



# The Integration of Family and Group Therapy as an Alternative to Juvenile Incarceration: A Quasi-Experimental Evaluation Using Parenting with Love and Limits

ELI A. KARAM\*  
EMMA M. STERRETT\*  
LYNN KIAER†

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*The current study employed a quasi-experimental design using both intent-to-treat and protocol adherence analysis of 155 moderate- to high-risk juvenile offenders to evaluate the effectiveness of Parenting with Love and Limits® (PLL), an integrative group and family therapy approach. Youth completing PLL had significantly lower rates of recidivism than the comparison group. Parents also reported statistically significant improvements in youth behavior. Lengths of service were also significantly shorter for the treatment sample than the matched comparison group by an average of 4 months. This study contributes to the literature by suggesting that intensive community-based combined family and group treatment is effective in curbing recidivism among high-risk juveniles.*

*Keywords: Community-based; Juvenile offender; Recidivism; Attrition rates; Family therapy; Group therapy; Fidelity measures; Rejudication; Parenting with Love and Limits; Propensity score matching; Intervention; Delinquency; Program effectiveness*

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## **FAMILY THERAPY RESEARCH: TWO PATHWAYS FOR INTERVENTION FOR JUVENILE OFFENDERS AND THEIR PARENTS**

The use of community-based interventions has grown in the last two decades as more states seek alternatives to incarceration or other costly placements for juvenile offenders (Darwiche & de Roten, 2014; Sexton & Datachi, 2014; Von Sydow, Retzlaff, Beher, Haun, & Schweitzer, 2013). A large and robust evidence base now also supports the effectiveness of systemic interventions for conduct disordered adolescents (Sprenkle, 2012). Historically reviewing effectiveness research, the family therapy profession has classified evidence-based practice (EBT) with oppositional defiant and conduct disordered youth into two distinct categories: (1) multiple family groups and (2) traditional family therapy (Sprenkle, 2002, 2012).

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\*University of Louisville, Louisville, KY.

†Hornby Zeller Associates, LLC, Troy, NY.

Correspondence concerning this article should be addressed to Eli A. Karam, Ph.D., Associate Professor, University of Louisville/Kent School of Social Work/Family Therapy Program, Louisville, KY 40292.  
E-mail: eli.karam@louisville.edu

## Multiple Family Groups

Multiple family groups (MFG) is a modality facilitated by a treatment provider and includes youth, parents or caregivers, and other youth and family members with shared experiences (Nahum & Brewer, 2004). The goal of this modality is to bring families together to interact, build empathy, and ultimately produce change in family systems. Within the groups, families work on improving community safety, improving supervision of youth, teaching offenders the concept of delayed gratification, developing empathy, instilling values of hope, and hard work. A group context is also beneficial for hearing stories, sharing with others, developing empathy for others, expressing emotions, and receiving practical feedback. Moreover, groups are an efficient method by which families can share growth and progress with others; in this way, both teens and parents are role models and leaders for peers (Marshall & Burton, 2010). Some activities in groups include homework, didactic instruction, videos, discussion, and role-modeling activities (Rich & Longo, 2003).

There is an emerging body of research that demonstrates the efficacy and effectiveness of a MFG approach with populations related to juvenile offenders (Lucksted, McFarlane, Downing, & Dixon, 2012). Multiple family groups have been employed to address numerous populations, including the homeless (Davey, 2004), urban children with conduct difficulties (McKay et al., 2011; McKay, Harrison, Gonzales, Kim, & Quintana, 2002), persons with schizophrenia (Kaslow, Broth, Smith, & Collins, 2012; McFarlane, 2002), juvenile firestarters (Barreto, Boekamp, Armstrong, & Gillen, 2004), and dually diagnosed adolescents (Kaslow et al., 2012; Kymissis, Bevacqua, & Morales, 1995).

## Family Therapy

A number of community-based, family therapy treatment models have been used as front-end, diversionary, or probation interventions with sustained clinical outcomes and real-world demonstration of effectiveness. Among these “gold standard” empirically supported approaches, based on criteria developed by the American Psychological Association Task Force on the Promotion and Dissemination of Psychological Procedures (Chambless et al., 1998) and the Office of Juvenile Justice and Delinquency Prevention Blueprints for Violence Prevention (Elliott, 1998), are Functional Family Therapy (FFT) (Sexton & Turner, 2010), Multi-Systemic Therapy<sup>®</sup> (MST) (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009), Multidimensional Treatment Foster Care<sup>®</sup> (MTFC) (Chamberlain, Saldana, Brown, & Leve, 2010), Multidimensional Family Therapy (MDFT) (Liddle, 2014), and Brief Strategic Family Therapy (BSFT) (Szapocznik, Hervis, & Schwartz, 2003).

Although each approach uses model-specific language and is unique in its organization, there are core similarities between these four treatments (Sprenkle, 2012). All have expanded systemic foci and tend to be strength-based with the goal of empowering parents and teens to affect changes in their own lives. They focus upon improving parent-child communication and relationships, and especially upon parental functions that include monitoring, limit-setting, and discipline. These intermediate goals are aimed toward mitigating family risk factors and reducing antisocial behavior resulting in arrest, detention, and court involvement.

In their recent extensive review, Henggeler and Sheidow (2012) concurred that community-based treatment programs that incorporate aspects of these two components (MFG and family therapy) are superior to institution-based programs. Although some youth who have complex mental health treatment needs may require out-of-home treatment, many more can be appropriately served in the community, where youth behavior can be addressed in its social and familial context.

## PARENTING WITH LOVE AND LIMITS: AN INTEGRATION OF FAMILY THERAPY AND MULTI-FAMILY GROUPS

Responding to the family therapy profession's call to integrate multi-method research approaches in bridging the gaps among theory, research, and practice, the Parenting with Love and Limits (PLL) model was derived from a "bottom-up" methodology (Sells, Smith, & Sprenkle, 1995). After reviewing hours of video-taped group and family therapy sessions, PLL model developer Scott Sells implemented Greenberg's (1984) task analysis to analyze key in-session change events to specify the processes used by parents and difficult teens to resolve their problems. The PLL model targets juvenile offenders between the ages of 12 and 18 who have serious emotional and behavioral problems including issues with aggression, drug or alcohol abuse, sexual offending, severe disrespect, conduct disorders, running away, and/or chronic truancy. As a manualized program (Sells, 1998, 2000, 2002; Sells et al., 1995), PLL has been replicated in 16 states and in Holland, is considered promising in the OJJDP Model Programs Guide (<http://www.ojjdp.gov/mpg/>), and is currently listed on SAMHSA's National Registry of Evidence-Based Programs (<http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=45>).

Another distinctive feature that distinguishes PLL from the four other "gold standard" family therapy-based ESTs is the inclusion of the multiple family group (MFG) approach to treatment delivery. Most evidence-based treatments for juvenile offenders, alternatively, work intensively with single family systems in their natural environments (Henggeler & Sheidow, 2012). PLL combines a 6-week parenting group program with a minimum of six intensive family therapy sessions for delinquent youths and their parents that are also 2 hours in duration or the equivalent of twenty-four 1-hour sessions when group and family therapy are combined together. As Table 1 illustrates, during the Intensive Phase, each of the six PLL Parent and Youth Group Modules are led by two group facilitators who lead a small group of parents, caregivers, and their teenagers (no more than 4–6 families with no more than 12 people total in the group) in six classes, each two hours long. Two co-facilitators are needed, as the program uses breakout groups. Parents and teens meet together collectively as a group during the first hour and then break into separate groups during the second hour. The rationale for these breakouts is that oftentimes both parents and teens need to meet separately to address issues that they cannot resolve within the collective group, such as venting frustrations with one another or developing effective consequences.

The PLL MFG component provides parents with a detailed six-module treatment manual on curtailing their teenagers' emotional and behavioral problems. To assist in intervention delivery, workbooks are available for parents and their children. Each group facilitator delivers the program in the same manner by following a published manualized leader's guide (Sells, 2002). The PLL Group model provides a step-by-step roadmap on how to stop oppositional defiant or conduct disorder behavior problems and uses extensive role-playing and modeling throughout the six class modules:

- Group 1: Why Juveniles Have Serious Emotional and Behavioral Problems
- Group 2: How to Stop Button-Pushing
- Group 3: How to Create a Contract
- Group 4: Role Play Aftercare Delivery
- Group 5: Troubleshooting Aftercare Plan
- Group 6: How to Restore Lost Nurturance

During the 6 weeks of PLL Group Therapy, in Stage 1, the family simultaneously attends 2 hours of group and 2 hours of PLL family therapy conducted at the family's home or

TABLE 1  
*The Parenting with Love and Limits (PLL) Model*

	Stage I: Intensive Month 1 and 2	Stage II: Transition Month 3	Stage III: Maintenance Month 4, 5, and 6
Treatment Components	<ul style="list-style-type: none"> <li>• PLL Motivational Interviewing: One to two sessions lasting on average one hour with Youth and Family</li> <li>• Pretest Administered: CBCL</li> <li>• PLL Parent &amp; Youth Group Modules: lasting 2 hours on average per group:               <ul style="list-style-type: none"> <li>○ Group 1: Why Juveniles Have Serious Emotional and Behavioral Problems</li> <li>○ Group 2: How to Stop Button-Pushing</li> <li>○ Group 3: How to Create a Contract</li> <li>○ Group 4: Role Play Aftercare Delivery</li> <li>○ Group 5: Troubleshooting Aftercare Plan</li> <li>○ Group 6: How to Restore Lost Nurturance</li> </ul> </li> <li>• PLL Family Therapy—Phases I &amp; II: Setting the Terms for Therapy and Creating the First Contract: Four family therapy sessions lasting 2 hours each or the equivalent of eight traditional 1-hour sessions. Conducted in the home or in an office setting</li> </ul>	<ul style="list-style-type: none"> <li>• No More PLL Group Modules</li> <li>• PLL Family Therapy- Phases III &amp; IV: Dress Rehearsals, Troubleshooting, and Wound Work if needed: Two or more sessions lasting 2 hours in duration or the equivalent of four 1-hour sessions conducted in the home or in an office setting.</li> <li>• Wraparound services in the community are identified—Part-time case manager that works alongside the PLL therapist helps arrange and execute community services such as job and/or vocational placement, school reintegration, medication management, and mentoring</li> <li>• Posttest Administered: CBCL</li> </ul>	<ul style="list-style-type: none"> <li>• Relapse Prevention: Calls back to family every 30 days for 3 months post-graduation from PLL to monitor aftercare plan progress and address any obstacles</li> <li>• Refresher Tune-Up Sessions: Additional family therapy sessions as needed if relapse.</li> </ul>

*Note.* CBCL = Child Behavior Checklist.

office settings. The rationale is that the psychoeducational tools received in group could then immediately be integrated by the family therapist into the particular family. For example, in Group 2, parents and adolescents receive concrete tools in de-escalating parent-teen conflict in the form of anti-button-pushing strategic directives such as “exit and wait,” “short and to the point,” or “secret signs.” The PLL family therapist then takes these anti-button-pushing tools and help the parents customize them into a behavioral contract of when, where, and how these tools would be used if the target problem behavior of the adolescent is disrespect, for example. In this way, psychoeducational tools and family therapy are integrated together.

Like the MFG component, the PLL family therapy modules were also manualized by integrating core components of both structural (Minuchin, 1974) and strategic (Haley, 1987) family therapy. In Stage 1 (*Intensive*) of the family therapy, the PLL therapist takes one to two sessions to establish with the family if an inverse hierarchy exists in the system, with the child rather than the parents being in charge of the household. The sessions end with the family and therapist selecting which problem behaviors of the adolescent will be targeted. In phase 2, the therapist explains feedback loops to the family to reveal what are called “unhealthy undercurrents” or drivers, that if unaltered will keep the adolescent problem symptoms intact. The therapist integrates the tools that the family has learned in Groups 1–3 into a behavioral contract using strategic directives to reestablish lost parental authority, realign the hierarchy, and restore lost nurturance between parent and child.

Once the behavioral contract is written and typed out, the therapist integrates the tools from Groups 4 and 5 to troubleshoot with the child and parents barriers to the successful implementation of the contract in Stage 2 (*Transition*) of PLL. After troubleshooting is discussed, the therapist will then practice with the parents and teen extensive role plays on successfully implementing the contract. After several weeks of contract implementation the family comes back and evaluates the success of the contract on a scale of 0% to 100% (0% the contract not working at all to 100% the contract is working all the time). If the contract is self-rated by the majority of family members as 70% or less effective, the PLL Therapist will explore the constraints before attempting to lift each one. If the self-rating is above 70%, however, the family graduates and transitions into maintenance mode.

In Stage 3 (*Maintenance*), the therapist and family collaborate on a “red flags checklist” around areas of possible relapse. If relapse does occur, the family will be encouraged to come back for additional family sessions to get back on track as quickly as possible. PLL therapists continue with the family until the family has met all of the graduation requirements that consist of completing groups, family sessions, sufficiently complying with the contract in school or work, and remaining out of trouble with the law. PLL therapists maintain periodic phone contact and will arrange for meetings, if needed, to resolve new issues or make modifications to the original behavioral contract. PLL provides 30-, 60-, and 90-day call-backs after the case has been closed to ensure treatment progress and provide a tune-up session if needed.

## EVALUATING FAMILY-BASED INTERVENTIONS WITH JUVENILE OFFENDERS

While randomized clinical trials (RCTs) have been firmly established as the primary methodology in intervention research in psychotherapy, the rigorous controls associated with this type of research may not be practical in many “real-world” environments like the juvenile justice system. Outside stakeholders (including government agencies, insurance companies, and other third party payers) may be more concerned with “effectiveness” than “efficacy” (Chambless & Hollon, 1998; Sprenkle, 2012). In addition to rigorous RCT studies as a way to establish effective family-based interventions, alternative types of research,

including quasi-experimental designs, inform existing programs and services by providing additional context to “what works” for this difficult population of juvenile offenders. Instead of putting all our methodological eggs into the RCT basket, Lipsey (2009) contends researchers should be ensuring that the many other rigorous, scientific methodologies are implemented to increase our understanding of family-based interventions for juvenile justice system populations.

Evaluated as either a front-end alternative to placement for high-risk youth in the community or with juvenile offenders on probation after reentry from detention, PLL has established a promising, preliminary research record over the past several years. Using a quasi-experimental design, Winokur-Early and colleagues (2013) found youth completing PLL had lower rates of reoffending than those receiving standard aftercare, with statistically significant differences found for subsequent rates of juvenile readjudication. Lengths of service were significantly shorter for the treatment sample than for the matched comparison group by an average of 2 months, suggesting that the intervention can serve more clients per year than standard aftercare while reducing costs associated with residential commitment. The results of a 2003 pilot study conducted with parents and teens, referred by juvenile court and treated for substance abuse and a co-morbid diagnosis of either oppositional defiant or conduct disorder, indicated that a parent’s participation in their teen’s treatment of substance abuse and other severe behavioral problems did have a major positive impact (Sells, Smith, Rodman, & Reynolds, 2003). Research also demonstrates that PLL helps parents in addition to juveniles. For example, in a more recent study, compared with the control group, the PLL treatment group significantly improved parents’ readiness to change and resulted in significantly lower recidivism rates (16% PLL, 55% control) over a 12-month follow-up period (Sells, Winokur-Early, & Smith, 2011).

## CURRENT STUDY

The purpose of this quasi-experimental study was to build on previously mentioned PLL research by testing several hypotheses about the impact of PLL on individual, family and larger systemic outcomes on a population of diverse (70% African American, 30% Caucasian) juvenile offenders and their parents. The high percentage of African American youth in the sample is noteworthy because, due to a variety of factors, including a higher likelihood of living in poverty and bias in the juvenile justice system, African American youth have disproportionately high incarceration rates compared to youth in the United States in general (Alexander, 2012). Upon completion of the PLL program, it is hypothesized that: (a) there will be a high level of parent engagement, as evidenced by a graduation rate of at least 70%; (b) PLL youth will demonstrate significant improvement in mental and behavioral health; (c) PLL will decrease recidivism rates for juvenile offenders in the year following treatment as compared to a matched control group receiving treatment as usual on rearrest, readjudication, and residential commitment or incarceration; and (d) PLL length of service will be shorter than standard community mental health or probation cases without an adverse impact on recidivism rates using both a protocol adherence and intent-to-treat analysis.

## METHOD

### Participants

The treatment sample includes 155 youth between the ages of 14 to 18 (70% African American, 30% Caucasian; 74% male) referred to PLL between April 2009 and December

2011 due to their involvement in the Champaign County, Illinois, juvenile justice system. The youth averaged 15.4 years at the time of the precipitating offense, with 3.5 prior police contacts and 1.6 of those arrests leading to charges. Violence or the threat of violence characterized the precipitating offense for 50% of the youth, and 26% were charged with theft. Half the youth were charged with a felony. In addition, the study includes a 155-member comparison group drawn from a population of non-PLL youth ( $n = 2,258$ ) in the juvenile justice system between January 2008 and December 2011 (see below for a description of the propensity score matching procedure used to match the treatment and comparison groups).

## Procedure

### *PLL Procedures*

Seeking cost-effective alternatives to traditional juvenile incarceration, the Champaign/Urbana County (Illinois) juvenile justice system introduced PLL as an alternative to residential commitment in April 2009. Between April 2009 and December 2011, eligible moderate- to high-risk juvenile offenders in Champaign/Urbana County ( $n = 155$ ) were assigned to receive PLL community-based services. The PLL Youth group did not receive other probation/treatment services while they were completing the PLL program. The exceptions were youth who were diagnosed with drug or alcohol dependence and required additional individual or group therapy at a local drug and alcohol treatment center. Clinicians administered the CBCL at intake and termination sessions. The treatment as usual (TAU) population received both probation and mental health services in the form of non-manualized psychotherapy. All youth in the TAU group were referred to local community mental health agencies that primarily used individual- or client-centered-based programming. For this study, data were drawn from a review of clinical and juvenile justice records.

### *Selection of Comparison Group*

Descriptive analyses comparing PLL youth and the juvenile offender population in Champaign County as a whole demonstrated statistically significant differences in demographics (percentage White = 70 for PLL youth vs. 59 for the juvenile offender population) and, more importantly, in characteristics that are traditionally associated with risk of reoffending (e.g.,  $M$  number of prior arrests = 3.5 for PLL youth vs. 2.3 for the juvenile offender population,  $M$  age at first offense = 14.5 for PLL youth vs. 15.6 for the juvenile offender population). Due to these differences, which precluded random selection of a comparison group, propensity score matching (PSM) was used to construct a comparison group of the same size as and having similar characteristics to the treatment group. PSM analyses allow for the identification of a control group that has similar characteristics to the treatment group as a whole, rather than a set of paired matches in which each pair shares a large number of characteristics (Rubin & Thomas, 2000).

In this study, PSM was based on demographic and juvenile justice data provided by Champaign County. Data were first organized by youth, and then by whether the youth was part of the treatment group or not. For those in the treatment group, a juvenile justice history at the time of the offense just prior to beginning PLL was constructed, using variables that are traditionally associated with risk of reoffending (See Table 2). Youth who enrolled twice in PLL were only included on their first enrollment. Those not in the treatment group could be matched to PLL youth at the time of any offense, and a juvenile justice history was similarly created for each youth at the time of each offense. However, to avoid having a youth appear twice in the control group, once a youth was selected for the control group, all other potential matches involving that youth were removed from the

TABLE 2  
*Final Sample Characteristics (N = 155 PLL Youth and N = 155 Comparison Youth)*

Matching variable	PLL N (%)	Comparison N (%)	Difference p-value
Race			
Black	108 (69.68)	112 (72.30)	.62
White	46 (29.68)	42 (27.10)	.62
Male	115 (74.19)	109 (70.30)	.45
Juvenile justice history			
Age at first offense	14.5	14.4	.39
Prior arrests	3.5	3.3	.66
Prior charges	1.6	1.4	.23
Greatest severity <sup>a</sup>	3	3.1	.93
Age at precipitating offense	15.4	15.3	.56
Domain of precipitating offense			
Violence <sup>b</sup>	77 (49.68)	82 (52.90)	.57
Property	7 (4.52)	6 (3.9)	.78
Theft	40 (25.81)	35 (22.60)	.51
Illegal possession	14 (9.03)	16 (10.30)	.70
Legal system violation	1 (0.65)	2 (1.30)	.56
School violation	1 (0.65)	3 (1.90)	.32
Sex offense	1 (0.65)	0	–
Mischief	9 (5.81)	8 (5.20)	.80
Precipitating offense			
Felony	78 (50.32%)	86 (55.5)	.36
Misdemeanor	71 (45.81%)	60 (38.70)	.21
Severity <sup>a</sup>	4	4	.87
Agency			
Urbana	39 (25.16%)	41 (26.50)	.80
Champaign	70 (45.16%)	73 (47.10)	.73
Rantoul	20 (12.90%)	17 (11.00)	.60
Sherif	12 (7.74%)	12 (7.70)	1

Note. PLL = Parenting with Love And Limits program.

<sup>a</sup>0 = Most Severe.

<sup>b</sup>Includes threats of violence.

pool of potential matches. In this way it was ensured that the comparison group consisted of 155 different individuals.

After the propensity score matching procedure was completed, no significant differences remained between the 155 PLL youth and the 155-member control group with regard to race, gender, or juvenile justice history (see Table 2). The lack of significance of the differences between these groups shows the effectiveness of the PSM procedure. While no method can eliminate the assignment bias inherent in any nonrandom assignment method, by including a large number of relevant variables in the propensity score matching procedure, assignment bias is greatly mitigated (Stuart, 2008).

## Measures

### *Child Behavior Checklist*

The Child Behavior Checklist (CBCL), a parent-report questionnaire, captures PLL's impact on the juvenile's behavioral and emotional problems. It has been one of the most widely used standardized measures for evaluating maladaptive behavioral and emotional problems in children and adolescents between the ages of 4 and 18 (Achenbach & Rescorla, 2001). The CBCL includes four broad-based scales: Externalizing, Internalizing, Social,



and Thought Problems, with the Externalizing scale being made up of two smaller subscales, Rule breaking and Aggressive behaviors, and the Internalizing Problems scale consisting of three smaller subscales, Anxious, Withdrawn, and Somatic subscales. In addition, the CBCL also includes three scales that correspond to DSM IV diagnoses, Attention, Oppositional Defiant, and Conduct Disorder subscales. Research on the CBCL suggests that the instrument exhibits high internal consistency (0.78–0.97) and interrater reliability (0.93–0.96), as well as high face, construct, and predictive validity (Nakamura, Ebesutani, Bernstein, & Chorpita, 2009). The measure demonstrated good internal reliability for the broad-based subscales in the current sample:  $\alpha = .92$  for the Externalizing subscale,  $\alpha = .91$  for the Internalizing subscale,  $\alpha = .82$  for the Social Problems subscale, and  $\alpha = .74$  for the Thought Problems subscale. In addition, the smaller subscales exhibited good internal consistency with alphas of .76 or above.

*Recidivism.* Recidivism was measured using data provided by Champaign County. For each police contact recorded (citation or arrest), the data included characteristics of the youth and of the specific offense, whether charges were formally filed, the disposition of the case, and whether the youth was committed.

## RESULTS

### Data Analysis

The analysis examined whether there were pre-post differences in mental and behavioral health for youth in the intervention group, as well as differences in recidivism between the intervention and comparison groups. Analyses comparing the two groups included both a protocol adherence model, which focuses on the efficacy of the treatment by considering only the graduates, and an intent-to-treat model, which includes all participants admitted to services (Have et al., 2008). The intent-to-treat approach was adopted to help reduce bias that occurs when youth with more difficult problems drop out or are rejected due to noncompliance.

### Parent Engagement and Graduation Rates

One of the primary goals of this study was to determine whether PLL effectively engaged parents or caregivers in their child's treatment. Prior research cited that juveniles will return to delinquent acts if their parents or caregivers remain unchanged in consistent limit-setting, rebuilding emotional attachments, and improved communication (Williams & Chang, 2000). Of the 155 cases admitted to PLL, 111 (72%) families completed services. In order to graduate from PLL, the youth/family must: (a) attend and participate in at least five MFG sessions; (b) attend and participate in at least six family therapy sessions; (c) remain at home with no curfew violations or running away; (d) remain in school with no reports of truancy or failing grades; and (e) stay out of trouble with no reports of law violations or problems at home. And of these graduates, the largest proportion were African American youth (69.7%) as compared with White (29.7%) youth. It is important to note that none of the parents and youth were court-ordered to PLL treatment but participated voluntarily. Therefore, a 72% completion rate is noteworthy.

We conducted missing data analysis to determine whether any participant variables predicted dropout. Chi-squared tests of independence determined whether referral type or precipitating offense domain had a significant impact on graduation rates. While referral type had no discernible effect on graduation rates, the domain of the precipitating offense did have an impact. Importantly, youth with low-level charges (e.g., school violation) were less likely to graduate from PLL ( $p < .01$ ).

## Youth Mental and Behavioral Health

Of the caregivers of the 111 graduates, 105 completed pre- and posttest administrations of the CBCL. The CBCL data were analyzed using paired *t*-tests, with the Bonferroni correction to account for multiple related subscales, principally because this analysis was easily understood by the stakeholders, and because it is extremely conservative. The CBCL consists of 11 subscales. Therefore, to achieve an overall risk of Type I error of 0.05, the Bonferroni correction requires the *p*-value for each subscale to be less than  $0.05/11 = 0.0045$ , thereby guaranteeing that the sum of the Type I errors is less than 0.05. As the *p*-value for all subscales is less than 0.0045, there was no reason to reanalyze the data using more sophisticated methods. The results are shown in Table 3. Consistent with our hypotheses, participants evidenced decreases in scores on all eleven CBCL difficulties subscales, with the largest differences in the areas of rule breaking ( $t = 6.21, p < .0001$ , one-tailed), aggression ( $t = 5.56, p < .0001$ , one-tailed), conduct disorder behaviors ( $t = 6.67, p < .0001$ , one-tailed), attention problems ( $t = 5.59, p < .0001$ , one-tailed), and oppositional defiant behavior ( $t = 6.73, p < .0001$ , one-tailed). Effect sizes for these results ranged from small (0.25) to medium (0.58).

## Recidivism Rates

The current study hypothesized that PLL would significantly decrease recidivism rates in the year following treatment as compared to a matched comparison group with respect to subsequent police contacts (citations or arrests), formal charges, readjudication, and recommitment. The Champaign Department of Juvenile Justice defines recidivism as any subsequent juvenile adjudication or adjudication withheld, within 1 year of program completion. The data were examined using both a protocol adherence approach, which limits the treatment group to those subjects who completed the full PLL program and met the graduation criteria ( $n = 111$ ), and an intent-to-treat approach, which considers the full treatment group, all youth enrolled in PLL ( $n = 155$ ). The data provided by Champaign County included records of each police contact (youth was issued a citation or arrested), and the extent to which each contact led to additional penetration into the legal system: whether charges were filed, whether the youth was adjudicated delinquent, and whether the youth was securely confined as opposed to being placed on probation. This permitted a more nuanced analysis of recidivism than adjudication alone.

TABLE 3  
*Pre-Postdifferences in Child Behavior Checklist (CBCL) scores in the Treatment Group (n = 105)*

	Pretest		Posttest		t-test			Effect size Cohen's <i>d</i>
	Mean	SD	Mean	SD	<i>t</i>	<i>df</i>	<i>p</i>	
Internalizing subscales								
Anxious	4.06	4.51	2.97	3.22	3.26	104	.0007	-0.28
Withdrawn	3.87	3.17	2.69	2.67	4.41	103	<.0001	-0.42
Somatic	2.50	3.39	1.77	2.31	2.71	104	.0040	-0.25
Externalizing subscales								
Rule breaking	9.04	5.50	6.47	4.57	6.21	104	<.0001	-0.51
Aggressive	11.50	7.55	8.38	6.46	5.96	103	<.0001	-0.45
Social problems	3.38	3.68	2.50	2.74	3.15	102	.0011	-0.27
Thought problems	3.10	3.40	2.14	2.51	3.74	103	.0001	-0.32
Attention problems	7.08	4.23	5.39	3.56	5.59	103	<.0001	-0.43
Oppositional/Defiant	5.22	2.69	3.80	2.41	6.73	104	<.0001	-0.56
Conduct disorder	9.73	6.04	6.52	5.00	6.68	104	<.0001	-0.58

Using the protocol adherence approach, the results are quite encouraging, as shown in Table 4. The treatment group outperformed the comparison sample with statistical significance on every measure except one. Police contact rates (youth received a citation or was rearrested) were significantly lower for PLL youth, 36.9% compared to 51.0% for treatment as usual (a 28% reduction in risk), and the results were stronger when considering only felony contacts, 18.9% and 28.4%, respectively (a 33% reduction in risk). Not all police contacts lead to formal charges, but charge rates were also significantly lower for PLL youth, 19.9% and 32.9%, respectively (a 40% reduction in risk). Although felony charge rates were also lower for PLL youth compared to the comparison group, 15.3% and 21.3%, respectively (a 28% reduction in risk), the difference was not statistically significant.

There were also significant differences in adjudications between the intervention and comparison groups, 12.6% and 21.3%, respectively (a 41% reduction), as well as in felony adjudications, 9% and 16.1%, respectively (a 44% reduction). Adjudications are the clearest indication that a youth has committed a crime, and most formal definitions of recidivism consider only adjudications. Finally, slightly less than 2.7% of the PLL youth were incarcerated as compared with 6.5% in the comparison group.

Using the intent-to-treat model ( $n = 155$ ), recidivism rates were also lower for PLL youth than for the matched comparison group. Specifically, youth admitted to PLL had significantly fewer police contacts compared to youth in the comparison group ( $t = 1.83$ ,  $p = .03$ , risk reduction 20%), and the differences in rates for charges and adjudications exhibited trends toward significance, 25.2% versus 32.90% ( $t = 1.51$ ,  $p = .07$ , risk reduction 23%) and 15.5% versus 21.30% ( $t = 1.32$ ,  $p = .09$ , risk reduction 27%), respectively (Table 5).

TABLE 4

*Treatment and Comparison Group Outcomes Within 1 Year of Completion: Protocol Adherence (n = 111)*

	Recidivism rate		Fisher's exact test	Effect size
	PLL (%)	Control group (%)	<i>p</i>	Relative risk (%)
Contacts	36.90	51.00	.02	72.4
Felony contacts	18.90	28.40	.051	66.5
Charges	19.80	32.90	.01	60.2
Felony charges	15.30	21.30	.14	71.8
Adjudications	12.60	21.30	.046	59.2
Felony adjudications	9.00	16.10	.06	55.9
Incarcerations	2.70	6.50	.13	41.5

TABLE 5

*Recidivism: Intent-to-Treat Model (All PLL Youth)*

Outcomes	PLL (%)	Matched control group (%)	Fisher's exact test <i>p</i> -value	Relative risk (%)
Contacts	40.6	51.0	.04	79.70
Felony contacts	23.9	28.4	.22	84.05
Charges	25.2	32.9	.08	76.48
Felony charges	20.6	21.3	.50	96.93
Adjudications	15.5	21.3	.12	72.77
Felony adjudications	12.3	16.1	.21	76.40
Incarcerations	3.9	6.5	.22	60.00

## Length of Service

The final research question hypothesized that successful family engagement would decrease overall length of service without a negative impact on recidivism rates and the inherent risks that come with over monitoring and long lengths of stay. The findings support this hypothesis. The overall PLL lengths of service were much shorter at 89.1 days (3 months) versus standard community mental health treatment at 210 days (7 months) and probation services at 600 days (20 months) as reported averages in Champaign County. In addition, as described above, PLL participants achieved recidivism rates that were significantly lower than the control group in according to multiple measures.

## Post hoc Dosage–Response Analysis

After completing the intent-to-treat ( $n = 155$ ) and protocol adherence ( $n = 111$ ) analysis of the recidivism data, the question arose, at what dosage is a treatment effect observed? A post hoc analysis was undertaken, based on the number of group sessions completed, because most concepts are introduced in the group sessions, then developed more fully and personalized in the family sessions. This analysis revealed that a large number ( $n = 137$ ) of PLL participants participated in four or more group sessions, and that this group showed statistically significant reductions in recidivism. The number of family sessions among this group was variable, with some having no family sessions at all.

As shown in Table 6, recidivism rates were significantly lower than the comparison group with respect to contacts ( $p = .02$ ), charges filed ( $p = .02$ ), felony contacts ( $p = .03$ ), and felony adjudications ( $p = .05$ ).

## DISCUSSION

This study focused on a very high-risk population of juvenile offenders. Compared to the overall juvenile justice population in Champaign County, PLL youth were more likely to be charged with a felony (50% vs. 33%); more likely to be charged with an offense involving violence or the threat of violence (50% vs. 37%); and younger at their first offense (14.5 vs. 15.6). They also had more prior arrests (3.6 vs. 2.3) and charges (1.6 vs. 0.8). Although ethnic minority adolescents account for 45% of the youth population in the United States, they are disproportionately represented in both the mental health and juvenile justice systems (Huey & Polo, 2010). Seventy percent of this sample consisted of African American juveniles. Henggeler and Sheidow (2012) have recently stressed the need to validate approaches that work with ethnic minority juvenile offenders and their families. These results also correspond strongly with the research of Lowenkamp and Latessa (2004) and

TABLE 6  
*Recidivism: Therapeutic Level Model (at Least 1 month of Treatment)*

Outcomes	PLL ( $n = 137$ ) (%)	Control group ( $n = 155$ ) (%)	<i>t</i> -Statistic	<i>df</i>	<i>p</i> -value	Relative risk (%)
Contacts	38.7	51.0	2.12	289	.02	75.90
Felony contacts	18.7	28.4	1.97	288	.03	65.91
Charges	21.9	32.9	2.130	288	.02	66.56
Felony charges	15.5	21.3	1.29	288	.10	72.73
Adjudications	14.6	21.3	1.50	287	.07	68.57
Felony adjudications	9.7	16.1	1.66	283	.05	60.00
Incarcerations	3.6	6.5	1.10	278	.14	56.57

best practices guidelines set forth by Lipsey, Howell, and Kelly (2010) that higher end interventions like PLL should only be used with high-risk offenders because it is with this group that such interventions are most effective. This sample is also consistent with two previous PLL studies that contained an overrepresented population of African American offenders (82%), who have higher risk levels for being charged with a felony than the general population (Winokur-Early, Chapman & Hand, 2013; Sells et al., 2011).

The PLL model uses a combination of structural/strategic family therapy and MFG to change behavior and foster constructive individual and family development. Parents or caregivers self-report on the Child Behavioral Checklist revealed statistically significant differences in each of the 12 subscales with the largest differences in the areas of rule breaking ( $t = 6.21, p < .01$ , one-tailed), aggression ( $t = 5.56, p < .01$ , one-tailed), conduct disorder behaviors ( $t = 6.67, p < .01$ , one-tailed), attention problems ( $t = 5.59, p < .01$ , one-tailed), and oppositional defiant behavior ( $t = 6.73, p < .01$ , one-tailed). In other words, parents reported at PLL graduation that the program worked to significantly reduce their child's emotional and behavioral problems.

In addition to studying individual and family level outcomes, larger systemic, societal outcomes are also relevant for stakeholders, especially lawmakers and the juvenile justice system. Recidivism, therefore, is one of the most important outcomes to measure when deciding which treatment to use with a juvenile offending population. Results from this study showed that the PLL graduates had reduced recidivism as compared with standard programming in the study site. Youth who completed PLL had statistically significant lower rates of subsequent justice system involvement on three indicators of recidivism, adjudications, felony adjudications, and contacts with the law that did not result in adjudication, with risk reductions of 28 to 44%. These findings are consistent with two other studies of PLL which found that youth completing PLL had significantly lower readjudication rates than those in a control group (Sells et al., 2011; Winokur-Early, Chapman & Hand, 2013). The magnitude of the difference between the treatment and comparison groups is contrasted with Lipsey's (2009) meta-analysis of 548 studies in which 1-year rearrest rates were approximately 6 percentage points lower for youth receiving the target intervention compared with those who did not receive the treatment. In comparison, the PLL rearrest rates (i.e., contacts) were 14 percentage points lower.

Also, findings from the intent-to-treat analyses indicated youth assigned to PLL had significantly fewer police contacts than youth in the comparison group, with three other recidivism outcomes demonstrating a trend toward significance with regard to differences between the intervention and comparison group. Importantly, smaller effect sizes in intent-to-treat as compared to protocol adherence models are commonly found in treatment outcome studies (Gupta, 2011). Therefore, it is possible that a larger sample size may have been needed to detect additional significant results. However, it is important to note that at a dose of at least four sessions in the program, additional significant differences emerged between the PLL and comparison group, including lower levels of contacts, charges filed, felony contacts, and felony adjudications. This finding provides additional evidence of the cost-effectiveness of PLL, as positive outcomes can be observed after just 4 weeks in the program, although, importantly, not as many as for those who completed the program.

Importantly, youth with more severe offenses were more likely to complete PLL than those with lesser offenses. This is relevant because one of the purposes for conducting intent-to-treat analyses is to ensure that any significant results observed between the intervention and control groups are not due to bias in the sample, such that youth with the highest risk of recidivism are more likely to drop out of treatment (Have et al., 2008). Thus, the finding that youth with more severe offenses were more likely to complete PLL

lends credence to the idea that positive outcomes observed in the current sample were not due to an over-representation of low-risk youth among program completers.

### **Bottom-Up Versus Top-Down Approach to Model Development and Research Program**

Many of the teams behind the “gold standard” family inventions for high-risk youth were comprised of full-time researchers who have devoted significant portions of their careers to promulgating their own models and approaches to working with juveniles from a “top-down” approach. Prominent examples would include Scott Henggeler with MST (Henggeler & Sheidow, 2012), and Howard Liddle with Multidimensional Family Therapy (MDFT; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008). When speaking of these models in JMFT’s special issue on intervention research, Sprenkle (2012) notes “because of these allegiance issues, and the lack of testing of the models in most cases by those not professionally ‘related’ to the developers, and the relatively few instances in which models are tested in real-life community settings that approximate actual practice, it is prudent to be cautious regarding whether these approaches would be as effective with typical therapists in real-world settings” (p. 5).

This study attempts to address both of Sprenkle’s critiques. First, as it pertains to the allegiance concern, this article was written by an independent team of researchers and practitioners, not previously affiliated with the PLL model or “related” to model developer Scott Sells. Second, both this study and the PLL approach in general originate in the real world, far away from the ivory tower of academia. PLL, developed through both process research and grounded theory methods, evolved from a program for parents to help them manage their oppositional defiant teens in their homes, not in a tightly controlled laboratory setting (Sells, 1998). As opposed to the aforementioned “top-down” style of research and model development, parents, caregivers, and youth helped build the PLL model from the “bottom-up” and emphasized the use of skill-building through an integration of parenting groups and family therapy within one continuum of care. This kind of client-centered model development or unique packaging may have contributed to a 70% or higher parent graduation rate from previous PLL studies (cf., Winokur-Early, Chapman & Hand, 2013; Sells et al., 2011; Smith, Sells, Rodman, & Reynolds, 2006) and this study with a 72% completion rate with a high-risk juveniles that had a history of high dropout rates and resistance to treatment.

### **Limitations**

The study was not without its limitations. An experimental design was not possible. Greenwood (2008) noted that many promising interventions programs for this population do not get fully noticed without a series of RCTs to validate efficacy. While strong in methodological rigor, RCTs are impractical in most criminal justice settings due to high cost for local agencies and state governments, in addition to the long-term follow-up that is required to accurately assess outcome. A quasi-experimental design was used with eligible juveniles between April 2009 and December 2011; however, selection bias cannot be ruled out. Although our sample was large enough for analyses of main program effects, a larger sample would have permitted a more reliable and thorough analysis of differences between subgroups.

In addition, only PLL graduates completed the CBCL at the start and end of the program. Even though there were statistically significant changes across subscales as showed in pre- and posttests, the impact of PLL on youth behavior must be viewed with caution. Future studies should include a comparable pre- and posttest control group if possible, and at a minimum should also include a comparison of the pretest results between

graduates and dropouts. Finally, we used a well-validated, widely used parent-report measure of child functioning, the Child Behavior Checklist (Achenbach & Rescorla, 2001; Hatfield & Ogles, 2004; Seligman, Ollendick, Langley, & Baldacci, 2004). Parent-report of child functioning has been used as a method of assessment because some studies have not found multi-informant methods to outperform single-informant methods in terms of validity and also due to the unique perspective parents have as frequent observers of youth behavior (De Los Reyes et al., 2011; van Dulmen & Egeland, 2011; Kahana, Youngstrom, Findling, & Calabrese, 2003). However, future studies of PLL should include youth-report to provide a more comprehensive view of youth functioning.

## CONCLUSION

This research demonstrates a promising combination of methodological strengths including seeking out difficult juvenile offending clients, employing nonreactive independent variables, replicating the model with independent investigators, and transporting research to real-world clinical settings. Although this initial evaluation of the PLL community-based model produced hopeful results, further replication of the intervention in urban and rural areas, as well as with varying types of offenders (e.g., sex offenders, violent offenders, youth with a history of severe substance use, etc.), is needed to further validate this model as a promising, evidence-based approach to working with difficult youth and their families. In addition to this follow-up research, additional work should explore in more depth mechanisms of change, fidelity, and cost-effectiveness of the PLL model.

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