

A Randomized Evaluation of Multidimensional Treatment Foster Care: Effects on School Attendance and Homework Completion in Juvenile Justice Girls

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Despite growing evidence that child welfare youth are at increased risk for juvenile delinquency, little is known about gender-specific processes and effective treatment programs for girls. Multidimensional treatment foster care (MTFC), an empirically validated intervention for child welfare and juvenile justice populations, has demonstrated efficacy in reducing arrest rates in delinquent boys and girls. In this study, the efficacy of MTFC on school attendance and homework completion was examined in juvenile justice girls who were referred for out-of-home care (N = 81). Results from this randomized intervention trial suggest that MTFC was more effective than group care in increasing girls' school attendance and homework completion while in treatment and at 12 months post-baseline. In addition, the previously reported effect of MTFC on reducing girls' days in locked settings was mediated by homework completion while girls were enrolled in the intervention setting. Implications for policy and practice are described.

Keywords: *juvenile justice; female; school engagement; delinquency*

Children who have experienced abusive or neglectful parenting (or both) are at risk for increased delinquency, cognitive delays, and numerous other poor outcomes (Arellano, 1996; Beardslee, Wright, Rothberg, Salt, & Versage, 1996; Farrington, 1979; Forrester, 2000; Klimes-Dougan & Kistner, 1990; Merikangas, Dierker, & Szamari, 1998). In a study of 4- to 16-year-olds entering foster care, Clausen, Landsverk, Ganger, Chadwick, and Litrownik (1998) found that 54% met clinical or borderline clinical cutoffs on externalizing, internalizing, or total

behavior problems. Furthermore, involvement in the child welfare system has been shown to increase the likelihood of involvement in the juvenile justice system (Pilowsky, 1995; Ryan & Testa, 2004; Widom, 2000), with victims of substantiated maltreatment averaging 47% higher delinquency rates relative to nonmaltreated children (Ryan & Testa, 2004). Similarly, retrospective analyses with juvenile justice populations have shown that the majority of female offenders report a history of sexual abuse (Oregon Youth Authority, 2000, 2002).

Involvement in the child welfare or juvenile justice systems has also been shown to increase risk for low academic performance and school failure (Lenssen, Doreleijers, van Dijk, & Hartman, 2000), with maltreated children exhibiting severe impairments on standardized tests of language in middle childhood and adolescence (Dale, Kendall, & Schultz, 1999). This affects later academic functioning and puts such children at risk for later academic failure and placement in special education classes. In a study of youth referred from county and city juvenile law enforcement officers, 60% of the adolescents were at least one grade behind their chronological age (Dembo, Schmeidler, Pacheco, Cooper, & Williams, 1997). Another review suggested that sexual abuse is linked to developmental delays, lower academic performance, and learning problems (Trickett, 1997).

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Given evidence that girls experience significantly higher rates and more forms of childhood abuse than do boys, early adverse experiences might differ between the sexes (Green, Russo, Navratil, & Loeber, 1999; Timmons-Mitchell et al., 1997). In general, the associations among childhood maltreatment, out-of-home placement, and lifetime psychopathology might be stronger for females (Green et al., 1999; Leve & Chamberlain, 2005; MacMillan et al., 2001). For example, Ryan and Testa (2004) found that 26% of the delinquent females (vs. 21% of the delinquent males) in their study experienced three or more substantiated reports of child abuse. Girls are also less likely than boys to receive specialty mental health or school-based services (Caseau, Luckasson, & Kroth, 1994; Offord, Boyle, & Racine, 1991; Unruh & Bullis, 2005), and prior maltreatment was identified as a barrier to the successful transition from juvenile justice to the community for girls more so than for boys. Thus, despite boys' higher rates of juvenile justice system involvement, service utilization and long-term outcomes might be more problematic for girls.

Females younger than age 18 are the fastest growing segment of the juvenile justice population, their arrests having increased by 83% between 1988 and 1997 (American Bar Association & National Bar Association, 2001). Although emerging research is examining factors that influence the development of antisocial behavior in girls (Leve & Chamberlain, 2004; Silverthorn & Frick, 1999), little is known about effective interventions for girls who have been involved in the child welfare and juvenile justice systems. To our knowledge, multidimensional treatment foster care (MTFC; Chamberlain, 2003) is the only intervention that has been empirically evaluated in a randomized intervention trial involving such girls. Results of that trial have suggested that MTFC girls had a significantly greater reduction in the number of days spent in locked settings and in caregiver-reported delinquency and had 42% fewer criminal referrals than group care (GC) youth at 12 months postbaseline (Leve, Chamberlain, & Reid, 2005). Significant reductions in delinquency have also been found for boys who were randomly assigned to MTFC (Chamberlain & Reid, 1998).

MTFC is an alternative to treating delinquent youth in aggregate-care settings that is based on social learning theory and aims to capitalize on the potentially positive socializing influence of the family. MTFC youths are individually placed in foster homes and are provided with intensive support and treatment in a setting that closely mirrors normative life (i.e., community-based family setting with public school attendance). In addition, intensive parent management training is provided weekly to biological parents (or other aftercare resources) beginning at the outset of the youth's MTFC placement.

MTFC is primarily aimed to create opportunities for youth to live successfully in the community and to prepare youths' aftercare resources to provide effective parenting, thus increasing chances for the youths' positive reintegration into the community. By providing treatment in a family setting and focusing on the youth and the family, MTFC can reduce the difficulties associated with generalizing treatment gains to a new setting (i.e., foster care represents a smaller shift to the home setting than inpatient facilities). In addition, the model capitalizes on the power of the family environment to increase prosocial behavior by providing ongoing teaching and reinforcement in the foster and biological homes.

In this article, the efficacy of the MTFC intervention on two behaviors hypothesized to relate to juvenile justice girls' engagement in school—school attendance and homework completion—was examined. The study addressed the following questions:

1. Is the MTFC intervention more effective than group care interventions at increasing girls' school attendance and homework completion while girls are enrolled in the intervention and at 12 months postbaseline?
2. Does homework completion while in the intervention setting mediate the previously found group effects on girls' 12-month lock-up rates?

Method

Participants

Between 1997 and 2002, juvenile court judges in Oregon State referred 103 girls for enrollment into the study. Referrals were made consecutively and included all female youth who met the following criteria ($N = 81$): 13 to 17 years old, not currently pregnant, at least one criminal referral in the prior 12 months, and placed in out-of-home care within 12 months following referral. Consent for study participation was solicited from juvenile justice authorities, parents, and the girls. Eligible girls were randomly assigned into the experimental condition (MTFC; $n = 37$) or the control condition (GC; $n = 44$). Analyses included the entire intent-to-treat randomized sample, although there was variability in the intervention dosage received in both groups. The mean length of stay in the randomized intervention placement was 174 days ($SD = 144$) and did not differ significantly by group.

The girls' average age at baseline was 15.3 years ($SD = 1.1$). The ethnic distribution was as follows: 74% Caucasian, 2% African American, 9% Hispanic, 12% Native American, 1% Asian, and 2% other or biracial. At the time of the study, 83% of the girls aged 13 to 19 in the region were Caucasian (Center for Youth Statistics,

n.d.). At baseline, 68% of the girls were residing in a single-parent family, and 32% of the girls lived in families with an income of less than \$10,000. Prior to entering the study, the average lifetime criminal referrals per girl was 11.9 ($SD = 8.9$), and 70% of the girls had committed at least one felony. Nearly all girls experienced prior maltreatment: 88% had documented physical abuse, and 69% had documented sexual abuse. There were no group differences on prebaseline characteristics.

Procedure

Following random assignment, each girl participated in a 2-hour baseline assessment. The girl's current caregiver also participated in this assessment (92% biological parents). At 3 to 6 months postbaseline, girls and their intervention caregivers participated in an intervention setting assessment designed to capture characteristics of the treatment environment. Finally, girls completed a 2-hour follow-up assessment at 12 months postbaseline. When a girl was not living independently (23% of the girls were living independently), her current caregiver also participated in this assessment. In most cases, this caregiver was the biological or aftercare parent, but some girls had reentered treatment settings (6%) or had returned to detention settings for subsequent criminal offenses (15%), in which case the placement setting staff participated in the assessment. Retention rates were high: 90% of the sample participated at 3 to 6 months postbaseline, 88% of the sample participated at 12 months postbaseline, and 12-month lock-up data were available for 98% of the sample.

MTFC intervention condition. Within the structure of the MTFC model (see Chamberlain, 2003), the intervention was individualized based on the girls' behavioral problems and on aftercare considerations. The program supervisor individually placed girls in foster homes with trained MTFC foster parents. The program supervisor works with juvenile justice and school systems and supervises all other MTFC staff involved with the girls and families (e.g., foster parents, skills trainers, and family and individual therapists). Youth behaviors were tracked via the Parent Daily Report Checklist (PDR; Chamberlain & Reid, 1987), which is a brief telephone interview conducted each weekday to track the foster parent's stress level, the girl's behavior at home and in school, and the girl's performance on the point-and-level system. Foster parents were trained and supervised to consistently reinforce high rates of positive and normative youth behaviors. When problem behaviors were identified, the program supervisor and foster parents worked to identify a nondegrading definition of the behavior. Typically, the prosocial

alternative to the problem behavior was identified (e.g., accepting feedback without comment); once a behavior had been identified and defined for a particular girl, it was included on the point-and-level system that the foster parents implemented at home. The program supervisor coached the foster parents to take points away for all negative behaviors and to give points for all prosocial or adaptive behaviors.

An individual therapist met weekly with each girl to focus on problems at school, with their parents, and in the foster home. Targets for the individual therapy sessions were selected based on PDR data, the daily school cards, and the aftercare resources; efforts were then made to motivate the girl to address behaviors that appeared to be having a negative impact. The focus was on adaptive functioning and highlighting the girl's strengths. Thus, each therapist-youth dyad generated mutual definitions of problematic life areas and selected behavioral areas to focus on. Coordinated psychiatric consultation was available when medication management was needed.

To help generalize developing skills to environments outside of the foster home, the youth was assigned a skills trainer (typically a recent college graduate) who helped the youth to identify and participate in community activities of interest. The skills trainer also addressed specific social skills by coaching or reinforcing the girl with adaptive ways to respond to specific situations. Once a behavioral target had been identified and clearly defined, the skills trainer attempted to help the girl to expand her behavioral options through role-plays in hypothetical situations and real-world contexts. In many cases, the skills trainer offered to teach appropriate behaviors to prevent the girl from losing points or to help her in earning a desired reinforcer. This approach helped to establish a collaborative relationship. As the skills trainer worked with the youth to develop more adaptive individual behaviors, the family therapist worked with the youth's family to identify prosocial and problem behaviors occurring in the family context and to define structured responses to these behaviors.

The family therapist worked with the aftercare resource (typically a biological parent) to improve their supervision, reinforcement, and limit-setting methods. Parents were taught to use the point-and-level system to provide feedback and consequences for youth behavior using brief, nonemotional reactions to misbehavior, thus avoiding long discussions of the circumstances surrounding the behavior.

GC intervention condition. GC is the standard intervention service provided for delinquent girls who are referred for out-of-home care. In the current study, girls randomly assigned to the GC condition took part in 1 of 19

community-based group care programs located throughout Oregon State. These programs represented typical services for girls being referred to out-of-home care by the juvenile justice system. The programs had 2 to 51 youth in residence ($M = 21$), 1 to 50 staff members ($Mdn = 2$), and on-site schooling. Although each GC program differed somewhat in its theoretical orientations, 86% of the programs endorsed a specific treatment model, of which the primary philosophy of their program was a behavioral (70%), an eclectic (26%), or a family-style therapeutic approach (4%). Of the programs, 70% reported delivering therapeutic services at least weekly.

Measures

Educational engagement. Three measures of educational engagement were collected from girls and their caregivers. In the first measure, caregivers and girls independently reported at baseline and at 12 months postbaseline on the number of days in the past week that the girls spent at least 30 minutes per day on homework (range = 0-7 days). In the second measure, caregivers and girls reported on whether or not the girls did homework that day (0 = no, 1 = yes) via three PDR phone interviews conducted within a 1-week period at 3 to 6 months postbaseline. Scores were aggregated within rater across calls ($r = .59-.67$ for girl reports and $.07-.60$ for caregiver reports). In the third measure (collected at baseline and at 12 months post baseline), caregivers and girls reported of how often the girls attended school (1 = *not attending*, 2 = *attending very infrequently*, 3 = *attending infrequently*, 4 = *attending more often than not*, 5 = *attending regularly*, or 6 = *attending 100% of the time*).

Composite scores were formed for each of the educational engagement variables by aggregating caregiver and girl reports. The caregiver-girl correlations were .24 (baseline), .47 (3-6 months postbaseline), and .55 (12 months postbaseline) for homework, and were .12 (baseline) and .74 (12 months postbaseline) for attendance. The means and standard deviations by group are presented in Table 1. None of the baseline variables differed significantly by group.

Days in locked settings. At baseline, caregivers and girls were asked where the girl was residing each day during the prior 12-month period. At 12 months postbaseline, this information was obtained from the girl only. Time spent in detention facilities, correctional facilities, jail, or prison was tallied to score days in locked settings. The days in locked settings in the 12 months before and after treatment entry was computed. As is reported in Leve et al. (2005), girls averaged 89 (GC) and 74 (MTFC) days in locked settings in the 12

TABLE 1: Means and Standard Deviations by Group

Variable	MTFC		GC	
	M	SD	M	SD
Baseline				
Homework completion	2.01	(2.16)	2.14	(2.25)
School attendance	4.80	(1.10)	4.78	(1.19)
3-6 months postbaseline				
Homework completion	1.71	(1.07)	1.07	(1.13)
12 months postbaseline				
Homework completion	3.47	(2.44)	2.03	(2.12)
School attendance	5.48	(0.77)	4.87	(1.33)

NOTE: MTFC = multidimensional treatment foster care; GC = group care.

months before treatment entry and 56 (GC) and 22 (MTFC) days in locked settings in the 12 months after treatment entry.

Results

As is indicated in Table 1, MTFC girls had higher mean levels of homework completion and school attendance than did GC girls at both postbaseline assessments. To test our first hypothesis (examining main effects of group condition on school engagement outcomes), three ANCOVAs (3- to 6-month homework completion, 12-month homework completion, and 12-month school attendance) were conducted. In the homework ANCOVAs, the baseline homework score was entered as a covariate to control for baseline levels of homework completion; in the school attendance ANCOVA, the baseline school attendance score was entered as a covariate. In all three ANCOVAs, intervention group condition was entered as the predictor (1 = MTFC, 0 = GC).

The ANCOVA for homework completion while in the treatment setting indicated a significant effect for group, $F(1, 70) = 6.01, p < .05$, with MTFC girls having spent significantly more days on homework during treatment than GC girls. The ANCOVA for homework completion at 12 months postbaseline indicated both a significant effect of baseline homework completion, $F(1, 68) = 4.93, p < .05$, with higher baseline homework scores predicting higher homework scores at 12 months postbaseline, and a significant effect for group, $F(1, 68) = 6.94, p < .01$, with MTFC girls having higher homework scores than GC girls at 12 months postbaseline. The ANCOVA for school attendance indicated a significant effect for group, $F(1, 68) = 5.28, p < .05$, with the MTFC girls having significantly greater attendance than GC girls at 12 months postbaseline. The overall model tests and effect sizes are shown in Table 2.

TABLE 2: ANCOVA Models for Educational Engagement Outcomes

Outcome	Effect of Predictors (η^2)		
	Overall Model	Baseline	Group
Treatment setting: Homework.	$F(2, 70) = 3.08, p < .06$.00	.08*
12 months postbaseline: Homework	$F(2, 68) = 6.22, p < .01$.07*	.09**
12 months postbaseline: Attendance	$F(2, 68) = 2.80, p < .07$.01	.07*

* $p < .05$. ** $p < .01$.

To test our second hypothesis (examining whether homework completion during the intervention setting mediated the previously found effects of MTFC on days in locked settings; Leve et al., 2005), a path analysis was conducted using AMOS 5.0 (Arbuckle & Wothke, 2003). Full information maximum likelihood was used to estimate means, variances, and covariances for the missing cases based on the observed data. The examination of the estimated means and covariances using Little's Missing Completely at Random test indicated that the data met the stringent assumption of missing completely at random, $\chi^2(4) = 1.72, p = .787$, suggesting the appropriateness of the full information maximum likelihood analyses.

Baron and Kenny's (1986) guidelines were used for testing whether four mediating conditions were met: (a) a direct effect of intervention group on the 12-month outcome in the absence of the mediating variable, (b) a direct effect of intervention group on the mediating variable, (c) a direct effect of the mediating variable on the 12-month outcome, and (d) a decrease in significance of the direct path from intervention group to the 12-month outcome in the presence of the mediator (Baron & Kenny, 1986; Judd & Kenny, 1981).

The results of the path analysis are presented in Figure 1. All four conditions for the mediational test were met: (a) the direct path from intervention group to 12-month number of days in locked settings was significant in the absence of the mediator ($\beta = -.22, p < .05$, not shown in Figure 1), (b) the direct effect of intervention group on homework completion while in the intervention setting was significant ($\beta = .28, p < .05$), (c) the direct effect from homework completion while in the intervention setting on 12-month days in locked settings was significant ($\beta = -.28, p < .01$), and (d) the path from intervention group to 12-month days in locked settings became nonsignificant in the presence of the mediator ($\beta = -.13, ns$). The overall model fit was acceptable ($\chi^2 = .513, p = .47$, comparative fit index = 1.00, root mean square error of approximation = .00), and the predictors accounted for 8% of the variance in

homework completion while in the intervention setting and 24% of the variance in 12-month days in locked settings.

Discussion and Applications to Practice

Although youth who have been involved in the child welfare and juvenile justice systems are at high risk for ongoing delinquency and educational failure, they are among the least likely to receive high-quality educational services, as required by the No Child Left Behind Act of 2001 (Leone & Cutting, 2004). The grave consequences of educational failure include a constellation of behavioral and health outcomes such as delinquency, drug use, and teen pregnancy (Forste & Tienda, 1992; Newcomb et al., 2002). For example, in a large-scale, 21-year longitudinal study, Fergusson, Swain-Campbell, and Horwood (2002) found that youth who left school without a degree or qualifications were at greater risk of involvement in juvenile crime. Thus, keeping juvenile justice youth engaged in school can help achieve the dual goals of building educational success and preventing ongoing delinquency. The current study is, to our knowledge, the first randomized trial examining the efficacy of a specific treatment model on the educational engagement of juvenile justice youth and is the only such study to examine these intervention effects in juvenile justice girls.

The results of this trial suggest that MTFC effectively reduced girls' delinquency outcomes (Leve et al., 2005) and effectively increased girls' educational engagement. Specifically, MTFC girls spent about 150% more time on homework at 12 months postbaseline than they did at baseline. Conversely, GC girls' time spent on homework decreased slightly during the course of the study. Similarly, MTFC girls attended school regularly to 100% of the time at 12 months postbaseline, whereas the GC girls attended school less than regularly. Note that the average amount of time that girls spent in their treatment settings was less than 5 months, so the effects obtained at 12 months postbaseline went beyond and were independent of the direct, immediate influences of the foster parents or group care providers. Rather, the results suggest that the MTFC girls and their aftercare caregivers had adapted the regimens learned during treatment to provide greater structure and reinforcement around the completion of homework activities when the girls returned to community settings.

The results of the mediating analyses support the notion that homework practices implemented during the MTFC intervention play a predictive role in outcomes for juvenile justice girls. The mediating analyses showed that girls in MTFC were spending more time than GC girls on homework while in treatment and that, regardless of treatment setting, homework completion while in treatment

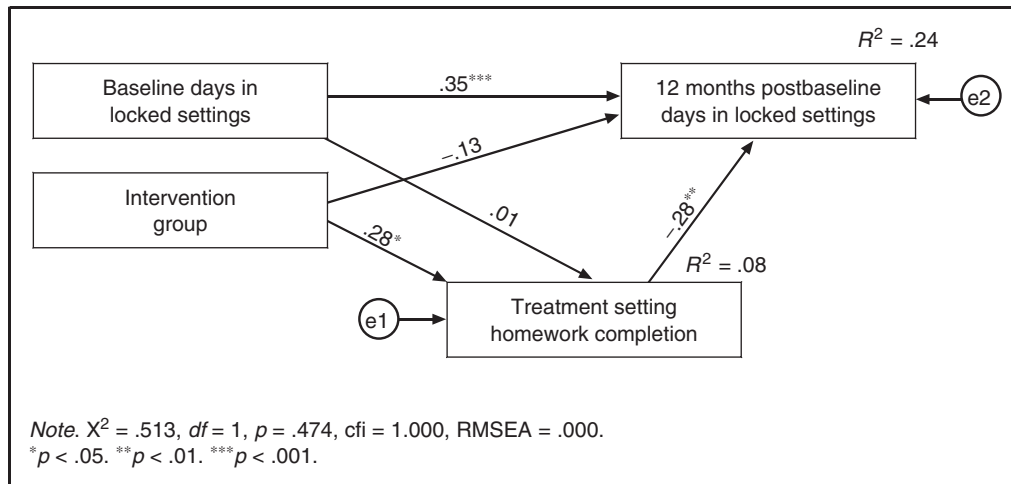


Figure 1: Mediating Effects of Homework Completion During Treatment

reduced girls' days in locked settings at 12 months post-baseline. In other words, keeping delinquent girls engaged in school prevented additional criminal behavior and, therefore, time in detention or locked settings. The effect of homework completion while in treatment was significant, accounting for nearly one fourth of the variance in days in locked settings at 12 months postbaseline.

Taken together, these results provide a promising avenue for helping juvenile justice girls maintain engagement in school and desist from engaging in delinquent activities. The specific treatment components around homework and school engagement are relatively straightforward and can be applied within a variety of treatment settings, including group care facilities. For example, in MTFC youth earn points for spending 50 minutes or more per day reading and studying. This was a required part of the program, even if the girl reported that there was no homework assigned. Homework was completed in a public place (i.e., not the bedroom) that is quiet, where the girls could be observed by their caregivers. Caregivers were trained to offer help without engaging to the point of distracting the girls from concentrating on schoolwork. If learning problems were identified, tutoring was provided. Similar techniques were taught and reinforced with the biological or aftercare parent or parents to increase the likelihood that homework skills learned in treatment would generalize to the home setting. The results of the current trial suggest that such techniques might help all juvenile justice girls, regardless of where they are placed, to become engaged in school and to desist from illicit activities that result in confinement and ongoing juvenile justice involvement. Implementation of such practices in other juvenile

justice settings could have long-term benefits to youth and could represent economical methods for preventing youth from reentering the juvenile justice system.

Conclusions and Future Directions

This study is the first report of an evaluation of a randomized trial on educational engagement outcomes for juvenile justice girls. Moreover, the incorporation of girl and caregiver reports strengthened the validity of the findings and the conclusions that were drawn. Future work could expand on the present study by examining more ethnically diverse juvenile justice populations and by testing this model in a sample of juvenile justice boys.

REFERENCES

- American Bar Association & National Bar Association. (2001). *Justice by gender: The lack of appropriate prevention, diversion and treatment alternatives for girls in the justice system*. Washington, DC: Author.
- Arbuckle, J., & Wothke, W. (2003). *AMOS 5.0 user's guide*. Chicago: SmallWaters.
- Arellano, C. M. (1996). Child maltreatment and substance use: A review of the literature. *Substance Use & Misuse*, *31*, 927-935.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Beardslee, W. R., Wright, E., Rothberg, P. C., Salt, P., & Versage, E. (1996). Response of families to two preventive intervention strategies: Long-term differences in behavior and attitude change.

- Journal of the American Academy of Child and Adolescent Psychiatry*, 35, 774-782.
- Caseau, D. L., Luckasson, R., & Kroth, R. L. (1994). Special education services for girls with serious emotional disturbance: A case of gender bias? *Behavioral Disorders*, 20, 51-60.
- Center for Youth Statistics. (n.d.). *Oregon's 1999 High School Youth Risk and Behavior Survey*. Retrieved March 1, 2006, from <http://egov.oregon.gov/DHS/ph/chs/youthsurvey/yrbs/hs99/yrbs99.shtml>
- Chamberlain, P. (2003). *Treating juvenile offenders: Advances made through the Oregon multidimensional treatment foster care model*. Washington, DC: American Psychological Association.
- Chamberlain, P., & Reid, J. B. (1987). Parent observation and report of child symptoms. *Behavioral Assessment*, 9, 97-109.
- Chamberlain, P., & Reid, J. B. (1998). Comparison of two community alternatives to incarceration for chronic juvenile offenders. *Journal of Consulting and Clinical Psychology*, 66, 624-633.
- Clausen, J. M., Landsverk, J., Ganger, W., Chadwick, D., & Litrownik, A. (1998). Mental health problems of children in foster care. *Journal of Child and Family Studies*, 7, 283-296.
- Dale, G., Jr., Kendall, J. C., & Schultz, J. S. (1999). A proposal for universal medical and mental health screenings for children entering foster care. In P. A. Curtis & G. Dale, Jr. (Eds.), *The foster care crisis: Translating research into policy and practice* (pp. 175-192). Lincoln: University of Nebraska Press.
- Dembo, R., Schmeidler, J., Pacheco, K., Cooper, S., & Williams, L. W. (1997). The relationships between youths' identified substance use, mental health or other problems at a juvenile assessment center and their referrals to needed services. *Journal of Child and Adolescent Substance Abuse*, 6(4), 23-54.
- Farrington, D. P. (1979). Longitudinal research on crime and delinquency. In N. Morris & M. Tonry (Eds.), *Crime and justice: A longitudinal review of research* (Vol. 1, pp. 289-348). Chicago: University of Chicago Press.
- Fergusson, D. M., Swain-Campbell, N., & Horwood, L. J. (2002). Outcomes of leaving school without formal education qualifications. *New Zealand Journal of Educational Studies*, 37, 39-55.
- Forrester, D. (2000). Parental substance misuse and child protection in a British sample: A survey of children on the Child Protection Register in an inner London district office. *Child Abuse Review*, 9, 235-246.
- Forste, R., & Tienda, M. (1992). Race and ethnic variation in the schooling consequences of female adolescent sexual activity. *Social Science Quarterly*, 73, 12-30.
- Green, S. M., Russo, M. F., Navratil, J. L., & Loeber, R. (1999). Sexual and physical abuse among adolescent girls with disruptive behavior problems. *Journal of Child and Family Studies*, 8, 151-168.
- Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review*, 5, 602-619.
- Klimes-Dougan, B., & Kistner, J. (1990). Physically abused preschoolers' responses to peers' distress. *Developmental Psychology*, 26, 599-602.
- Lenssen, S. A. M., Doreleijers, T. A. H., van Dijk, M. E., & Hartman, C. (2000). Girls in detention: What are their characteristics? A project to explore and document the character of this target group and the significant ways in which it differs from one consisting of boys. *Journal of Adolescence*, 23, 287-303.
- Leone, P. E., & Cutting, C. A. (2004). Appropriate education, juvenile corrections, and No Child Left Behind. *Behavioral Disorders*, 29, 260-265.
- Leve, L. D., & Chamberlain, P. (2004). Female juvenile offenders: Defining an early-onset pathway for delinquency. *Journal of Child and Family Studies*, 13, 439-452.
- Leve, L. D., & Chamberlain, P. (2005). Girls in the juvenile justice system: Risk factors and clinical implications. In D. Pepler, K. Madsen, C. Webster, & K. Levine (Eds.), *Development and treatment of girlhood aggression* (pp. 191-215). Mahwah, NJ: Lawrence Erlbaum.
- Leve, L. D., Chamberlain, P., & Reid, J. B. (2005). Intervention outcomes for girls referred from juvenile justice: Effects on delinquency. *Journal of Consulting and Clinical Psychology*, 73, 1181-1185.
- MacMillan, H. L., Flemming, J. E., Streiner, D. L., Lin E., Boyle, M. H., Jamieson, E., et al. (2001). Childhood abuse and lifetime psychopathology in a community sample. *American Journal of Psychiatry*, 158, 1878-1883.
- Merikangas, K. R., Dierker, L. C., & Szamari, P. (1998). Psychopathology among offspring of parents with substance abuse and/or anxiety disorders: A high-risk study. *Journal of Child Psychology & Psychiatry and Allied Disciplines*, 39, 711-720.
- Newcomb, M. D., Abbott, R. D., Catalano, R. F., Hawkins, J. D., Battin-Pearson, S., & Hill, K. (2002). Mediation and deviance theories of late high school failure: Process roles of structural strains, academic competence, and general versus specific problem behaviors. *Journal of Counseling Psychology*, 49, 172-186.
- Offord, D. R., Boyle, M. H., & Racine, Y. A. (1991). The epidemiology of antisocial behavior in childhood and adolescence. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression* (pp. 31-54). Hillsdale, NJ: Lawrence Erlbaum.
- Oregon Youth Authority. (2000). *Mental Health Services Availability Gap Assessment survey: Program office*. Salem, OR: Author.
- Oregon Youth Authority. (2002). *Mental health and female offenders in the custody of the Oregon Youth Authority*. Salem, OR: Author.
- Pilowsky, D. (1995). Psychopathology among children placed in family foster care. *Psychiatric Services*, 46, 906-910.
- Ryan, J. P., & Testa, M. F. (2004). Child maltreatment and juvenile delinquency: Investigating the role of placement and placement instability. *Children and Youth Services Review*, 27, 227-247.
- Silverthorn, P., & Frick, P. J. (1999). Developmental pathways to antisocial behavior: The delayed-onset pathway in girls. *Development and Psychopathology*, 11, 101-126.
- Timmons-Mitchell, J., Brown, C., Schulz, S. C., Webster, S. E., Underwood, L. A., & Semple, W. E. (1997). Comparing the mental health needs of female and male incarcerated juvenile delinquents. *Behavioral Science Law*, 15, 195-202.
- Trickett, P. K. (1997). Sexual and physical abuse and the development of social competence. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. R. Weisz (Eds.), *Developmental psychopathology* (pp. 390-416). New York: Cambridge University Press.
- Unruh, D., & Bullis, M. (2005). Female and male juvenile offenders with disabilities: Differences in the barriers to their transition to the community. *Behavioral Disorders*, 30, 105-117.
- Widom, C. S. (2000). Childhood victimization and the derailment of girls and women to the criminal justice system. In B. E. Richie, K. Tsenin, & C. S. Widom (Eds.), *Research on women and girls in the justice system: Plenary papers of the 1999 conference on criminal justice research and evaluation—Enhancing policy and practice through research* (Vol. 3, NIJ publication no. 180973, pp. 27-36). Washington, DC: U.S. Department of Justice.