure of the mediation sessions was as follows: At the first session, the family was given an explanation of the parent-child mediation process and ground rules were set. The child and parent then met individually with the mediator to discuss the issues that they believed were contributing to the family conflict (referred to as "caucusing"). Next, the family was brought back together to explain their concerns. Finally, the mediator assisted the family in working together towards a mutual and workable agreement. An "agreement" is a written document, which is signed by the mediator and all participating family members, that specifies how each person will behave in order to meet the stated needs of the other person, reduce parent-child conflict, and improve family functioning. The goal is to construct an agreement that all parties believe is fair and workable. Agreements are made for the period of time between mediation sessions only; the purpose of this is to make it as easy as possible for the family to succeed in keeping their agreements. New or renegotiated agreements are drafted at subsequent mediation sessions based on the current needs of the family. At the last session, the mediator may suggest that the family continue to make these short-term agreements and renegotiate them periodically if that seems advisable. Both child and parent completed fidelity and satisfaction ratings immediately after each mediation session.

Measures

Demographic characteristics—These variables included the child's and parent's age, gender, race/ethnicity, and grade in school or highest level of education. The child reported on what adults s/he currently lived with (e.g., parent(s), stepparent(s), other relative, non-relative).

Other service use—This was assessed by asking parents whether the family had received family counseling, individual counseling, parenting classes, or drug or alcohol treatment in the past 30 days due to their child's behavioral problems. If they indicated that such services had been used, they were asked the number of sessions they had attended (*0, 1, 2 or more*) and their child had attended (*0, 1, 2 or more*) in the past 30 days, as well as the month and year in which the family began receiving any of these services.

Family communication—Communication was assessed with a 10-item scale (McCubbin & Thompson, 1987), with five items assessing Open Communication (e.g., "We took the time to hear what each other had to say") and five items assessing Problem Communication (e.g., "We walked away from conflicts still feeling upset"). The child and parent each rated these items in terms of how often certain things happened in their family in the past 30 days when they were struggling with problems or conflicts that upset them (1 = *never* to 5 = *almost always*). Items were reverse scored (as necessary) and averaged to generate separate child-report ($\alpha = .89$) and parent-report ($\alpha = .85$) scores, with higher scores indicating better communication.

Family conflict—Conflict was assessed with five items adapted from the Texas Christian University (TCU) Family Conflict Scale (Simpson & McBride, 1992; TCU Institute of Behavioral Research, 2010). The child and parent each rated how often certain things

happened between them in the past 30 days (e.g., “Said bad things about each other”; “Had arguments or fights”) using a 5-point scale (1 = *never* to 5 = *almost always*). Items were averaged to generate separate child-report ($\alpha = .88$) and parent-report ($\alpha = .85$) scores, with higher scores indicating greater conflict.

Family cohesion—Cohesion was assessed using six items (Metzler, Biglan, Ary, & Li, 1998) adapted from the Cohesion subscale of the Family Environment Scale (Moos & Moos, 1994). The child and parent each rated how much they agree with statements such as “I enjoy being with my parent(s)/child” and “There is a feeling of togetherness in my family” using a 5-point scale (1 = *not at all* to 5 = *very much*). Items were averaged to generate separate child-report ($\alpha = .92$) and parent-report ($\alpha = .86$) scores, with higher scores indicating greater cohesion.

Child substance use intentions—Intentions were assessed with separate items asking the child to rate on a 4-point scale (1 = *definitely no*; 2 = *probably no*; 3 = *probably yes*; 4 = *definitely yes*) how likely it is that s/he will use alcohol and marijuana in the next six months. For our analysis, items for alcohol and marijuana use were dichotomized so that 0 represented *definitely no* and 1 represented *probably no*, *probably yes* and *definitely yes*. The two dichotomized items were then combined to indicate no intention (0), intention to use either (1), and intention to use both (2).

Child substance use—Past month use was assessed separately for alcohol and marijuana by asking the child how many days s/he used the substance in the past 30 days (1 = *0 days* to 7 = *20–30 days*).

Child grades—Past month grades were rated by both the parent and child on an 8-point scale (1 = *mostly A's* to 8 = *mostly F's*). From this item, we derived a variable indicating whether the child generally received grades worse than C in school. This was based mainly on parent report (which corresponded to child report in 75% of cases); in the few cases where parent reported grade information was missing, we used the child's report of his/her grades.

Child delinquency—Past month delinquent behavior was assessed by both child report (13 items) and parent report (10 items) based on items from Project ALERT (Tucker, Martinez, Ellickson, & Edelen, 2008) and the National Longitudinal Study of Adolescent to Adult Health (Bearman, Jones, & Udry, 1997). The child version asked about behavioral problems at school (2 items), property damage (2 items), running away, getting into a serious fight, stealing, getting into trouble with police, public unruliness, lying to parents (2 items), and defying parents' rules (2 items). The parent version excluded four behaviors that they would be less likely to know about (sent out of the classroom, property damage (2), public rowdiness), but added one item on talking back to the parent in a disrespectful way. Each item was rated on a 7-point scale from *0 days* to *20–30 days* in terms of the number of days in which the child had engaged in the behavior. Due to rare responses at the higher end of the scale, we dichotomized each item (0 = *0 days*, 1 = *any days*) and then calculated the percentage of endorsed items, separately for child-reported delinquency and parent-reported delinquency.

Fidelity and Acceptability of Mediation

We developed four items to assess the extent to which the mediators adhered to the process for delivering mediation: “The mediator... did not take sides, treated me with respect, treated me as an equal participant, encouraged me to make my own decision” (4-point scale: 1= *strongly disagree* to 4= *strongly agree*). These items were developed based on the agency’s Mediation Training Manual, and in consultation with the agency’s administrators and mediators. They were then pilot tested with 6 families participating in mediation who provided feedback on their content and wording. Parent and child separately completed the items immediately after each mediation session. To assess the acceptability of the mediation program, parent and child also rated each mediation session in terms of whether they planned on using the skills they learned during the mediation session at home (4-point scale: *definitely no* to *definitely yes*) and their satisfaction with the mediation session (4-point scale: *not at all satisfied* to *very satisfied*).

Analysis Plan

Our study design is a mixed between-and-within design, with one between factor (treatment assignment) and one within factor (time; 3 levels at baseline, 6 week and 12 week). All individuals who completed the baseline survey are included in the analysis, regardless of whether they completed the follow-up surveys. In all cases, we regressed the outcomes on the treatment assignment indicator, including in our analysis the effect of time, as well as the interaction between time and treatment. With this model, a significant Time x Treatment interaction would indicate statistically significant impact of the mediation program on the outcomes over time.

Due to different distributions of the outcomes, we used different approaches to estimate the modeled effects. For those outcomes that are assumed to be continuous, we applied linear mixed models using SAS PROC MIXED. These outcomes include family communication, family conflict, family cohesion, and delinquency rates from both parent and child report. For academic performance, which is a dichotomous outcome, we applied a binary logistic generalized linear model, with the Generalized Estimation Equation (GEE) approach. Similarly for the ordinal outcomes (alcohol and marijuana use intentions, past month alcohol and marijuana use), we used cumulative logistic generalized linear models (again with GEE) to test the effects of interest. These generalized linear models were implemented in SAS PROC GENMOD. In total, 111 families completed the baseline survey, 86 the 6-week survey, and 97 the 12-week survey. Within-wave missing data in the outcomes is minimal, ranging from 1% to 3.6%. The above procedures handle missing data by using full-information estimation.

Results

Fidelity and Acceptability of Mediation

One hundred and thirty-eight mediation sessions were conducted: 9 families completed one session, 15 families completed two sessions, and 33 families completed three sessions. Post-mediation feedback forms are available for 105 (76%) of the mediation sessions that were conducted, and 48 of the 57 intervention families completed at least one feedback form.

Based on feedback from the first mediation, the sessions were generally conducted in a way that was consistent with the training manual in that most participants “strongly agreed” that the mediator did not take sides (child: 81%; parent: 95%), treated them with respect (child: 98%; parent: 98%), seemed to really understand their problems (child: 83%; parent: 93%), treated them as an equal participant (child: 93%; parent: 98%), and encouraged them to make their own decisions (child: 76%; parent: 95%) during the session that they had just completed. In terms of satisfaction with the session, 64% of children and 85% of parents indicated that they definitely planned to use the skills they learned at home, and 64% of children and 93% of parents indicated that they were very satisfied with the mediation session they had just attended.

Effects of Family Mediation

Table 2 compares the means of the outcomes of the intervention group against the control group at each of the three time points. Primary outcomes related to family functioning, based on both child and parent reports, include family communication, family conflict, and positive family cohesion. Secondary outcomes are related to past month child behaviors including school grades (combined parent and child report), marijuana use (child report), alcohol use (child report), substance use intentions (child report) and delinquency (separate child and parent report). In general, there was a slight improvement for the intervention group from baseline to the 6 week follow-up for most of the outcomes, followed by a return to the initial levels at the 12 week follow-up, whereas the control group generally remained steady over the same period. However, the slight trends of short term improvements in the intervention group were not significantly different from the pattern observed with the control group for most of the primary and secondary outcomes. The only statistically significant interaction effect involved the parent report of child delinquency ($F(2, 179) = 3.62, p < .05$). For the intervention group, the percentage of delinquency items endorsed was 42% at baseline, but dropped to 27% at 6 weeks and 25% at 12 weeks. In comparison, the percentage of delinquency items endorsed by parents in the control group remained about the same, starting at 39% and dropping slightly to 35% at 6 weeks and 34% at 12 weeks.

Discussion

The goal of this study was to inform both scientific knowledge and clinical practice by evaluating the effectiveness of parent-child mediation for improving family functioning and reducing child problem behaviors. An ongoing challenge for the field of prevention is that even when communities are interested in implementing empirically supported programs, they are often hindered from doing so by lack of available resources (Flay et al., 2005; Spoth et al., 2015). As a result, programs for youth are typically not applied on a scale sufficient to achieve a clear public health impact (Spoth, Greenberg, & Turrissi, 2008). If found to be effective, a major advantage of parent-child mediation programs is that they are brief, delivered by community volunteers, require relatively few resources for training and delivery, and can be implemented in a wide range of settings.

Evaluations of parent-child mediation programs have typically found that families report high levels of satisfaction with the program (Stahler et al., 1990), but the use of pre-

experimental designs, small sample sizes, and weak assessment batteries have limited the conclusions that can be drawn about whether these programs significantly improve family functioning (Beck & Sales, 2001). Further, little is known about whether participating in parent-child mediation, to the extent that it improves family functioning, might result in positive changes in the child's behavior in areas such as academic performance, substance use, and delinquency. Given that involvement in prolonged or highly negative parent-child conflicts (Moed et al., 2015), and the use of aggressive or avoidant conflict resolution styles (Rubenstein & Feldman, 1993), are associated with higher levels of adolescent problem behavior, learning effective strategies for resolving such conflicts may have these types of secondary gains.

Parent-child mediation programs are not designed to simply resolve a specific family dispute, but to help families build trust and communicate better so that they can resolve future disputes themselves (Van Slyck et al., 1992). However, families referred to parent-child mediation because of escalating problems may tend to improve on their own over time, even without mediation, and this possibility has not been tested in previous evaluations. Based on this pilot randomized controlled trial, there is little evidence that families who participate in parent-child mediation have better outcomes in terms of family functioning and child problem behaviors compared to families who do not participate in mediation. We acknowledge, however, that we used a more rigorous design than is typically applied to evaluate this intervention approach and had a relatively small sample size that limited statistical power.

As a result, we conducted a secondary analysis to examine the effects of parent-child mediation in a way that is more consistent with the existing literature. This analysis included only families in the intervention group, but it involved essentially the same modeling approach as used for the main analyses. The results indicated that families receiving mediation showed statistically significant or marginally significant improvements from baseline to the 6-week follow-up on most of the outcomes we examined: family conflict (child report: $p = .02$; parent report: $p = .004$), family communication (child report: $p = .03$; parent report: $p = .13$), family cohesion (child report: $p = .09$; parent report: $p = .02$), delinquency (child report: $p = .009$; parent report: $p = .007$), marijuana use ($p = .08$), and alcohol use ($p = .04$). These results are consistent with results of previous evaluations showing that families who participate in mediation tend to improve over time when improvement is not evaluated relative to a control group (Lam, Rifkin, & Townley, 1989; Merry & Rocheleau, 1985; Morris, 1983; Van Slyck et al., 1992). However, it is also important to note that these gains typically attenuated by the 12-week follow-up, suggesting that whatever short-term improvements are experienced by families participating in parent-child mediation may be relatively short-lived.

Findings from this evaluation should be interpreted in light of several study limitations. Our results are based on a single community-based agency, serving a predominantly low-income Hispanic community, and primarily involved mother-child mediations. As such, results may not be generalizable to other settings or mediations involving fathers. Although our sample size was larger than most prior evaluations, we did not have sufficient statistical power to examine moderators of program effects. This evaluation is also limited by its exclusive

reliance on self-report data, although a notable strength of the study is that we were able to assess both parent- and child-reported family functioning. Future evaluations may want to consider complementing self-report measures, such as those used in the present study, with other data sources such as observations of family functioning and administrative records (e.g., school, law enforcement) to assess child problem behaviors. Finally, although there were no significant differences between the intervention and control groups on any of the study variables at baseline, it is nonetheless a limitation that randomization to condition occurred prior to the baseline assessment.

Given that this is the first randomized controlled trial of a parent-child mediation program, additional rigorous evaluations are needed before firm conclusions can be drawn about the effectiveness of this intervention model. As part of this future work, it would be useful to examine whether some families and children benefit more or less from parent-child mediation. For example, there is evidence from meta-analyses of parent training for child behavioral problems that this type of brief intervention is less effective for families dealing with more severe child behavior problems (Reyno & McGrath, 2006) and those who are more economically disadvantaged (Lundahl et al., 2006; Reyno & McGrath, 2006). In addition, little research has focused on understanding the mediation process itself. It would be informative to examine how the number of mediation sessions completed, mediator-family dynamics during the session, level of parent-child adherence to the mediation agreement, and other factors might influence the effectiveness of this intervention in improving family functioning and reducing child problem behaviors. For example, the children in this study reported much lower satisfaction with the initial mediation session and intentions to use the skills they learned at home compared to their parents. Prior research in the area of procedural justice indicates that children who are dissatisfied with the processes through which their families resolve conflict or engage in decision-making are more likely to engage in deviant behavior (Fondacaro et al., 1998) and affiliate with deviant peer groups (Stuart et al., 2008). This suggests that an important direction for future research on parent-child mediation is to examine whether increasing child satisfaction with the first mediation session may enhance program effectiveness.

Conclusion

Although parent-child conflict is common during adolescence (Laursen et al., 1998), it may be particularly protracted or severe in families of adolescents who are exhibiting problematic behaviors such as academic disengagement, defiance of authority, delinquency, and substance use. Leaving parent-child conflict in these families unresolved, or using ineffective strategies to resolve the conflict, may not only do little to improve family functioning, but also may actually serve to escalate the child's externalizing behavior and affiliation with deviant peers (Moed et al., 2015; Stuart et al., 2008). Parent-child mediation, designed to resolve or manage family disputes and improve family functioning (Smith, 1995), is offered through community mediation centers in the U.S. This type of brief, low-cost intervention could be potentially useful and translate into large public health benefits, even if its effects are rather modest (Biglan & Taylor, 2000).

This study is the first rigorously conducted randomized controlled trial evaluating the effectiveness of parent-child mediation. Families who participated in parent-child mediation showed modest improvements in family functioning and child problem behaviors over a 6-week period. However, intervention families did not improve significantly more than control group families, and their positive gains tended to erode by the 12-week follow-up. Additional rigorous evaluations involving larger samples and longer follow-up periods are needed before firm conclusions can be drawn about the effectiveness of parent-child mediation programs. Further, important directions for future research on this topic include examining whether some families may benefit more or less from mediation and how this intervention approach might be enhanced to improve its effectiveness.

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Table 1

Sample baseline background characteristics

Variable	Child		Parent	
	Intervention (<i>n</i> = 57)	Control (<i>n</i> = 54)	Intervention (<i>n</i> = 57)	Control (<i>n</i> = 54)
Age	M = 14.93 (<i>SD</i> = 1.54)	M = 15.00 (<i>SD</i> = 1.53)	M = 42.25 (<i>SD</i> = 7.46)	M = 40.87 (<i>SD</i> = 7.46)
Gender				
Male	49.12%	61.11%	5.26%	12.96%
Female	50.88%	38.89%	94.74%	87.04%
Race/ethnicity				
Hispanic	72.22%	74.51%	70.37%	74.51%
Non-Hispanic African American	24.07%	23.53%	25.93%	25.49%
Non-Hispanic White	0%	1.96%	0%	0%
Asian/Other	3.7%	0%	3.7%	0%
Parental education				
< high school graduate	–	–	45.61%	32.08%
High school graduate	–	–	22.81%	32.08%
At least some college	–	–	31.58%	35.85%
Child living arrangement				
Mother and father	29.82%	38.89%		
Parent + stepparent	7.03%	9.26%	–	–
One parent household	57.89%	50%	–	–
Not living with a parent	5.26%	1.85%	–	–
Service use, past 30 days	–	–	22.81%	22.22%

Table 2

Comparison of Intervention and Control Groups on Primary and Secondary Outcomes at Baseline, 6-Week Follow-Up, and 12-Week Follow-Up

Variable	Intervention group			Control group		
	Baseline Mean (SD) (n = 57)	6-week Mean (SD) (n = 42)	12-week Mean (SD) (n = 50)	Baseline Mean (SD) (n = 54)	6-week Mean (SD) (n = 44)	12-week Mean (SD) (n = 47)
Primary Outcomes						
Family communication (child report)	3.46 (0.96)	3.73 (0.84)	3.59 (0.87)	3.43 (0.90)	3.43 (0.87)	3.47 (0.77)
Family communication (parent report)	3.87 (0.70)	3.99 (0.64)	3.95 (0.72)	3.70 (0.79)	3.73 (0.81)	3.94 (0.77)
Family conflict (child report)	2.10 (0.89)	1.89 (0.74)	1.92 (0.77)	2.27 (0.96)	2.05 (0.69)	1.96 (0.80)
Family conflict (parent report)	2.04 (0.72)	1.76 (0.68)	1.72 (0.65)	2.20 (0.79)	1.95 (0.71)	2.01 (0.70)
Family cohesion (child report)	3.63 (1.07)	3.85 (0.89)	3.71 (0.96)	3.55 (1.17)	3.63 (1.06)	3.59 (1.08)
Family cohesion (parent report)	3.64 (0.87)	3.88 (0.66)	3.85 (0.85)	3.74 (0.72)	3.61 (0.96)	3.89 (0.68)
Secondary Outcomes (past month)						
Grades of C or worse (combined)	0.77 (0.43)	0.66 (0.48)	0.67 (0.47)	0.70 (0.46)	0.55 (0.50)	0.70 (0.47)
Marijuana use (child report)	2.60 (2.11)	2.05 (1.79)	2.52 (2.10)	1.87 (1.61)	1.89 (1.82)	1.94 (1.90)
Alcohol use (child report)	1.51 (1.03)	1.29 (0.81)	1.54 (1.13)	1.42 (1.01)	1.30 (0.82)	1.35 (1.04)
Substance use intentions (child report)	0.96 (0.90)	0.79 (0.84)	1.02 (0.92)	0.62 (0.79)	0.77 (0.89)	0.74 (0.85)
Delinquency (child report)	0.33 (0.23)	0.22 (0.23)	0.22 (0.20)	0.29 (0.22)	0.22 (0.22)	0.24 (0.22)
Delinquency (parent report) ^a	0.42 (0.28)	0.27 (0.28)	0.25 (0.26)	0.39 (0.28)	0.35 (0.26)	0.34 (0.26)

Notes.

^aThis is the only outcome with a significant ($p < .05$) Time $\times$ Treatment interaction effect