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Publisher's Statement

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The Journal of Behavior Analysis of Offender and Victim Treatment and Prevention (JOBA-OVTP) is published quarterly by Joseph Cautilli. JOBA-OVTP is an online, electronic publication of general circulation to the scientific community.

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Mission

The mission of The Journal of Behavior Analysis of Offender and Victim - Treatment and Prevention will be to highlight the role of behavior analysis in adult and juvenile crime prevention, assessment of offenders including risk assessment, and treatment programs from a behavioral orientation including but not limited to the use of behavioral counseling, collaborative goal setting, contingency management, functional assessment, functionally based interventions, respondent conditioning and counter conditioning procedures, functional analytic psychotherapy and acceptance and commitment therapy.

The journal will also place a major focus articles on that present behavior analytic and social learning models of the development of criminal behavior, the behavioral treatment of victims, victimology from a behavior analytic perspective, behavioral interventions for violent crime, functional assessment of offender motivation, and other types of criminal activity, including behavioral approaches to the reduction of terrorism and insurgency reduction. We see all of these topics as suitable for publication in this journal. In addition, the journal will publish articles on behavior analysis in the treatment of the offender that are policy oriented. Articles on forensic behavior analysis, testifying, due process, and behavioral profiling of criminal behavior will be considered. Finally,

organizational behavior management and positive behavioral support articles dealing with system change issues in schools and criminal institutions will also be considered."

The vision of the Journal of Behavior Analysis of Offender and Victim - Treatment and Prevention is as follows: By 2001, the Bureau of Justice Statistics estimated that 2.7% of adults in the U.S. had served time in prison. This is almost a full percentage over the 1.8% that were estimated to have served back in 1991. This dramatic rise in those serving in prisons speaks to the need to strong offender treatment and prevention programs. We envision a world in which evidenced based practices are in place to reduce recidivism and serve as a functional alternative to reducing crime.

The Journal of Behavior Analysis
of Offender and Victim Treatment and Prevention

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After peer review and follow-up, all articles are copyedited. Authors have an opportunity to review and approve their manuscript prior to publication. Once approved, authors are responsible for all statements made in their work, including changes made by the copy editor prior to approval.

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*** Also consistent with APA style, authors must use person-first language for referring to individuals with potentially stigmatizing characteristics. Person-first language requires an author to name the individual first, followed by descriptive information (e.g., "child with autism") rather than to use an adjectival form (i.e., "autistic child") or a nominal form (i.e., "the autistic").**

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General Guidelines for Preparing Abstracts:

The following general guidelines must be honored to insure that the journal will be accepted into the major psych databases. (See PsychINFO website: http://www.apa.org/psycinfo/about/covinfo.html)

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*** Include only the four or five most important concepts, findings, or implications.**

*** Embed as many key words and phrases in the abstract as possible.**

*** Include in the abstract only information that appears in the body of the manuscript.**

*** For the sake of clarity, define all acronyms and abbreviations except for measurements; spell out the names of tests; use generic names for drugs (when possible); and define unique terms.**

· Use the present tense to describe results with continuing applicability or conclusions drawn and the past tense to describe variables manipulated or tests applied.

*** As much as possible, use the third person rather than the first person.**

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Abstracts for empirical studies are also generally about 100 to 120 words in length. They should include the following information:

*** Problem under investigation (in one sentence)**

*** Pertinent characteristics of participants (e.g., number, type, age, sex, genus and species)**

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*** Sources used (e.g., personal observation, published literature)**

*** Conclusions**

Thank you!

The Behavior Analyst Online Journals Department

On the Reemergence of Behavioral Therapies with Juveniles and in the Juvenile Justice System: Introduction to the Journal of Behavior Analysis – Offender and Victim Treatment and Prevention Special Issue: Children and Adolescents.

Kirk A. B. Newring, PhD

While it is probably clear to those that have been youthful at one time, or have attempted to parent teenagers, adolescents are not the same as adults in several respects (e.g., physical maturity, orientation to long-term consequence; Steinberg, 2010). Yet in many settings, behavioral health assessment and treatment for adolescents mirrored what was done for adults, with minimal, if any, modification based on the unique features of adolescence. With the recent zeitgeist of empirically informed and evidenced-based approaches, support continues to accumulate for behavioral and behaviorally based approaches for a host of problems facing children, youth, adolescents, juveniles and juveniles involved in the juvenile justice system (Quinn & Shera, 2009).

In most American jurisdictions, the juvenile justice system is similar to the Canadian model of rehabilitation-based sanctions (Andrews & Bonta, 2010). Recent meta-analyses provide support for the rehabilitation-based approaches for working with adolescents with sexual offense behavior (Apsche & DiMeo, 2010). Apsche and DiMeo's analysis supports the continued used of cognitive behavior therapy approaches, and offers a synthesized approach including aspects of Beck's CBT (Beck 1996), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Dialectical Behavior Therapy (DBT; Linehan, 1993), and Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1993).

Dialectical behavior therapy (DBT) has been used in several rehabilitative settings for youth. Trupin, Stewart, Beach, and Boesky (2002) report on the efforts of the youth and staff members at Echo Glen Children's Center of implementing a holistic, DBT-informed treatment ethos and strategy. The DBT as integrated in the treatment plan includes an emphasis on behavioral chain analysis. In a sense, the DBT model includes teaching the youth how to conduct their own functional analyses – for both unsuccessful as well as successful behavioral chains. Trupin et al. demonstrate the benefits of a DBT approach with incarcerated female juvenile offenders. As Benner, Nelson, Stage, Laederich, and Ralston (this issue) have shown, youthful females in the juvenile justice system often have behavioral health concerns. While society may look askance at conceptualizing criminality as misguided problem solving, Trupin et al. and Benner et al. suggest that criminal behavior is functional behavior, and interventions designed to address the motivators and maintaining contingencies of said criminal behavior will have benefits for the youth, their families, and their communities (Benner, Stage, Nelson, Laederich & Ralston, this volume).

For some youth, they may be placed in rehabilitation, correctional, or similar setting as a consequence of their misbehavior. The Judge Rotenberg Educational Center is a special needs school in Massachusetts serving ages 3 to adult. As part of their mission, they provide services in addition to students with developmental disabilities for students with conduct, behavior, and emotional problems. Israel, Blenkush, von Heyn, and Sands (this volume) report on the outcomes when treatment for students that had been expelled from positive-only treatment had treatment supplemented with contingent skin-shock.

"The teenage brain is like a car with a good accelerator but a weak brake," Steinberg recently wrote, "with powerful impulses under poor control, the likely result is a crash."

(http://www.cnn.com/2010/CRIME/01/15/connecticut.juvenile.ages/) Steinberg's statement about the adolescent brain has been getting much press of late, as the US courts reviewed the practice of sentencing juveniles in adult systems. The problem of all-go-no-stop can be seen in the evaluation of adjudicative competence in juveniles (Kruh & Grisso, 2009), as well as in the delivery of psychotherapy with juveniles and adolescents (Newring, Parker, & Newring, in press). Since the publication of the Functional Analytic Psychotherapy (FAP) book (1991) Kohlenberg, Tsai, and their students, trainees, and colleagues have been hard at work demonstrating the utility of FAP as a behavior therapy. There are two new FAP books to be published in 2010, the second of which includes a detailed presentation of the trials and tribulations of using FAP with Adolescents (Newring et al., in press).

Many parents have concerns about their children's on-line behavior (e.g., public aspect of private information, motivation for child's behavior being different than others). As noted above, adolescents may be prone to overweigh the benefits and ignore potential dangers in a myriad of settings. Wuertele and Kenny (this volume) provide a thorough review of strategies and recommendations related to this potentially pernicious predicament of on-line victimization.

Perhaps forgotten in this review of the perils and problems of adolescence is childhood misbehavior. Snyder, Schrepferman, McEachern and Suarez (this volume) demonstrate a link between early indicators observed in kindergarten with 4th grade antisocial behavior. Sadly, some youth demonstrate behavioral health concerns at an early age and these children tend to lifelong problems.

The editorial board of JOBA-OVTP are delighted to be able to offer this collection of articles focusing on the behavioral approaches being used to address the behavioral health concerns for children and adolescents, many of which are presented in the context of a rehabilitative or corrective setting. We believe that a greater focus on consultation and therapy with a strong evidence base offers adolescents an opportunity to avoid a life time of problems.

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Early Covert Conduct Problems: Phenomenology, Prevalence, Cross-Setting Diffusion, Growth and Consequences

James Snyder, Lynn Schrepferman, Amber McEachern, & Mariann Suarez

Abstract

The expression, persistence, cross-setting consistency and growth of covert conduct problems during kindergarten and first grade are described and compared to those of overt conduct problems, using an at-risk community sample of 267 boys and girls. The prospective association of early overt and covert conduct problems with antisocial behavior at the transition to fourth grade is examined. Discernable levels and individual differences in covert conduct problems are apparent in kindergarten. Covert conduct problems initially occur at home and diffuse rapidly to school, and once initiated are quite persistent. Covert and overt conduct problems show strong concurrent correlations but their growth during kindergarten and first grade is distinguishable. Antisocial behavior at the transition to fourth grade is predicted by teacher and parent reported aggression in fall kindergarten, and by their reports of growth in covert conduct problems during kindergarten and first grade.
Keywords: covert conduct problems, continuity, growth, generalization

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Introduction

Substantial empirical progress has been made in describing general developmental trajectories for antisocial behavior. Research has documented heterogeneity in the developmental timing (Moffitt, 1993; Patterson, De Baryshe, & Ramsey, 1989), behavioral forms (Frick, Lahey, Loeber, et al., 1993), progression (Loeber, DeLamatre, Keenan, & Zhang, 1998) and etiology (Lahey, Moffitt, & Caspi, 2003) of antisocial behavior in an effort to increase the efficacy and effectiveness of preventive and clinical interventions. Recent research focused exclusively on the development of physical aggression (Tremblay, Hartup, & Archer, 2005) is one example of this differentiated approach. This report applies a similarly focused approach to the early development of covert conduct problems and their relation to overt conduct problems.

Covert conduct problems (CCP) refer to two functionally related classes of behavior: (a) socially proscribed acts that attain immediate reinforcement (e.g., stealing, cheating, precocious drug use and sexual activity), and (b) acts performed to actively avoid or escape surveillance and detection (e.g., secretiveness, little expression of guilt, and lying) and to minimize negative social contingencies for proscribed acts (Snyder, McEachern, Schrepferman, Zettle, Johnson, Swink, & McAlpine, 2006). In contrast, overt conduct problems (OCP), such as verbal and physical aggression, entail the use of aversive behaviors openly directed at another person in order to attain desired activities and materials or to terminate aversive social exchange. CCP and OCP differ in behavioral topography and in social function.

Empirical support for the distinction between CCP and OCP has been provided by factor analyses of cross-sectional data derived from global recall of a common informant (e.g., parent or teacher) (Achenbach & Edelbrock, 1986; Achenbach & Rescorla, 2001; Frick et al., 1993; Loeber & Schmaling, 1985). The distinction is also supported by multi-method (Hinshaw, Simmel, & Heller, 1995) and observational data (Willoughby, Kupersmidt, & Bryant, 2001). Typically, these analyses indicate conduct problems can be better represented by two factors than by one factor. OCP and CCP evidence significant same-time correlations (*r*s from .50 to .70), but mono-informant halo effects may inflate estimates of shared variance.

Relative to OCP, fewer data are available concerning trajectories for CCP prior to eight years of age. In part, the difficulty is that many CCP do not occur during this developmental period (Patterson, Shaw, Snyder, & Yoerger, 2005) and those that do occur may be infrequent, transient and situation specific (Lahey & Loeber, 1994). The dearth of information about early CCP limits understanding the conditions under which such problems appear, persist and grow. It also curtails development of early preventive and clinical interventions targeting CCP before those problems become increasingly persistent, serious and pervasive. Once established, CCP may be increasingly difficult to remediate because their performance simultaneously shapes their more successful clandestine use. Optimal timing of intervention for CCP may occur during their initial, sub-clinical appearance, prior to developmental periods of maximal growth.

Parents and teachers report lying and stealing are the most common CCP of children four to six years of age (Bongers, Koot, van der Ende, & Verhulst, 2003). Whereas lying and stealing may reflect transient normative problems, their early sub-clinical occurrence may also serve as precursors for more persistent and serious problems. CCP show increasing coherence and continuity with age (Bongers et al., 2003). Frequent and persistent lying and stealing presage the appearance of other conduct problems in clinically referred children (Loeber, Green, Frick, & McBurnett, 2000). Data from community (Loeber et al., 1998) and clinical (Loeber et al., 2000) samples indicate age-progressions in CCP, from lying and stealing at ages 5-7 to truanting and running away at ages 7-9, to minor property damage at ages 8-10, and to drug use and sexual activity at ages 11 to 13 years. The severity of CCP increases with their persistence: minor lying and stealing escalate to burglary and theft. Minor property damage escalates to vandalism and fire setting (Loeber et al., 1998). Progression to new, more serious forms of CCP is conditional on the prior occurrence of earlier and less serious forms, and old forms persist rather than being replaced (Loeber, Keenan, & Zhang, 1997).

Trajectories of conduct problems can also be examined in terms of their multi-setting occurrence. Achenbach and Rescorla (2001) reported concurrent parent and teacher reports of CCP (rule breaking scale) are correlated .38 based on a sample ages 4 to 18 years. Using multi-setting and –method data from children diagnosed with ADHD and a normative comparison group, Hinshaw et al. (1995) reported correlations ranging from .31 to .56 among ratings by camp counselors and parents, and laboratory observation of CCP. This suggests generalization of CCP across settings, but provides no information about its developmental timing or sequencing.

CCP increment risk for juvenile and adult arrests above that attributable to OCP. Patterson and Yoerger (2002) reported growth in CCP from ages 10 to 16 years significantly increased risk for chronic juvenile and adult offending after accounting for risk attributable to OCP. In fact, CCP during early adolescence fully mediated the impact of early-onset OCP on later offending (Patterson & Yoerger, 1999). They also found the probability of self-reported offending at ages 19-20 years was incremented above its base rate only for individuals who displayed both high rates of OCP at ages 6 to 12 years and high rates of CCP at ages 14-15 years. The probability of offending did not differ from the base rate for individuals who displayed high rates of OCP but low rates of CCP.

The manifestations, prevalence, persistence, cross-setting generalization, growth, and etiology of CCP during early to middle childhood have not been sufficiently examined. Description of trajectories for early CCP and their relation to early OCP is needed to assess whether early CCP uniquely contribute to risk for later maladjustment, to ascertain associated risk processes, and to formulate developmentally sensitive early interventions.

This report tested the following hypotheses: (a) Individual differences in CCP can be reliably measured during the age period from 5 to 7 years; (b) CCP show mean growth (i.e., average group-level increases) and significant individual differences in change from 5 to 7 years of age; (c) Early trajectories

for OCP and CCP are distinguishable; (d) Once displayed, CCP show cross-time persistence and cross-setting generalization; (e) Early CCP predict antisocial behavior in late childhood over and above the predictive value of early OCP.

Method

Participants

The participants were 133 girls and 134 boys whose mean age was 5.3 years at the initiation of the research (fall of kindergarten) and 8.9 to 9.3 years at the last data collection point at the transition to fourth grade. A community sample was obtained by targeting for recruitment all kindergarten children (n = 352, participation rate = 76%) who enrolled in one elementary school serving a distinct neighborhood in Wichita Kansas (SMSA population = 550,000). Parental consent and child assent were obtained at initial recruitment and at follow-up. Participants were reimbursed for involvement at a rate of $10 per hour. Twenty-nine percent of the children were parent-identified as African American, Hispanic/Latino, or other minority. At kindergarten entry, 43% of children lived in intact families with two biological parents, and the remainder in other family configurations. The median per capita family income (total family income divided by number family members) was $8,300 (in 1998 to 2000 dollars); 28% of the families had incomes below the poverty line, 21% had incomes ranging from $30,000 to $50,000 per year, and 11% had incomes greater than $50,000 per year. Forty-six percent of the parents had not completed education beyond high school, and 20% had less than a high school education. With the exception of under-representation of Hispanic- and Asian-Americans, the demographic characteristics of the sample families were not substantially different than families in the United States with children under the age of 10. Seventy-five percent of two-parent families were comprised of dual wage earners, and 9% of families were without any employed adult.

The data used in these analyses were collected at five waves, in fall and spring kindergarten and first grade, and at the transition to fourth grade. Data collection continued after participants made school or residential moves. At least partial data were available for a minimum of 95% of the 267 children in spring kindergarten and in fall and spring of first grade, and for 78% of the sample at the transition to fourth grade. In analyses using SEM, missing data were estimated in AMOS 7.0 using the full information maximum likelihood (FIML) estimation method (SPSS, 2006) and maximum likelihood estimation. FIML does not delete cases missing from one or more waves of data, nor does it delete cases missing one or more variables within a wave of data. This avoids biased parameter estimates likely to occur if pair-wise or list-wise deletion is used to compensate for missing data (Arbuckle & Wothke, 1999). We conducted a missing-value analysis of the SEM covariance matrix using Little's test (SPSS, 2006) to compare estimated mean and variance values of partial with complete data cases. This analysis indicated the data were missing completely at random (p = .17), supporting the use of FIML.

Measures

Child OCP and CCP were assessed in both home and school ecologies in the fall and spring of both kindergarten and first grade. A comparable number of items for OCP and CCP (see Table 1) were selected from parent and teacher reports, similar to items used in previous factor analytic research. Items on these scales were invariant over time. Child antisocial behavior was measured at the transition to fourth grade using parent-, teacher- and youth self-report.

Child OCP and CCP at Home. Parent rated child OCP was defined by a scale comprised of seven items from the Child Behavior Checklist (CBCL; Achenbach et al., 1983): bullying, fights, physically attacks, threatens, teases, argues, temper tantrums (alpha > .75 at each assessment point). These items were selected to represent common forms of verbal and physical aggression that loaded on an OCP factor in previous research (Achenbach et al., 1983; Frick et al., 1993). The scale for CCP was defined by 11 items from the CBCL (alpha = .61 in fall kindergarten, and > .72 at the remaining three assessment points). The

items refer to behaviors related to surveillance avoidance (not guilty, secretive, lies, tardy, truants, and runs away) and to covert behaviors that attain reinforcing consequences (stealing, vandalism, thinks about sex, fire setting, and drug use). These covert behaviors were selected on the basis of theory (Snyder, McEachern et al., 2006) and on previous research indicating their loading on a covert (Frick et al., 1993) or delinquent/rule-breaking factor (Achenbach et al., 1983). Parents rated each item as "not true" (0), "somewhat or sometimes true" (1), or "very true or often true" (2) of the child. Parent ratings of OCP at home were reliably correlated with children's observed rates of negative interaction with peers at school in kindergarten (r = .17, p < .01) and with peer nominations children received for physical aggression at school (r = .37, p < .001). Parent ratings of CCP at home were reliably related to observer ratings of children's "sneaky behavior" on the playground at school (r = .20, p < .01).

Child OCP and CCP at School. Teacher rated child OCP was defined by a scale of seven items from the Teacher Report Form (TRF; Achenbach et al., 1986) that are the same as those from the CBCL. The alpha of the TRF OCP scale was > .80 at each assessment point. The teacher scale for CCP consisted of the 7 items shown in Table 1 (alpha > .67 at each assessment point). These CCP items are a subset of the CBCL items for CCP described above, reflecting limitations in the range of covert behaviors observable by teachers. Previous research indicates the 7 items reliably load on a covert factor (Frick et al., 1993). Each item was rated as "not true" (0), "somewhat or sometimes true" (1), or "very true or often true" (2) of the child's behavior. Teacher ratings of OCP at school were reliably correlated with children's observed rates of negative interaction with peers at school in kindergarten (r = .45, p < .001) and with peer nominations children received for physical aggression at school (r = .66, p < .001). Teacher ratings of CCP at school were reliably related to observer ratings of children's "sneaky behavior" on the playground at school (r = .57, p < .001).

Antisocial Behavior in Third-Fourth Grade. Six measures of child antisocial behavior (Achenbach et al., 2001) were obtained when children made the transition to fourth grade. OCP were defined by the aggression scales from parent CBCL (23 items, alpha = .96), teacher TRF (26 items, alpha = .96), and child Youth Self Report (YSR; 20 items; alpha = .82). CCP were defined by the delinquency scales from the parent CBCL (9 items, alpha = .78), teacher TRF (7 items, alpha = .67), and child YSR (11 items; alpha = .65).

Results

Childhood Manifestations and Prevalence of Covert Conduct Problems

The sample means, standard deviations and prevalence of parents' and teachers' ratings of CCP and OCP at item and scale levels are shown in the top and bottom portions of Table 1, respectively. Scale scores were log transformed to reduce skewness and kurtosis, and used in subsequent model testing. Prevalence as used here is defined as the proportion of children in the sample whose display of each CCP or OCP behavior was sufficiently problematic to be rated as "1" or "2" on single CBCL or TRF items, and whose total scale score > 0. Lying was the most common CCP reported by parents and teachers, and was apparent at kindergarten entry. The next most commonly reported CCP were a lack of guilt over wrong-doing and being secretive, both serving to avoid adult surveillance and contingencies for rule breaking. Stealing was also apparent in kindergarten, but other forms of CCP were less common or not reported at all.

At an aggregate scale level, a small number of children were rated as showing no CCP in fall of kindergarten as reported by parents (about 18%), and a more substantial number as showing no CCP according to teachers (69%). By spring first grade, the number of children displaying no CCP was more comparable for parent (26%) and teacher (39%) reports. By spring first grade, there was comparable

number of children with no OCP and no CCP according to parent (about 40%) and teacher (about 30%) reports.

Early Trajectories for Overt and Covert Conduct Problems

Structural equation modeling was used to estimate and compare the mean levels and slopes of CCP and OCP during kindergarten and first grade. Separate linear growth models were fit to the fall kindergarten to spring first grade log transformed data for each of the CBCL and TRF scale-level reports of OCP and CCP. Means and variances for intercepts (fall kindergarten levels) and slopes (linear change from fall kindergarten to spring first grade) are shown in the body and fit indices for the models are shown in the footnote to Table 2. All error terms were freely estimated. All of the growth models fit the data adequately: X^2 fit $p > .03$ (an overall measure of the fit of the model to the data), Comparative Fit Index (CFI; a measure of discrepancy from the baseline model) > .965, Root Mean Square Error of Approximation (RMSEA; a measure of fit in relation to the degrees of freedom, favoring simpler models) < .065, range of standardized error variances = .028 to .058, and range of the amount of variance accounted for in the observed variables = .49 to .75. Each model was compared to a no growth model by constraining the mean and variance of the slope to 0. Linear growth models fit the data better than their no growth counterparts: X^2 differences all greater than 11.0 with df = 2, $p < .01$.

Table 1 ***Manifestations and Prevalence of Covert and Overt Conduct Problems during Childhood***

	Fall Kindergarten			Spring Kindergarten			Fall 1st Grade			Spring 1st Grade		
Item	Mean	SD	Prp	Mean	SD	Prp	Mean	SD	Prp	Mean	SD	Prp
	Parent Report											
Covert:												
-lies	.47	.60	.42	.51	.60	.46	.45	.55	.44	.50	.62	.46
-not guilty	.38	.65	.36	.34	.56	.29	.35	.61	.27	.36	.60	.30
-secretive	.23	.49	.20	.22	.49	.19	.23	.49	.20	.31	.55	.27
-steals (home)	.12	.33	.11	.10	.33	.09	.09	.29	.08	.09	.32	.10
-steals (outside)	.06	.24	.06	.09	.37	.07	.07	.31	.07	.08	.36	.09
-vandalism	.03	.20	.01	.06	.26	.05	.04	.18	.04	.05	.24	.05
-all other[a]	.02	.09	.02	.02	.11	.06	.02	.14	.07	.03	.21	.08
-total scale	1.94	1.74	.82	2.00	1.88	.81	1.80	1.95	.79	1.99	2.14	.74
Overt:												
-argues	.70	.66	.59	.45	.61	.55	.56	.64	.48	.64	.70	.51
-temper tantrum	.67	.68	.56	.61	.72	.48	.52	.67	.43	.74	.74	.53
-teases	.42	.61	.48	.55	.67	.39	.31	.52	.29	.38	.57	.34
-cruel/bully	.34	.57	.29	.34	.53	.31	.34	.57	.30	.35	.53	.32
-fights	.17	.43	.15	.17	.41	.16	.12	.34	.12	.15	.39	.15

-attacks others	.14	.37	.13	.14	.39	.13	.14	.36	.13	.12	.35	.11
-threatens	.09	.28	.09	.13	.36	.13	.11	.35	.11	.10	.31	.09
-total scale	2.52	2.39	.79	2.49	2.51	.74	2.12	2.37	.67	2.35	2.41	.70

Item	Fall Kindergarten Mean	SD	Prp	Spring Kindergarten Mean	SD	Prp	Fall 1st Grade Mean	SD	Prp	Spring 1st Grade Mean	SD	Prp
						Teacher Report						
Covert:												
-not guilty	.21	.49	.11	.28	.59	.21	.32	.57	.27	.32	.62	.24
-lies	.15	.43	.15	.15	.42	.18	.22	.48	.20	.35	.62	.27
-secretive	.09	.28	.09	.16	.43	.13	.19	.44	.17	.25	.50	.22
-tardy	.08	.29	.07	.16	.48	.11	.12	.36	.10	.19	.49	.15
-steals	.06	.31	.08	.15	.41	.13	.10	.32	.11	.11	.35	.10
-truants	.02	.14	.05	.06	.28	.08	.07	.32	.05	.09	.37	.07
-uses drugs	.00	.00	.00	.02	.17	.02	.02	.18	.02	.01	.15	.01
-total scale	.80	1.55	.31	1.47	2.03	.56	1.15	1.74	.47	1.55	2.16	.61
Overt:												
-argues	.29	.55	.24	.27	.56	.22	.30	.55	.26	.36	.61	.29
-temper tantrum	.24	.42	.22	.31	.53	.26	.19	.47	.26	.18	.54	.23
-cruel/bully	.22	.50	.18	.29	.55	.25	.24	.49	.22	.35	.61	.28
-fights	.15	.40	.13	.22	.49	.19	.18	.44	.15	.25	.52	.20
-attacks others	.15	.40	.14	.16	.42	.17	.17	.47	.14	.18	.49	.15
-teases	.15	.42	.12	.16	.43	.14	.23	.53	.19	.27	.56	.21
-threatens	.06	.26	.05	.10	.36	.08	.08	.32	.06	.16	.45	.12
-total scale	1.15	2.13	.58	1.56	2.56	.64	1.43	2.42	.61	1.72	2.82	.64

Note: Prp refers to the prevalence or proportion of children in the sample whom parents or teachers rated as "1" ("somewhat or sometimes true") or "2" ("very true or often true) on each item and on the total scale of the CBCL and TRF.

[a]other covert conduct problems include sets fires, runs away, truants, thinks about sex, uses drugs.

As shown in Table 2, the mean levels (intercept mean) and individual differences (intercept variance) of teacher- and parent-reported CCP and OCP at fall kindergarten were all significantly greater than 0. The mean slopes for teacher-reported CCP and OCP were positive and significant, indicating average, group-level increases from fall kindergarten to spring first grade. The mean slopes for parent reported CCP and OCP were not significant, indicating no average, group-level change from fall kindergarten to spring first grade. The slope variances of both parent- and teacher-reported CCP and OCP were all significantly different from 0, indicating reliable individual differences in the amount and/or direction of change over time. The average amount of change relative to initial fall kindergarten levels in teacher reports of CCP was quite large (increased by about 20%) and that of OCP was modest (increased by about 7%) over the 18 month period from fall kindergarten to spring first grade. At an average group level, parents reported higher levels of conduct problems than teachers and little change with age, and teachers reported lower levels of conduct problems and increases with age.

Table 2 ***Parameters for Growth Models for Covert and Overt Conduct Problems***

	Covert Conduct Problems		Overt Conduct Problems	
	Mean	Variance	Mean	Variance
		Parent Report (CBCL)		
Intercept (fall K)	.147 (2.96)	.810 (7.73)	.269 (3.60)	1.28 (8.38)
Slope (fall K to spring 1st)	-.026 (-1.07)	.049 (2.33)	-.045(-1.38)	.089 (2.65)
		Teacher Report (TRF)		
Intercept (fall K)	-1.17 (-11.58)	.991 (7.47)	-1.07 (9.48)	1.55 (8.92)
Slope (fall K to spring 1st)	.204 (5.73)	.810 (6.53)	.07 (2.07)	.069 (2.33)

Note: All models are tested using log transformed data. Critical Ratios are shown in parentheses.

Model fit:

CBCL covert: $X^2_{(6)} = 6.68$, $p = .35$, CFI = .999, RMSEA = .025, error var = .028-.044

CBCL overt: $X^2_{(6)} = 12.56$, $p = .05$, CFI = .975, RMSEA = .056, error var = .037-.049

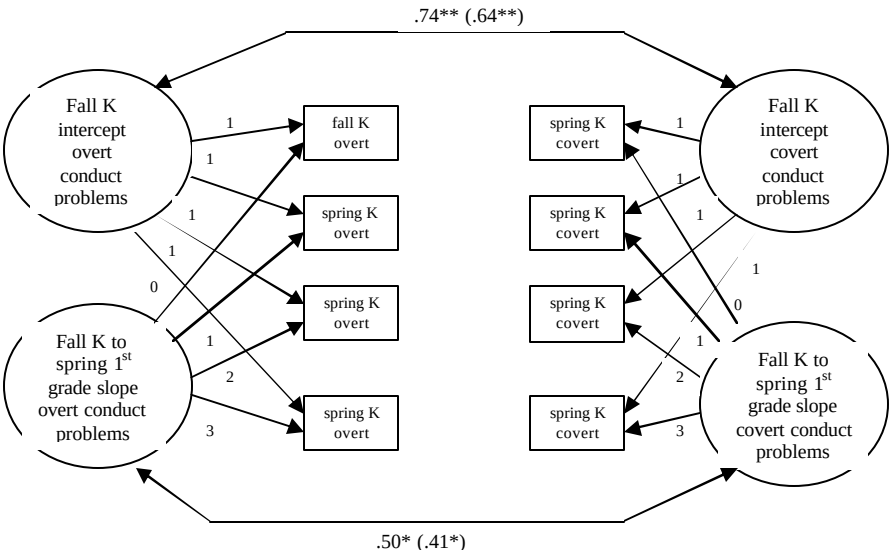
TRF covert: $X^2_{(6)} = 14.28$, $p = .03$, CFI = .969, RMSEA = .064, error var = .035-.051

TRF overt: $X^2_{(6)} = 14.71$, $p = .03$, CFI = .966, RMSEA = .062, error var = .037-.058

Inter-relationship of Growth in Covert and Overt Conduct Problems

The analyses in Table 2 describe trajectories for CCP and OCP as separate dimensions. A central question is the degree to which growth trajectories of early CCP and OCP are distinct. To address this question, dual linear growth models for CCP and for OCP were fit to the data separately for parent report and for teacher report to estimate the setting-specific relationships between their intercepts (fall kindergarten levels) and slopes (changes from fall kindergarten to spring first grade). Parent- and teacher-reported problems were fit in separate models because of their difference in mean slopes as reported above. Covariation between concurrent error terms for CCP and OCP were freely estimated in each model to account for systematic variance attributable to measurement error (e.g., informant bias or halo effects).

Figure 1 shows the relationship between trajectories of CCP and OCP based on parent report (coefficients outside of parentheses and model fit estimates in the lower left corner), or on teacher report (coefficients inside of parentheses and model fit estimates in the lower right corner). Both models fit the data adequately. The correlation between intercepts (fall kindergarten) of parent-reported CCP and OCP was .74 (p <.001) and between slopes (linear change from fall kindergarten to spring first grade) was .50 (p < .05). Correlations between concurrent error terms for parent reported CCP and OCP (not shown) ranged from .32 to .50. The correlation between intercepts (fall kindergarten) of teacher reported CCP and OCP was .64 (p < .001) and between slopes (linear change from fall kindergarten to spring first grade) was .41 (p < .05). The correlations between concurrent error terms for teacher reported CCP and OCP ranged from .29 to .43.



Parent-Reported (path coefficients outside of parentheses)
$X^2_{(25,267)} = 35.36$, $p = .082$, CFI = .987, RMSEA = .037
*p < .05, **p < .001
(error terms are omitted for clarity)

Teacher-Reported (path coefficients inside parentheses)
$X^2_{(25,267)} = 47.81$, $p = .006$, CFI = .967, RMSEA = .058
*p < .05, **p < .001
(error terms are omitted for clarity)

Figure 1. **Dual Growth Model of Covert and Covert Conduct Problems During Kindergarten and First Grade for Parent-Report and Teacher-Report**

The correlations between intercepts and between slopes were all significant. To assess whether the trajectories were the same (i.e., better accounted for by a growth model combining OCP and CCP), each dual growth model with freely estimated intercept to intercept and slope to slope correlations shown in Figure 1 was compared to models that constrained both correlations or one or the other correlation to 1.00. The dual growth models in Figure 1 fit the data significantly better than dual growth models constraining both intercept and slope correlations to 1.00: for parent report, X^2 difference with df = 2 was 273.68, $p < .001$; and for teacher report, X^2 difference with df = 2 was 233.92, $p < .001$. The better fit of dual growth models with freely estimated intercept and slope inter-correlations was primarily due to the lower slope to slope correlations. Models in which intercept to intercept correlations were freely estimated while constraining slope to slope correlations to 1.00 fit the data very poorly: X^2 difference with df = 1 for parent report was 271.74, $p < .001$; and for teacher report was 218.61, $p < .001$. Models in which slope to slope correlations were freely estimated but intercept to intercept correlations were constrained to 1.00 fit only marginally worse than models in which both correlations were freely estimated: X^2 difference with df = 1 for parent report was 3.09, $p < .10$; and for teacher report was 4.98, $p < .05$. This suggests early trajectories for CCP and OCP as reported by parents or by teachers are correlated but distinct in terms of slopes or change over time.

Explicit comparisons between the slope means and variances for CCP and OCP provide more detail about differences in change over time. The slope mean (average change over time) for parent reported CCP was not different than that for OCP (C.R. = 0.75), but the slope variance (individual differences in change) for parent-reported OCCP as marginally greater than for OCP (C.R. = 1.84, $p < .10$). The slope mean (average change over time) for teacher reported CCP was significantly greater than that for OCP (C.R. = 2.57, $p < .05$), but the slope variance (individual differences in change over time) was not significantly different than that for OCP (C.R. = 0.10).

Table 3. ***Correlations for the Cross-Time and Cross-Setting Consistency of Covert and Overt Conduct Problems***

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. CBC cov fk															
2. CBC cov sk	52														
3. CBC cov ff	43	66													
4. CBC cov sf	40	55	63												
5. TRF cov fk	27	22	18	12											
6. TRF cov sk	16	29	18	10	59										
7. TRF cov ff	15	11	25	16	38	40									
8. TRF cov sf	15	23	24	29	39	44	55								
9. CBC ov fk	53	32	39	32	23	19	20	15							
10. CBC ov sk	38	54	53	38	19	12	19	22	60						
11. CBC ov ff	32	41	52	41	16	12	17	14	56	72					
12. CBC ov sf	31	36	42	55	18	22	22	21	54	58	67				
13. TRF ov fk	21	16	22	07	61	58	30	29	32	28	22	22			
14. TRF ov sk	17	07	24	13	38	53	44	33	29	25	24	26	60		
15. TRF ov ff	22	17	20	18	40	35	49	39	29	28	30	29	45	61	
16. TRF ov sf	12	18	25	18	48	43	47	59	23	25	24	29	37	47	59

Note. All correlations > .13 are significant at $p < .05$ and > .18 are significant at $p < .01$.
CBC = parent report, TRF = teacher report; cov = covert, ov = overt, fk = fall kindergarten, sk = spring kindergarten, ff = fall first grade, sf = spring first grade.

Temporal Continuity and Cross-Setting Consistency in CCP

Data relevant to cross-time continuity and cross-setting consistency of CCP and OCP are shown in Table 3. The 12-month continuity correlations (mean for fall kindergarten to fall first grade and for spring kindergarten to spring first grade) of CCP was .53 (OCP = .57) for parent reports, and .41 (OCP = .46) for teacher reports (all *p*s < .01). The cross-time correlations for CCP and OCP were not significantly different. Mean correlations indexing same-time cross-setting consistency between parent and teacher reports of CCP for fall and spring kindergarten and fall and spring first grade was .28 (OCP = .29). All cross-setting correlations at each time point were statistically significant ($p < .05$), but not different for CCP and OCP.

Table 4 ***Cross-Setting and Cross-Time Prevalence of Covert and Overt Conduct Problems***

Setting (Informant)	Percent of Children in the Sample: Measurement Points			
	Fall K	Spring K	Fall 1st	Spring 1st
Neither Setting	14 **(18)**	11 **(19)**	13 **(22)**	16 **(22)**
Home Only (Parent CBCL)	52 **(37)**	35 **(33)**	37 **(27)**	28 **(23)**
School Only (Teacher TRF)	3 **(5)**	8 **(8)**	10 **(15)**	11 **(10)**
Home & School	29 **(40)**	46 **(40)**	38 **(36)**	43 **(44)**

Note: Numbers shown in parentheses provide comparable estimates for overt conduct problems.

Table 4 describes the proportion of children (prevalence) displaying one or more CCP according to setting (home and school) and across-time. The first row shows the percent of children who did not display CCP either at home or school. The second row shows the percent of children who displayed CCP only at home and the third row only at school. The fourth row shows the percent who displayed CCP at both home and school. The columns provide these estimates at each of four developmental measurement points. Comparable estimates for OCP are shown in parentheses in Table 4. In fall kindergarten (first column) about 14% of children did not display CCP in either setting, about 50% only in the home setting, and about 30% at both home and school. A shift occurred by spring kindergarten and persisted thereafter in which the number of children who displayed CCP only in the home setting decreased. These decreases were complemented by small increases at school only, or larger increases in CCP at both school and home. In contrast, consistent age-related shifts in setting displays of OCP were not apparent.

Table 5 ***Probabilities of Displaying Covert Conduct Problems in Spring First Grade Conditional on the Display of Covert Conduct Problems in Fall and Spring of Kindergarten and Fall of First Grade***

	Conditional Probability of Display in Each Setting in Spring First Grade Given the Number of Previous Occasions of Display in That Same Setting .				
Setting	No Occasion	One Occasion	Two Occasions	Three Occasions	base rate prob. in spring 1st grade
Home	.15 **(.10)**	.43 **(.35)**	.63 **(.67)**	.89 **(.94)**	.74 **(.66)**
School	.09 **(.06)**	.56 **(.39)**	.80 **(.74)**	.88 **(.86)**	.51 **(.52)**

Note: Numbers shown in parentheses provide comparable conditional probabilities for overt conduct problems.

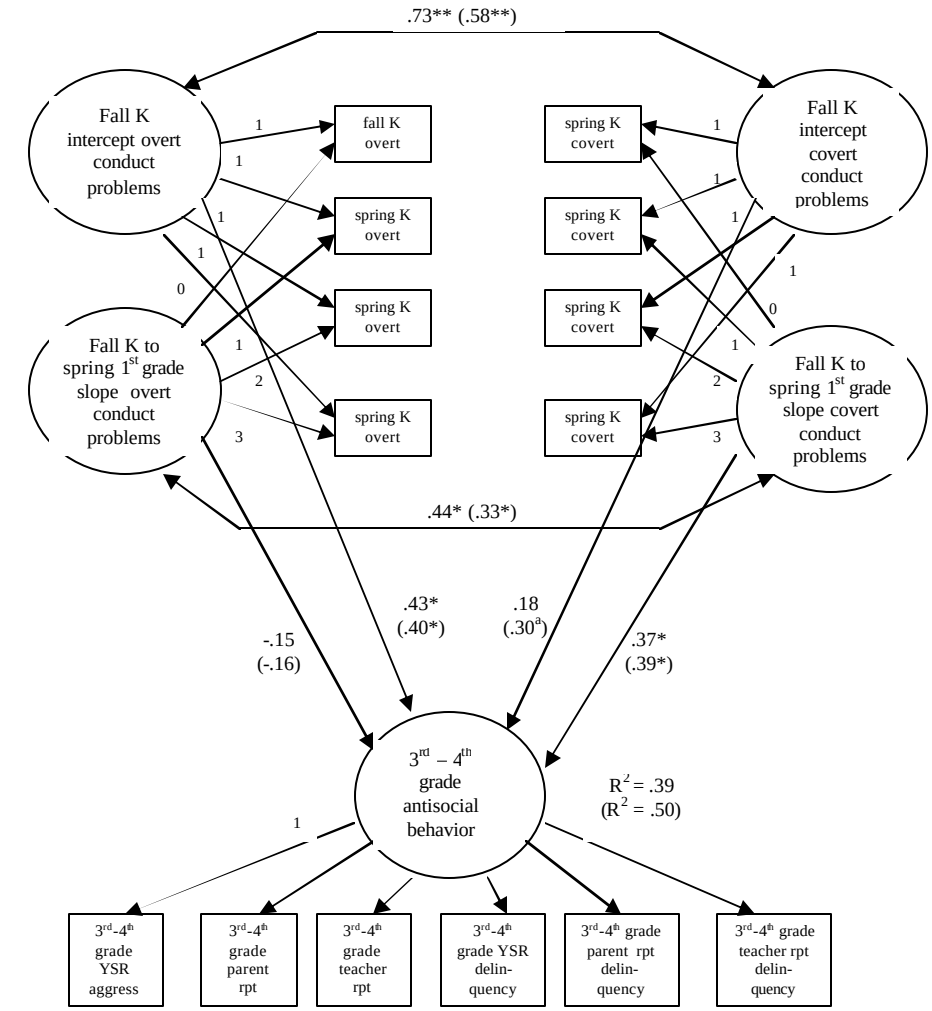
Persistence in CCP cannot be inferred from Table 4; different children could have been moving randomly in and out of CCP displays in each setting. Table 5 provides conditional probabilities of children's display of one or more CCP at home or at school (rows 1 and 2, respectively) in spring first grade given the number of times (0, 1, 2, or 3, shown in columns one through four, respectively) they previously displayed CCP in the same setting in fall and spring kindergarten and fall first grade. The base rate occurrence of CCP in spring first grade is shown in the fifth column. Comparable probabilities for OCP are shown in parentheses. The first column, for example, represents the probability of displaying CCP (or OCP) in spring of first grade given the child was symptom free at all three previous assessment points in kindergarten and first grade, and the second row shows the same conditional probability given the child evidenced one or more problems on one those previous assessment occasions. The probability of CCP in the spring of first grade increased as the number of previous occasions on which those problems were apparent in the same setting also increased. Once a child initiated display of CCP in a setting, that display persisted. A similar pattern of increasing persistence was found for OCP.

Prediction of Antisocial Behavior at the Fourth Grade Transition

The last analysis examines whether early trajectories of CCP increment risk for conduct problems at the transition to fourth grade over and above early trajectories for OCP. A construct for antisocial behavior at the third-fourth grade transition (mean age = 9.2 years) was defined by six observed variables: the full aggression and rule breaking subscales of the parent CBCL, teacher TRF, and child self-report YSR. This construct is shown at the bottom of Figure 2 and was used as the criterion to be predicted by the dual growth models for parent- and teacher-reported OCP and CCP during kindergarten and first grade. Freely estimated correlations between the error terms for rule breaking and aggression derived from the same informant at the fourth grade transition (not shown in the Figure) were all significant (*r*s from .56 to .60, all $p < .01$). The children in this sample evidenced substantial antisocial behavior at the transition to fourth grade. Relative to normative samples of 6-11 year old children on the CBCL and TRF and of 11-18 year old children on the YSR, the percent of children with a T-score > 70 (98th percentile) on the aggression scale of the CBCL, TRF and YSR was 10%, 15%, and 7% respectively. The percent of children with a T-score > 70 (98th percentile) on the delinquency subscale of the CBCL, TRF and YSR was 11%, 2% and 1% respectively.

The results of the model predicting antisocial behavior at the fourth grade transition from the dual growth models for parent-reported CCP and OCP in kindergarten and first grade are shown in Figure

2, with standardized path coefficients and model parameters shown outside of parentheses. The parent-report prediction model fit the data adequately ($X^2_{(80, 267)} = 115.60$, $p = .005$, CFI = .973, RMSEA = .059). Fall kindergarten levels (intercept) of parent-reported OCP were prospectively associated with later antisocial behavior ($b = .43$, $p < .05$), and growth (slope) but not fall kindergarten levels (intercept) of parent-reported CCP was prospectively associated with later antisocial behavior ($b = .37$, $p < .05$). The parent-report model accounted for 39% of the variance in antisocial behavior at the transition to fourth grade.



Parent Report (coefficients outside of parentheses)
$X^2_{(80, 267)} = 115.60$, $p = .005$, CFI = .973, RMSEA = .059
$^a p < .10$, $*p < .05$, $**p < .001$
(error terms are omitted for clarity)

Teacher Report (coefficients inside parentheses)
$X^2_{(80, 267)} = 120.41$, $p = .008$, CFI = .963, RMSEA = .070
$*p < .05$, $**p < .001$
(error terms are omitted for clarity)

***Figure 2*. Prediction of 3rd-4th Grade Antisocial Behavior from Covert and Overt Conduct Problems During Kindergarten and First Grade for Parent- Report and Teacher-Report**

A comparable prediction model based on teacher-reported OCP and CCP is also represented in Figure 2, with standardized path coefficients and model parameters shown inside the parentheses. The teacher-report model fit the data adequately ($X^2_{(80, 267)} = 120.41$, $p = .008$, CFI = .963, RMSEA = .070). Fall kindergarten levels (intercept) of teacher-reported OCP were prospectively associated with fourth

grade antisocial behavior (b = .40, p < .05). Teacher-reported fall kindergarten levels of CCP were marginally predictive (b = .30, p < .10) and growth (slope) of CCP was reliably predictive (b =.39, p < .05) of later antisocial behavior (b = .37, p < .05). The teacher-report model accounted for 50% of the variance in later antisocial behavior.

Discussion

CCP may represent a distinct and important facet of heterogeneity in the expression and development of conduct problems. Specific covert behaviors considered by parents and teachers to be at least moderately "problematic" in terms of some composite of perceived frequency, social impact and warranted concern were clearly apparent as early as kindergarten. About 75% to 85% of kindergarten and first grade children were judged by parents and about 30% to 55% by teachers to display one or more covert behaviors at problematic levels. Consistent with previous research (Achenbach et al., 1983, 1986), early CCP were primarily limited to lying, stealing, covering emotional displays of guilt, and secretiveness. Early CCP entail surveillance avoidance as well as surreptitious behaviors that directly attain reinforcement. The early ability to avoid adult surveillance may be critical to the persistence and progression of other CCP.

At fall kindergarten, significant mean levels and individual differences in CCP were apparent at both home and school, but the displays of CCP were closely related to displays of OCP in the same setting. However, trajectories for CCP appear to be dynamic during the 5 to 7 year old age period. Growth models for CCP representing individual differences in change over time provided much better fit than models representing those problems as stable over time. Teacher-reported CCP showed mean growth during kindergarten and first grade, and reliable individual differences in the direction and amount of change in teacher- and parent-reported CCP were apparent during this period. CCP showed diffusion from home to school settings during the kindergarten year. Such early growth in these limited, sub-clinical forms of early CCP and their diffusion from home to school settings may presage their increasing frequency, prevalence, variety and severity in later childhood and adolescence (Patterson & Yoerger, 2002). CCP also showed modest temporal continuity that increased with cumulative displays of those problems during earlier development. The 12-month continuities for CCP in this study are similar to those reported for children in past research (Verhulst, Koot, & Berden, 1990), and rival those for OCP. Once initiated, both CCP and OCP are less likely to desist with repeated display.

Early trajectories of CCP and OCP also appear to be different. There was only a modest correlation between the slopes for CCP and OCP. There was a rapid and substantial diffusion of CCP from home to school settings during kindergarten. Similar cross-setting diffusion of OCP was not apparent from ages 5 to 7 years, indicating that OCP may be more established whereas CCP may be just emerging developmentally. Differences in slope parameters were greater for CCP than for OCP. Whereas CCP are less prevalent and frequent than OCP, the development of CCP appears to be more dynamic during middle childhood, consistent with previous research (Loeber et al., 1998, 2000).

CCP and OCP in kindergarten and first grade were both significantly related to a multi-informant construct of conduct problems in fourth grade. Moreover, their association was not redundant and evidenced some specificity. OCP (but not CCP) in fall kindergarten were prospectively associated with later conduct problems, but this association was reliably and substantially incremented by growth in CCP but not in OCP during kindergarten and first grade. The increment in risk attributable to growth in CCP in the context of early OCP is similar to previous reports (Patterson et al., 2002, 2005), and this incremental risk appears to operate during middle childhood as well as in late childhood and adolescence.

The distinction between OCP and CCP has often been ignored, resulting in the use of aggregate constructs labeled externalizing problems or antisocial behavior. This practice is not congruent with the

results of this or previous research. CCP and OCP appear to have different trajectories and social functions (Patterson et al. 2005; Snyder, et al., 2006). The substantial co-occurrence of OCP and CCP does not imply the same etiology, course or developmental consequences (Patterson & Yoerger, 1999; Snyder et al., 2006; Tremblay et al., 2005). Insofar as CCP and OCP have distinct trajectories, social functions and developmental consequences, they may require interventions that differ in target social processes and developmental timing. Current empirically-supported interventions for conduct problems prior to adolescence have focused primarily on OCP. There have been few efforts since the 1980's to develop interventions (McMahon & Wells, 1998) explicitly targeting earlier CCP. This paper suggests interventions specific to CCP may be needed in early to middle childhood. The development of truth telling and promise keeping by children is rooted in family social processes as early as ages 2 to 4, beginning with compliance training, rule giving, behavior tracking, and training in word-behavior correspondence (Snyder et al., 2006). Peer processes related to growth in CCP occur as early as kindergarten (Snyder, Schrepferman, Oeser, et al., 2005). Waiting to address CCP until their growth in later childhood may require more intensive and expensive interventions.

Confidence in the interpretation of these data is limited in several ways. First, the synergistic contribution of CCP and OCP during middle childhood to risk for antisocial behavior in later childhood needs to be empirically examined. Early CCP may amplify risk attributable to OCP rather than simply add to it. Second, causal inferences cannot be drawn from the data given their derivation in a non-experimental longitudinal design. The models may also be mis-specified in terms of the absence of other critical variables. Causal inferences and enhanced confidence in risk specifically due to early CCP can be more clearly established using experimental intervention research which systematically investigates the effects of changes in OCP and CCP on later antisocial behavior. Third, the degree to which findings from this small community sample generalize to children with a broader range of characteristics needs to be established. Fourth, given data censoring, the use of maximum likelihood estimation may have resulted in insufficiently conservative estimates of standard errors. The use of maximum likelihood with robust estimation may provide more conservative estimates (Brown, 2006). However, the good fit of the models to the data mitigates this concern to some degree. Fifth, the TRF and CBCL scales for CCP were not comprised of exactly the same items, and occasionally evidenced modest internal reliabilities. These issues reflect difficulty in finding assessment devices that are isomorphic across settings and that are age-sensitive. Sixth, the true prevalence and incidence of covert conduct problems are difficult to estimate from parent and teacher report because of the inherently superstitious nature of these problems. However, the correlation of parent and teacher reports with observed rates of sneaky behavior on the playground provides some convergent validity for those reports. Additional efforts in measurement development, including self-report instruments addressing covert conduct problems for young children are clearly needed.

The methodology from which the data were derived also has a number of strengths. Trajectories for CCP and OCP were repeatedly assessed and the findings were replicated across two informants. The sample represented a full range of child conduct problems and family characteristics. As such, the validity and replicability of the findings may be inferred with some increased confidence.

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Seven Case Studies of Individuals Expelled from Positive-Only Programs

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Abstract

In the debate over aversives a little-known but significant fact is often overlooked: programs that restrict themselves to positive-only treatment procedures sometimes expel individuals with severe behaviors when their behaviors become too difficult to handle. We review seven such cases of individuals with severe behavior problems who were expelled from state-of-the-art, positive-only programs and describe what happened to them when they were enrolled in a program that was able to supplement its positive-only procedures with contingent skin-shock when necessary.
Keywords: severe behavior, skin-shock, aversives, positive behavior support

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Many problem behaviors of special needs individuals can be satisfactorily treated with "positive-only" behavioral treatment procedures. By "positive-only" we mean behavioral procedures that do not include physical aversives. Support for the effectiveness of positive-only procedures in treating many individuals can be found in a comprehensive review by Carr et al. (1999). They showed that in 50% of the studies that qualified for their review, the behaviors were successfully treated (using a standard of achieving a 90% reduction from baseline) with positive-only procedures, and that this figure rose to 60% when the cases reviewed were limited to those in which a functional analysis was performed.

Despite the fact that 40-50% of the cases in the Carr et al. (1999) report were not effectively treated, proponents of positive-only programming continue to assert that *all* severe problem behaviors can be managed successfully with positive-only procedures. For example, the TASH presents the following information on their website, "Positive strategies for changing behavior work equally rapidly, work with behaviors that are equally severe, and are at least as effective as strategies that are aversive or coercive in nature." (TASH, n.d.) The Standards of Practice of the Association for Positive Behavior Support, as displayed on the Association's web site as of November 2007, stated, "Positive strategies are effective in addressing the most challenging behavior." (APBS, 2007)

Foxx (2005) made two important points in response to these assertions: (1) in many of the papers that claim to report successful treatment with positive-only procedures, the behaviors were not very severe; and (2) in at least one paper, the author failed to disclose the significant role that psychotropic drugs played in the result.

The present paper presents a third point relating to the assertion that positive-only treatment can effectively treat all behavior problems, including the most severe ones: *when programs using positive-only procedures encounter individuals with really difficult-to-treat behaviors, they sometimes reject or expel them.* It is important to expose this fact because otherwise both lay and professional people will be misled by such assertions concerning the effectiveness of positive-only treatment.

This paper presents seven brief case histories of individuals who were expelled by behaviorally-sophisticated, positive-only programs when their behaviors became too difficult to manage. All seven were subsequently admitted to the Judge Rotenberg Educational Center (JRC), a program that is able to supplement positive-only procedures with a contingent skin-shock aversive when required. For a

description of the treatment procedures employed at JRC, see Israel, Blenkush, von Heyn, and Rivera (2008).

The positive-only programs that expelled the seven individuals discussed below, are all well-regarded schools in which any parent would be fortunate to be able to enroll his or her special needs child. Several of them use state-of-the-art behavioral procedures, employ skilled behavior analysts, and have had the benefit of nationally-known consultants in behavioral programming.

All information and quotations provided below have been taken from referral documents provided to JRC as part of the normal enrollment process for each of the individuals involved. In each case, the parents of these individuals have granted permission to JRC to use their child's information in this paper[1]. The individuals whose data are displayed will be referred to as Students 1, 2, 3, etc. and the schools as School A, B, C, etc.

Student 1

Between the ages of 7 and 15 Student 1 was a resident at School A, a well-regarded behavioral special needs program that uses positive-only procedures. While Student 1 attended School A, his aggressive behaviors were described in his 2005 Discharge Summary as "quite intense and non-redirectable," and included "head directed punches, head butts, hair pulling, kicking, grabbing and biting." Student 1's aggression and self-abuse were so frequent that he had to be restrained "more than 70" times per week and each restraint required up to five teachers. His self-injurious behaviors included "body hits to the environment, head hits to wall and floor, body punches, face or head hits, self-bites" and hand contortions (intense wringing of hands and fingers). These behaviors caused "bruises, scratches, swelling of joints, cuts to forehead caused by intense head-to-floors (while wearing a protective helmet)...[and] fractured bones in his hands on two occasions." Property destruction included throwing objects, ripping materials, turning over furniture, and throwing large heavy objects. His aggressive behaviors, such as hitting his mother while she was driving, prevented him from having any home visits and curtailed community outings from School A.

School A tried many "positive-only" treatment approaches without success. They gave Student 1 rewards of small snacks, breaks, and preferred activities throughout the day contingent on appropriate behaviors or on the completion of certain tasks. They taught Student 1 functional communication responses, in which he used language to request being alone, to get teacher attention, or to escape demands. They tried using restraint as a positive reinforcers for desired behaviors. They provided Student 1 with periods of no demands and periods of high-rate demands. At one point Student 1 received 1-1 staffing during all waking hours. School A made use of internationally-recognized experts in the behavioral treatment of severe aggression to help design Student 1's positive-only program. In addition, School A tried Student 1 on psychiatric medications such as Risperdal, Trileptal, and Seroquel. None of these steps were sufficiently effective.

In March, 2005, School A expelled Student 1. His Discharge Summary explained the reason as follows: "At this point, behavior-control medication and treatment approaches based on positive reinforcement have been generally unsuccessful in producing long-lasting decreases in Student 1's behavior. This suggests that Student 1 may require alternative interventions than those normally used at [School A], for example, mechanical restraint or contingent aversive stimulation."

In March 2005, at age 15, Student 1 was admitted to JRC. Figure 1 is a chart showing combined monthly totals of Student 1's aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors.

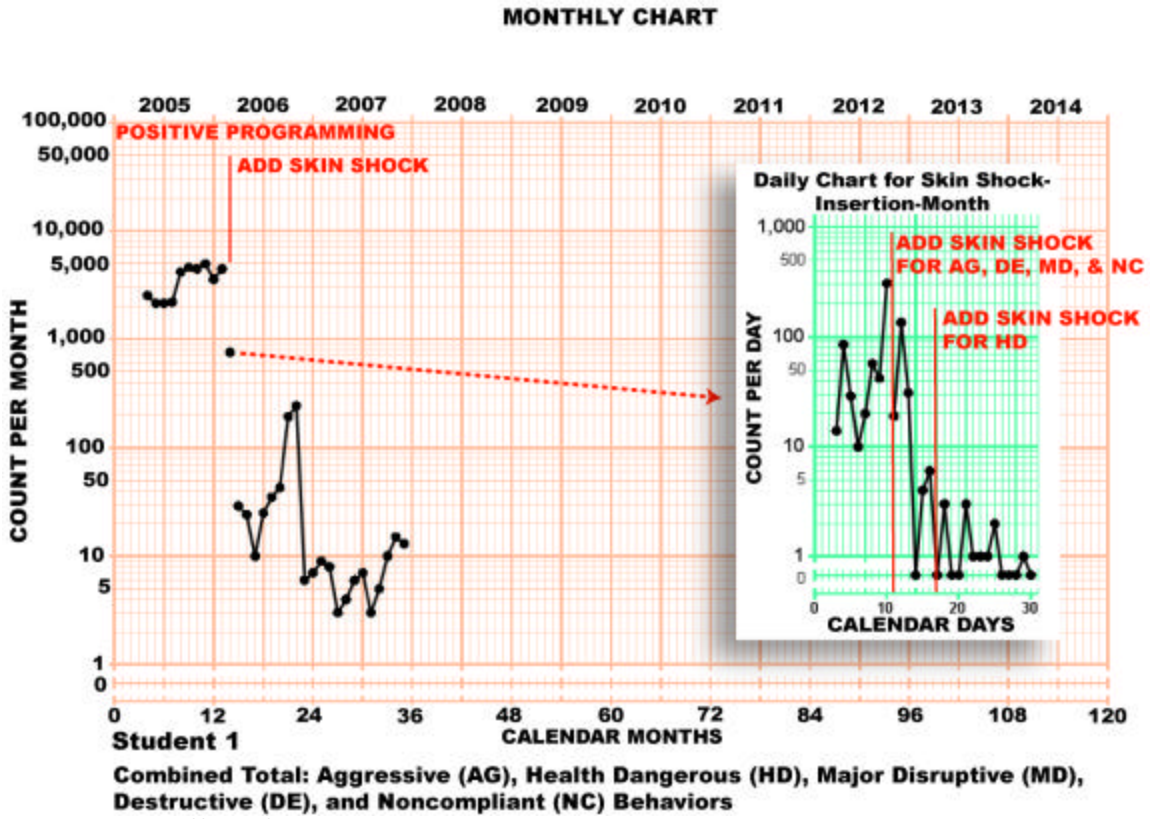

Figure 1. The effect of contingent skin-shock on the aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors of Student 1.

The chart is the same[2] as the monthly version of the Standard Celeration Chart (Pennypacker, Guiterrez & Lindsley, 2003) except that it displays only 5 of the usual 6 cycles. The chart has a multiply/divide scale on the vertical axis. A relative change, such as a doubling, tripling or halving, occupies a constant up-down distance anywhere on this chart. The data on which this chart is based were recorded by JRC's direct care staff members and then entered into a database. Computer software then produced daily (see inset graph in Figure 1), weekly, monthly (Figure 1) and yearly charts with multiply/divide scales which were updated daily and accessed by Student 1's clinician at his desktop through the school's network.

The data series displayed on the left side of Figure 1 is divided into three parts: (1) a data series for the 10 months of baseline (labeled "Positive Programming"); (2) a single data point for the month during which the skin-shock was inserted in the student's program (the "skin shock insertion month"); and (3) a data series for 21 months of skin-shock treatment. The data point for the skin-shock insertion month is not connected to either the baseline or treatment series because it contains some days from the baseline phase and some from the treatment phase.

To show the data for each of the days of the skin-shock insertion month there is a daily chart that is inset on the right side of the chart[3]. This chart is basically the same as the daily Standard Celeration Chart (Pennypacker et al., 2003) except that it shows only 3 of the usual 6 cycles.

Figure 1, as well as the other behavior charts included in this paper, shows the number of behaviors that the individual in question engaged in, and not the number of skin-shock applications, which was always less. One reason is that sometimes the individual displayed many instances of certain behaviors within a single episode. In such cases each separate behavior occurrence was tallied and

recorded, but only one skin-shock application was given to consequate the entire episode. Another is that on some occasions, due to equipment failure or other reasons, an alternative consequence (a verbal "No") was substituted for the skin-shock.

During Student 1's first 10 months at JRC, psychotropic medication was tapered and discontinued, and positive-only programming was used exclusively. Figure 1 shows, however, that JRC's positive-only programming was not successful by itself in decreasing Student 1's problem behaviors. Over the course of his first 10 months at JRC, he displayed a mean of 3,532 aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors per month and the behaviors were accelerating.

After these first 10 months, during which JRC's positive programming proved unsuccessful, Student 1's parents gave their approval to JRC to supplement his positive programming by arranging a single skin-shock consequence for each instance of his problem behaviors. For more information on JRC's positive-only programming procedures and its use of supplementary skin-shock delivered by the Graduated Electronic Decelerator (GED) device[4], see Israel et al., (2007). After obtaining prior parental informed consent, and with various other safeguards in place (Israel et al., 2008), JRC applied to a Massachusetts Probate Court for approval of an individual treatment plan for Student 1 that included the use of skin-shock. This procedure of obtaining prior parental consent as well as an individual court authorization for skin-shock treatment was also followed in each of the other cases presented in this paper.

The data for the first month of treatment are displayed in the inset daily chart on the right side of Figure 1. Notice that CSS treatment of health dangerous behaviors (labeled "HD" in the inset) began one week after CSS treatment was started for the other four categories of behavior—aggressive (AG), destructive (DE), disruptive (DI), and noncompliant (NC). The relatively high rates seen during the first few days of CSS treatment reflect the continued high rate of Student 1's health dangerous behaviors, which were not yet being treated with CSS.

Once skin-shock was added to Student 1's program for all of his major problem behaviors, the behaviors showed an abrupt drop in monthly frequency, changing from 4,459 during the last full month of baseline data to 29 during the first full month of CSS treatment—a decrease in which the frequency divided by a factor of 154. In calculating this drop, immediately after CSS insertion, for Student 1 (and for the other students covered in this paper) we ignored data from the skin-shock insertion month, because it was composed of data from both the baseline and treatment phases. A sudden frequency drop that occurs immediately after the introduction of skin-shock is often found when CSS, generated by the GED device, is employed and is seen in other charts in this report. See Israel et al. (2008).

In the 21 months since skin shock was started with Student 1, the rate of his major problem behaviors has remained at a manageably low level. Although his problem behaviors are not at zero, his most recently monthly frequency was only 13 as compared with 4,459 in the final baseline month.

As a result of this dramatic decrease in Student 1's problem behaviors, by April, 2006, he was able to participate in weekly academic and recreational field trips to places such as restaurants, art centers, the zoo and bowling alleys. He was able to complete his bathroom routine independently and had learned to brush his teeth with only verbal prompts. As of this writing, Student 1 works independently on his computer academics and completes most of his household chores without the need for prompts. His family now enjoys successful visits with him at JRC and takes him into the community on those occasions.

Student 2

In 1999, at age 13 Student 2 enrolled in a day school operated by School B, another well-regarded special needs program that uses positive-only behavioral treatment procedures. At that time she engaged in head-banging to the point of causing pain, redness, bruising and tissue damage. She did this by either hitting her head against an object or by punching her head or face with her fist. She averaged 15-23 occurrences per day. While at School B, the severe punching of her own eyes caused permanent impairment of her vision. She also flopped on the floor from a standing or seated position and aggressed against other students as well as staff members. Her aggressive behaviors included grabbing, pinching, scratching, and pushing others. At home, Student 2's sister was terrified of her because of her behaviors, and as a result Student 2 could not participate in family trips.

School B treated these behaviors using the following positive-only procedures: they tried to block all of her self-injurious behaviors; they prompted her to put her hands down if necessary; they stopped interacting with her until she remained calm for ten seconds; they encouraged her to use her "words" instead of exhibiting her problem behaviors; they granted any request during times she was not exhibiting her behaviors; they gave her a functional communication book and they also used manual restraint in the form of certain "protective holds." On the school bus they kept a row of empty seats as well as an aisle between Student 2 and the nearest other person. In addition, the psychotropic medications Buspar and Risperidone were tried without positive effects. Student 2's last IEP from School B shows that her self-injurious behaviors, even after 5 years of positive-only treatment, were occurring approximately 23 times per day.

In April 2004, School B expelled Student 2. Shortly thereafter, at age 17 she was admitted to JRC. Figure 2 is a monthly chart showing Student 2's aggressive, health dangerous and noncompliant behaviors, all combined into one monthly total.

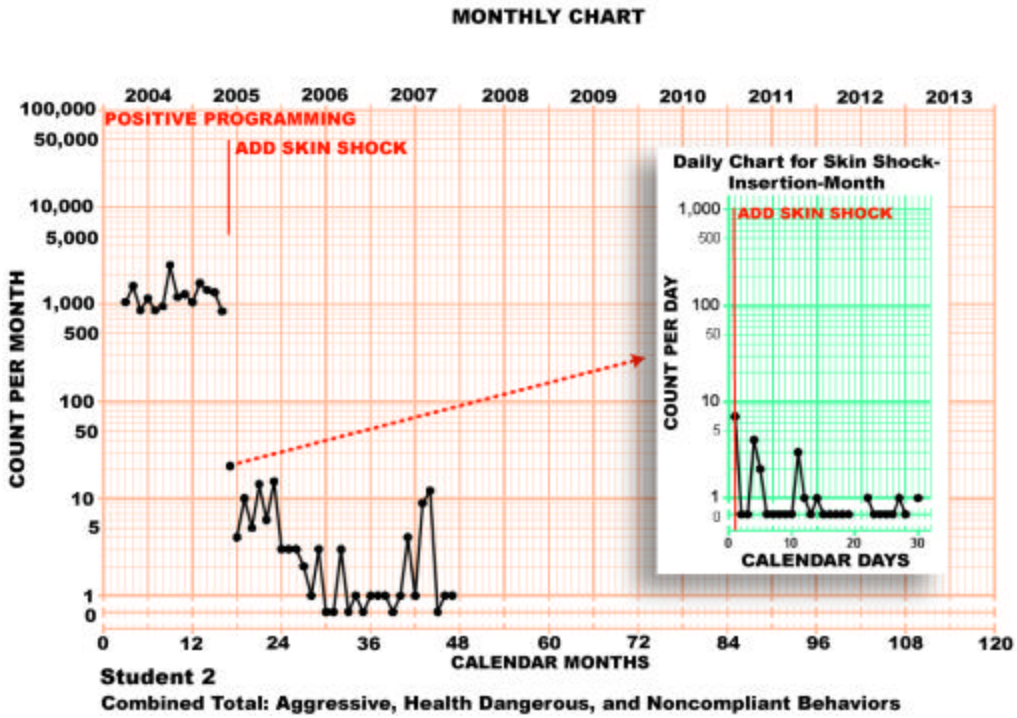

Figure 2. The effect of contingent skin-shock on the aggressive, health dangerous, and noncompliant behaviors of Student 2.

During her first fourteen months at JRC, Student 2 was treated with positive-only programming. This was not effective in decreasing her major problem behaviors which, after fourteen months, were still occurring at unacceptably high levels (mean of 1,994 per month during the last three baseline months).

In May 2005, JRC added a skin-shock intervention to Student 2's program to treat her aggressive, health dangerous, and noncompliant behaviors. Figure 2 shows that once the skin-shock consequence was added, her aggression, self-abuse, and noncompliance decreased abruptly. After skin-shock insertion, and ignoring the data from the skin-shock insertion month itself, Student 2's problem behaviors dropped from 848 per month (last full baseline month) to 4 per month (first full treatment month)—i.e., divided by a factor of 212. Those behaviors then decelerated further over the next 2 ½ years, except for a sudden frequency increase ("jump up") in July 2007 and a sudden frequency decrease ("jump down") in September 2007, and reached 0 or 1 during each of the last 3 months shown on the chart.

Student 2 now engages in academics for extended periods and is able to move from one area of the school building to another without problems. She works on academic programs that are teaching her to count and is making significant progress in her communication skills. Her sister is no longer afraid of her. As a result, Student 2 has been able to participate in a family vacation to Florida. All of this would have been impossible if her problematic behaviors had remained at frequencies similar to those she exhibited during her first 14 months of positive-only programming at JRC.

Student 3

Between the ages of 14 and 17, Student 3 attended School A (the same school that Student 1 and Student 5 had attended) as a residential student. According to a discharge summary in 2003, while Student 3 was enrolled there, he displayed "noncompliance, aggression to others, sexualized behavior, self-injury and property destruction," behaviors that occurred "across the day at the school and residential settings…". He often required 3:1 or 4:1 staffing and was often restricted to a special intensive unit where students received 24-hour 1:1 staffing. During his stay at School A, there were numerous documented incidents in which he required medical attention as a result of self-injurious behaviors or fighting with his peers. He exhibited severe aggressive behaviors, including physical altercations with his peers, as well as self-injurious behaviors such as punching his head, running away and cutting into his right arm. In addition, Student 3 displayed inappropriate sexual behaviors and swearing at staff. During several home visits, Student 3 either ran away from home or would engage in physical altercations with his family members. After one of his fights with his father, Student 3 had to be placed in handcuffs by the police and taken to an emergency room.

When Student 3 exhibited these problematic behaviors, the primary techniques that School A employed were "physical intervention," placing him in "exclusionary time out" (seclusion) and restricting him from "community and vocational environments for varying amounts of time depending on the topography of the behavior." Positive interventions utilized while at School A included: offering choices, visual supports, verbal and physical prompting, environmental modifications, behavioral contracts (DRAs), a point system, direct instruction, and consultative services from a speech and language pathologist. He was also placed on multiple psychotropic medications including Risperdal, Trazadone, Depakote, Neurontin, and Cogentin (earlier in his life he also been tried on Ritalin, Dexadrine, Clonidine, Tenex, and Thorazine). These treatment procedures were not sufficiently effective.

On October 20, 2003, Student 3's school district sent a referral packet to JRC inquiring if JRC was willing to accept him as a student. The referral letter from the referring school district to JRC stated, "As a result of his last IEP meeting it was decided that a more appropriate residential placement be found to address Student 3's complex needs."

Figure 3 is a monthly chart showing the frequency of Student 3's major problem behaviors at JRC.

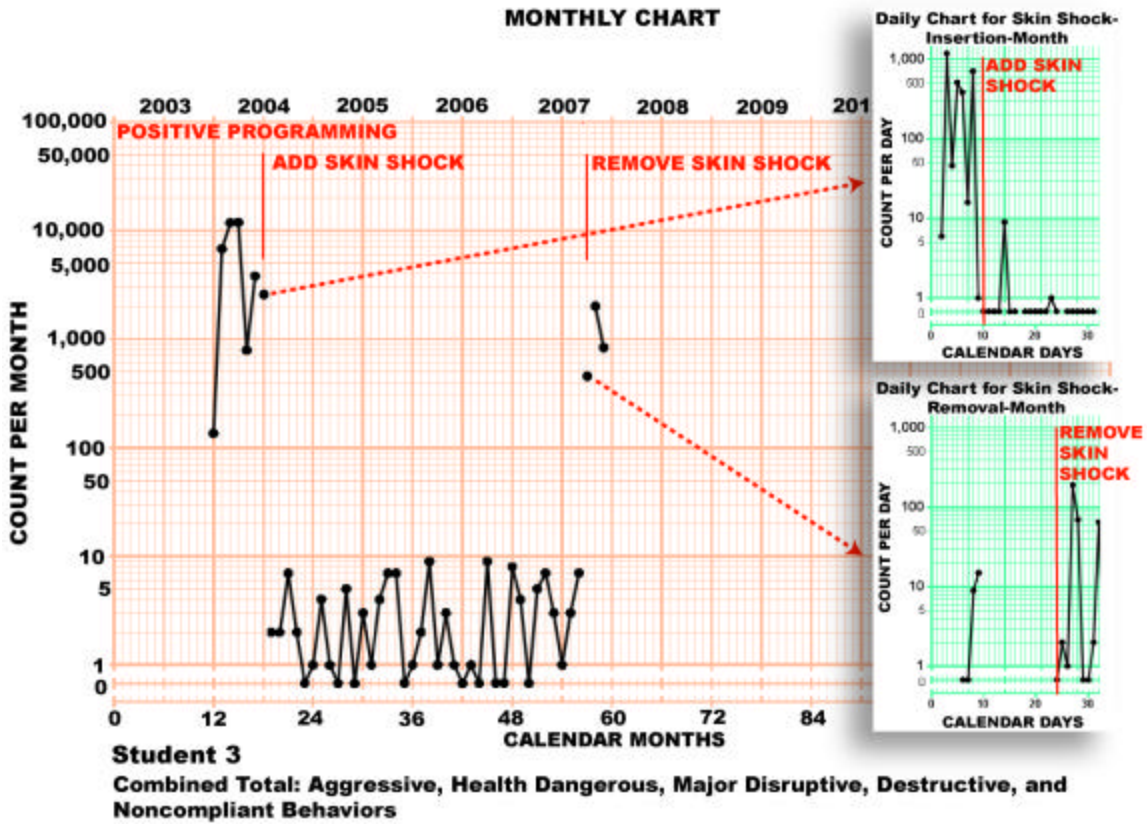

Figure 3. The effect of the addition and removal of contingent skin-shock on the aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors of Student 3.

These behaviors included aggressive, health dangerous, destructive, major disruptive behaviors and noncompliant behaviors. During Student 3's first six months at JRC, he received positive-only programming including, for example, various behavior contracts targeting the absence of inappropriate behaviors, as well as opportunities for him to earn various rewards throughout the day. During this period he was also slowly weaned off all of his psychotropic medication.

Student 3's problematic behaviors showed little improvement during his first five months at JRC. On month 6 he was still exhibiting 3,828 dangerous behaviors per month (a mean of 128 per day)—an unacceptably high level. There were some days, prior to the introduction of skin-shock, on which Student 3 would exhibit over 2,000 dangerous behaviors including aggression and sexually inappropriate behaviors.

In June of 2004 (daily data for this month is shown in the top inset graph) skin-shock was added as a consequence for Student 3's major problem behaviors. As soon as the skin-shock treatment was added to his program, Student 3 showed sudden and dramatic improvement. The frequency of his problem behaviors showed an immediate frequency decrease from 3,828 per month on the last full baseline month (and again ignoring the data for the skin-shock insertion month) to 2 per month on first full treatment month—an improvement by a factor of 1,914. After that, and for the next three years, Student 3's major problem behaviors maintained at a very low level, between 0 and 9 per month.

From the summer of 2004 through March 2007, Student 3 was able to work consistently each day on his academic skills in a classroom with his peers. He no longer hurt himself or others. He lived in an apartment with his peers that had minimal staffing, was learning vocational skills and went on several successful home visits.

In March, 2007 Student 3 ran away from JRC and when he returned his mother withdrew her permission (at Student 3's request) for the skin-shock treatment. Once this treatment was removed, Student 3's behaviors regressed to the same levels that he had shown at the end of his baseline period of "positive-only" treatment. The return of Student 3's problem behaviors as soon as skin-shock was removed shows how critical the skin-shock was for his improved behavior and suggests that for him it was functioning at that time as a prosthetic, rather than as a curative, treatment.

Currently Student 3 is doing poorly and his mother is now considering granting permission once again to JRC for the resumption of GED treatment.

Student 4

Student 4 enrolled in School C at the age of 5 in September of 1991. Student 4's self-injurious and aggressive behaviors increased in frequency and intensity as he grew older. Eventually his behaviors became so intense and unmanageable that neither he nor those around him were safe. Student 4 would physically attack others resulting in serious staff injuries. He would also head-bang. He bit himself so frequently that his hands became severely calloused. Because of his behaviors, he was unable to go on home visits, make community trips or receive an education.

School C did a careful functional analysis of Student 4's behavior problems and attempted to treat him with a wide variety of positive-only procedures which included the following: use of a picture schedule both in school and in the residence; use of a set of "first….then" sequence cards with him so that he could anticipate reinforcement; use of a timer so that he could recognize the beginning and end of activities; a sensory diet; instruction that was short, direct and brief; use of a penny board; use of a "break card" so that he could request a break at any time; use of communication book; and functional communication training.

In addition, Student 4 was given medications such as Haldol, Dexedrine, Orap, Thorazine, Risperdal, Depakote, Clonidine, Cogentin, Benydryl, Zoloft, and Luvox. Thorazine was also prescribed as a PRN, and if his behaviors failed to respond to the Thorazine another PRN of Trazodone was administered. None of these medications were effective.

School C eventually decided that it was unable to meet Student 4's needs and sought to refer him to some other program that might be better able to manage his behaviors. Every appropriate placement in his home state rejected Student 4 after reading his history. His information was then sent to 18 schools from Maine to Virginia. Only four of them called for interviews and he was rejected by all of them due to the intensity of his aggression.

A crisis period for Student 4 developed just prior to the point when he was discharged from School C. During this crisis, various additional interventions were tried, including retraining the staff that worked with him, providing 1:1 staffing at all times, psychiatric consultation, consultation with a well-known expert in autism, classroom changes, hospital outpatient psychiatric services, and PRN medications.

Eventually Student 4 was referred to JRC, which accepted him. In December of 2004, at age 19, Student 4 was discharged from School C and transferred directly to JRC. Upon arrival at JRC, Student 4

went into a coma due to an overdose of psychotropic medication that was given prior to and during his transportation to JRC. He was diagnosed with Neuroleptic Malignant Syndrome and was hospitalized for over 1 week.

Figure 4 is a monthly chart for Student 4 in which each data point represents the total of all of Student 4's most dangerous behaviors during that month.

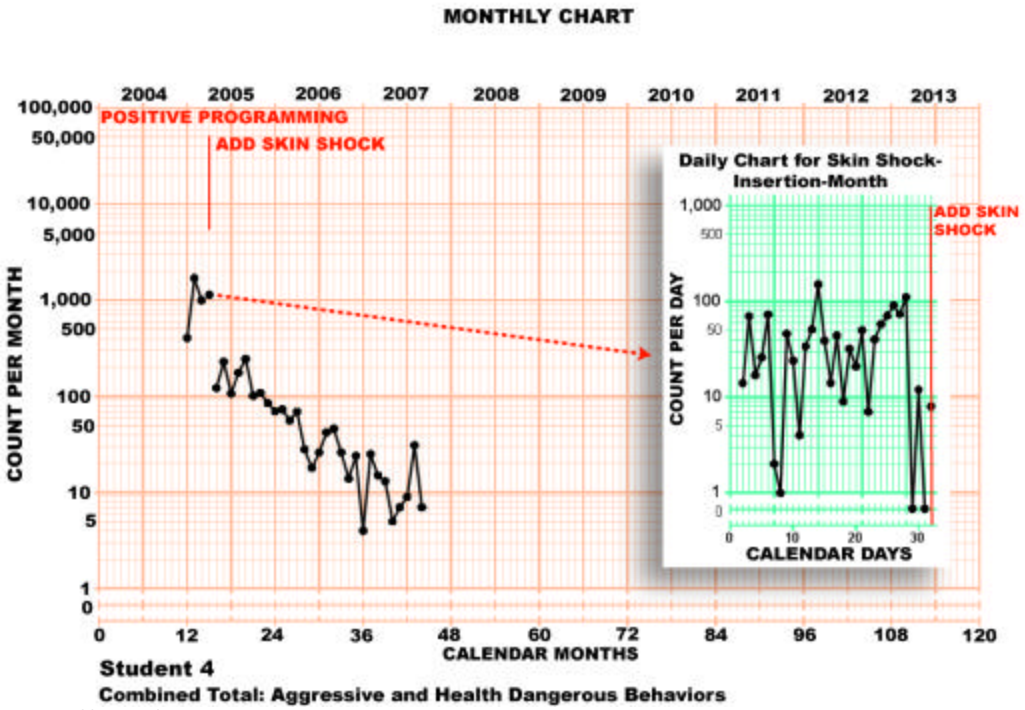

Figure 4. The effect of contingent skin-shock on the aggressive and health dangerous behaviors of Student 4.

The chart shows that during his first 3 months at JRC, during which he received positive-only treatment, Student 4 displayed a mean of 1,038 aggressive and health dangerous behaviors per month. Once contingent skin-shock was added to his program, (and ignoring the skin-shock intervention month shown in the inset), his problem behaviors made an immediate frequency jump down, dividing by a factor of approximately 6. The problem behaviors generally accelerated over the next four months, however, and then decelerated more or less steadily over the next 2 years.

Student 4 is now completely off all psychotropic medications and works daily on a computer doing his academic work. Student 4 has also made significant progress socially and with his daily living skills. He is able to participate in academic and recreational field trips, attends all school activities and goes out into the community with his parents when they visit, without any JRC staff accompanying him.

Student 5

Student 5 attended School A as a residential student between the ages of 10 and 14. While enrolled there, Student 5 engaged in severe aggression which was described in a referral summary from October 2001 as "head-directed punches, kicking, biting, spitting and throwing feces at others." He fractured a staff member's nose. His severe self-injury included head banging (against walls and objects) that required emergency sutures, "punching his eyes, hitting his head against objects, pulling his teeth out, biting himself, etc." He engaged in "property destruction, disrobing, clothes ripping, fecal smearing…elopement as well as other disruptive behaviors such as swearing, teasing and banging walls

and objects." On "two occasions he eloped during overnight hours when staffing was reduced." He also ingested inedible items, inserted objects into body orifices, showed noncompliance and engaged in tantrums. He punched his mother in the car, making transport home impossible, and he could not participate in community outings from school.

School A tried a variety of positive-only behavioral strategies. These included "positive reinforcement contracts," as well as "antecedent-based" types of interventions (manipulation of stimuli and setting events). At one point, after receiving expert consultation from a behavioral consultant, School A implemented new reward procedures as well as punishments. Contingent upon good behavior, Student 5 was allowed to a) select who would work with him on an hourly basis, b) choose from any preferred item or activity and c) request breaks and conversations at any time. In addition, surprise rewards were delivered on a variable-time schedule. Following certain maladaptive behaviors, Student 5's behaviors were consequated by providing him with complete (but non-preferred) meals and denying him any form of social attention until he exhibited 8 consecutive hours of appropriate behavior. This social isolation procedure was not effective. While attending School A, Student 5 was also given the psychotropic medications Risperdal, Tegretol, Trazodone and Benadryl, none of which were effective.

Student 5's referral summary reports that although School A's treatment procedures often showed promise at first, "these positive effects do not seem to maintain, and Student 5's aberrant behavior re-emerges…This has produced minimal positive change in [Student 5's] behavior." Decreases in target behaviors "haven't lasted more than one or two weeks."

In an IEP amendment dated 12/11/01, a representative of School A wrote that the sending school district proposed amending his IEP to change his place of education. The reason was given was that "… his behavioral issues are becoming more significant and putting his safety at risk. Also [School A] have given the district's [sic] until Feb. 1st 2002 to transition [Student 5] to another placement" [bracketed material supplied].

On March 5, 2002, at age 14, Student 5 was enrolled at JRC. Figure 5 is a chart showing the monthly totals of Student 5's five major categories of problem behaviors – aggressive, health dangerous, destructive, major disruptive and noncompliant–combined into one monthly total.

See Figure 5, Next Page!

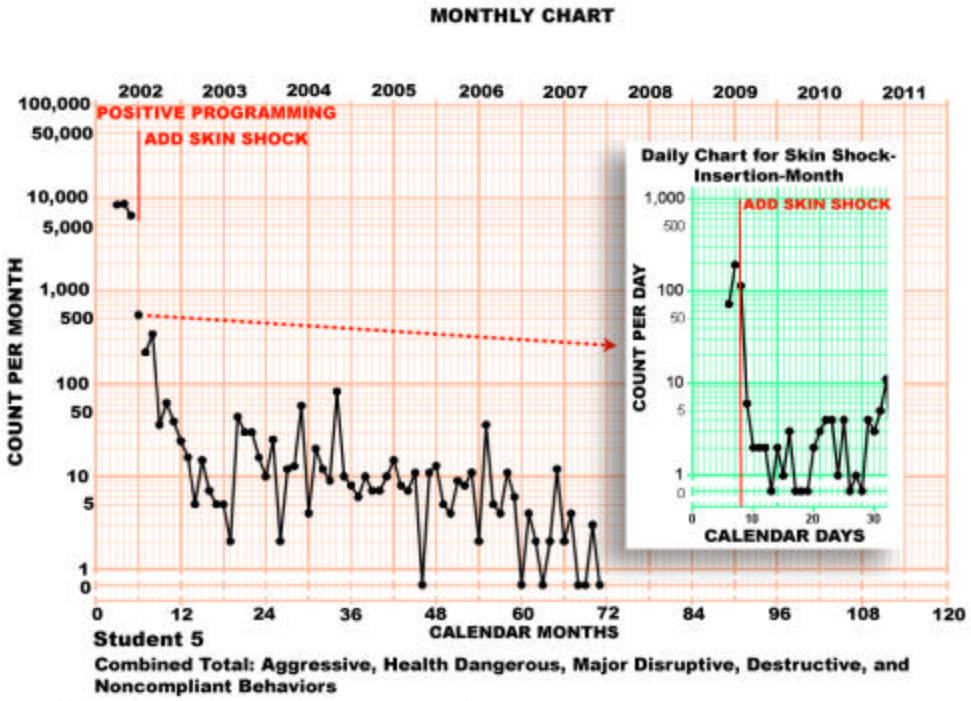

Figure 5. The effect of the addition and removal of contingent skin-shock on the aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors of Student 5.

During Student 5's first four months at JRC, psychotropic medications were tapered and discontinued, and positive-only programming was applied. Although this programming succeeded in dropping his major problem behaviors from a frequency of 8,626 per month to 6,502 per month, this was still an unacceptably high level.

In June of 2002 JRC added a skin-shock intervention to his program, with the usual prior parental consent, individual court authorization and other safeguards. Figure 5 shows that this addition to Student 5's program was associated with an immediate frequency jump down. Once again, we ignore the skin-shock insertion month (which includes both baseline and treatment days), whose daily data is shown in the inset, in calculating this jump down. The monthly frequency dropped from approximately 6,502/mo (on the last full baseline month) to 218/mo (on the first full treatment month)—i.e., divided by a factor of 30. Over the next five years, these behaviors showed a general deceleration, reaching zero in November 2007.

Student 5 now rarely requires physical restraint and consistently masters academic lessons in reading, math, phonics and spelling. He lives with another student in an attractively decorated room which he does not damage. He enjoys field trips (educational and recreational) and no longer has difficulties with transitions. Student 5 continues to learn new and appropriate social behaviors that have allowed him to form relationships and interact appropriately with his support staff, family and other students. He now goes on frequent, successful overnight home visits with his parents.

Student 6

In September 1997, Student 6, at age 14, displayed such severe aggressive and health dangerous behaviors that no residential program would accept him. As a result, he was placed in a children's hospital. Due to his lack of any behavioral progress while there, in December 1999 the hospital sent him

for a four month evaluation to School D, another well-regarded special needs residential program that specializes in positive-only treatment. His most problematic behaviors while attending School D included scratching himself, rubbing his body parts together to cause injury, biting himself, pinching himself and hitting/banging his head. Due to his self-abuse, Student 6 had numerous scars on his body and had required surgery on his left ear. Student 6 would also become aggressive if staff prevented him from injuring himself.

School D's interventions to treat Student 6 included mechanical restraint for almost the entire day, and immobilization at night. He was even prevented from moving while in bed in order to help him sleep better. Despite all this mechanical restraint Student 6 continued to engage in self-abusive and aggressive behaviors.

In March 2000, Student 6 was discharged from School D and sent back to the children's hospital from which he had come. The hospital continued the use of the restraint that had been developed at School D and later, due to his continued aggressive and self abusive behaviors, added the psychotropic drugs Droperidol and Cogentin. His mother reports that during his time at School D Student 6 was unable to go home, was out of control, and received no meaningful education.

At age 17, in October 2000, Student 6 was admitted to JRC. At that point he was in mechanical restraint and still receiving Droperidol and Cogentin. Whenever Droperidol, an anesthetic, was administered to him, Student 6 fell asleep. He was weaned very quickly from the psychotropic medications because they appeared to have no therapeutic value in view of the fact that he still exhibited intense and dangerous behaviors when awake. At JRC Student 6 was started immediately not only on positive programming, but also on court approved contingent skin-shock, because he was continuing to cause severe damage to his face even while wearing arm splints and a helmet.

Figure 6 shows the combined monthly totals for Student 6's aggressive and health dangerous behaviors.

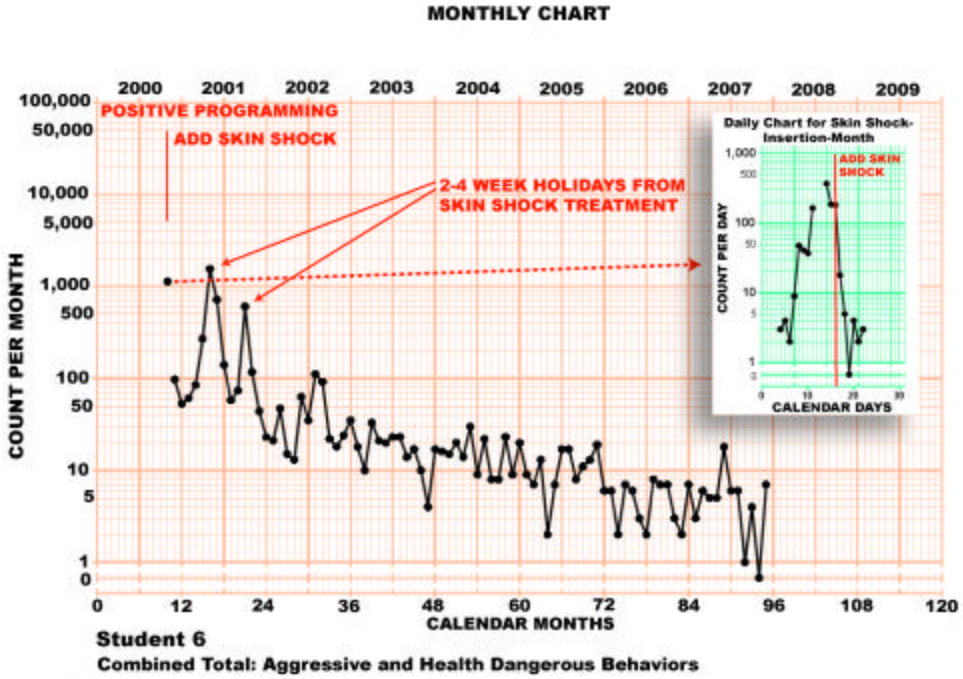

Figure 6. The effect of contingent skin-shock on the aggressive and health dangerous behaviors of Student 6.

Within one week of the addition of skin-shock treatment, JRC was able to remove his helmet and began fading the stiff stays out of his arm splints. As Figure 6 shows, after the introduction of skin-shock treatment, Student 6's maladaptive behaviors showed an initial deceleration followed by two distinct spikes in behavior. During these two periods skin-shock treatment was temporarily suspended for a few weeks because his records indicated that he had a history of displaying occasional dramatic increases in behaviors that were resistant to treatment. During these periods mechanical restraint was used to keep him safe. When CSS treatment was resumed, Student 6 showed a gradual and relatively steady deceleration that has extended over seven years. During the last month shown in Figure 6 he displayed zero problem behaviors.

Student 6 is now flourishing academically and socially. He is free of all restraint and medication. He averages only one self-injurious behavior per week and is a happy, smiling young man, free of any injuries. No restraint or medications are necessary and he participates in a full schedule of academics, habilitative skill development and vocational training. He participates in activities in the local community and enjoys frequent visits from his mother.

Student 7

Student 7 was enrolled in special education programs starting at the age of 5, when he attended a day program operated by School E. Student 7's mother reports that he was out of control while there and frequently ran nonstop around the classroom. During a weekend respite stay at School E, Student 7 opened a bottle of liquid Mellaril and drank the entire bottle. He ended up in the emergency room and on the pediatric unit of a hospital for three days. Student 7 was discharged from School E after one year because he was not making any progress and his inappropriate behaviors were increasing.

Student 7 was then admitted to the same School A that is referred to above. At that point he was engaging in 70-80 aggressive and self-injurious behaviors per day. His most severe behaviors included biting himself and others, bolting from staff, pinching himself and others and pica. He was discharged from School A after 1 year because he was not making progress and his behaviors were increasing.

Student 7 then spent 7 years at School F. School F's interventions included the use of group dynamics, art, music, academics and the acquisition of communication and daily living skills. During Student 7's stay at School F, he made significant progress in learning daily living skills but his severe maladaptive behaviors impeded continuous growth in all other areas. He would often have tantrums involving violent aggressive outbursts and health dangerous behaviors such as frequently bolting from teachers and engaging in pica. Student 7's mother was unable to control his severely dangerous behaviors when he was at home during vacation periods. He would stay awake during the night hours and engage in pica, ingesting household items such as motor oil, detergents, bleach, plants, lead paint and deodorant. On one occasion, Student 7 assaulted his brother while his bother was driving a moving vehicle. During Student 7's vacation periods he repeatedly chewed on the woodwork in his mother's house.

School F was unable to treat Student 7 successfully and at age 12 he was removed and enrolled in School G. While at School G the frequency and intensity of his dangerous behaviors began to increase. He recurrently targeted younger children and females with intense aggression, often biting and scratching them. These outbursts were sometimes without antecedents and appeared premeditated. He would wait for the staff member or peer to turn his or her back to him and then aggress. Antecedents or situations likely to bring about behavioral outbursts included placing demands on him, telling him "no", and denying him a food item that he desired. Because he attacked his family when at home, he could not go on regular home visits or on community trips with them.

One of the principal interventions used at School G involved escorting him to a secluded area

subsequent to an aggressive or health dangerous episode and prompting him into a seated position. In this area he often would bite his hand or bang his head while moaning. On several occasions it required additional staff support to contain him in this area because he attempted to assault the staff. If these episodes occurred while at his group home, Student 7 would be escorted to an empty room and be left unattended. Once there, he often destroyed the blinds in the room, bit himself and continually got out of his seat. In addition Student 7 engaged in frequent disruptive and noncompliant behaviors such as screaming, refusing to follow directions or respond to physical prompts, disrobing, and masturbating in public. While at School G, he was prescribed Risperdal, which was also unsuccessful in treating his behaviors.

In April 2003, Student 7, now age 16, was admitted to JRC. Figure 7 shows the monthly totals of Student 7's most dangerous behaviors.

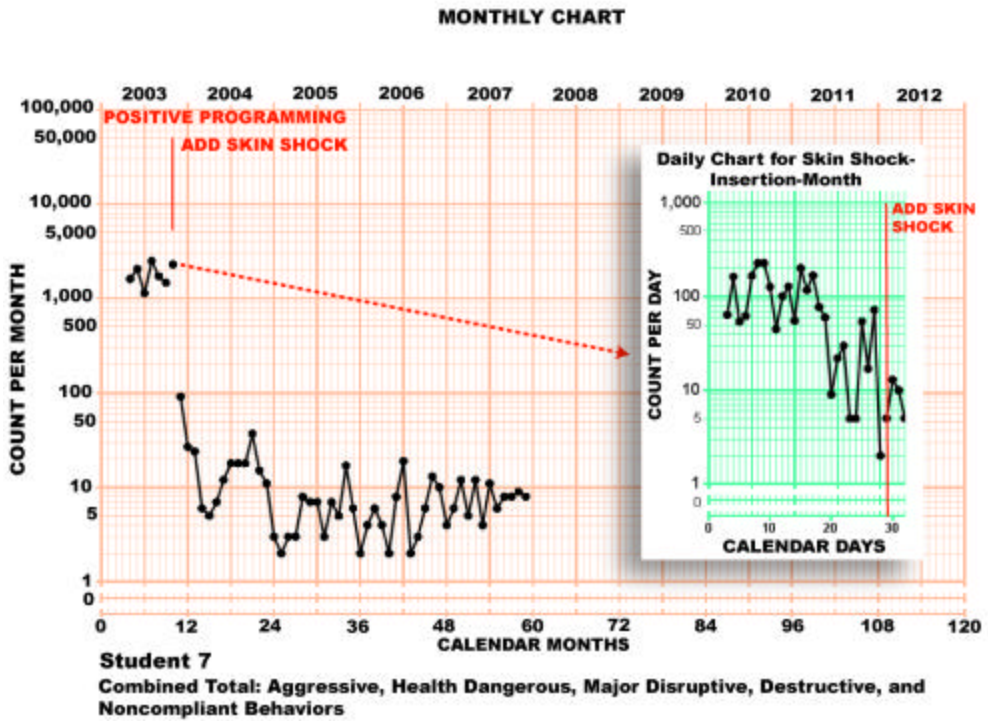

Figure 7. The effect of contingent skin-shock on the aggressive, health dangerous, major disruptive, destructive, and noncompliant behaviors of Student 7.

When Student 7 was admitted to JRC he was treated with positive-only programming for over six months. During this period there was no deceleration in his problem behaviors and he was engaging in a mean of 1,753 dangerous and disruptive behaviors per month. After these six months of positive-only programming, contingent skin-shock was added to Student 7's treatment. Student 7's health dangerous, aggressive, destructive, major disruptive and noncompliant behaviors then showed an immediate decrease. If we once again ignore the skin-shock insertion month shown in the inset, the jump down is from 1,476 per month (last full baseline month) to 92 per month (first full treatment month), dividing by a factor of 16. Thereafter the behavior decelerated over the next 15 months to 2 or 3 per month. During the last three years he has exhibited a mean of only 6.8 problem behaviors per month.

In addition to these behavioral improvements, Student 7 advanced academically and socially. As

of October, 2003 when skin-shock was inserted into his program, Student 7 was able to participate in community outings and weekly field trips to places such as museums, amusement center, and restaurants and was able to go on frequent home visits with his family.

Discussion

All seven individuals presented in this paper were expelled from highly regarded behavioral programs that used state-of-the-art positive-only programming. All seven eventually required that their positive-only programs be supplemented with an effective aversive stimulus in the form of skin-shock. When skin-shock was added, all seven made significant academic and social progress and were able to engage in the positive rewards and educational progress to which they had previously been denied access due to the frequency and intensity of their dangerous behaviors. These case histories provide strong support, therefore, for using supplemental aversives when positive-only interventions have failed to produce appropriate results and the individuals are at continued risk of harming themselves or others.

These reports also suggest that the assertion that all severe problem behaviors can be effectively treated with positive-only behavioral treatment procedures is premature. Until positive-only procedures are able to treat individuals with really severe behavior problems effectively, and without disabling and harmful psychotropic drugs, it is only prudent and humane to keep available the option of supplementing positive procedures with aversives when required.

Unfortunately, during the past few decades, considerations of political correctness, career advancement, and regulatory prohibitions have prevented most behavioral psychologists from considering, using or even doing research on supplementary aversives. Where does this leave parents of children such as those described above, whose children have been rejected or expelled from the best positive-only programs available and whose behaviors are too dangerous for the children to be taken home? And where does this leave the individual who is stuck with a problematic, non-functional repertoire that our current technology of positive-only procedures is unable to remedy, who is facing a lifetime of dangerous psychotropic medication while bouncing in and out of psychiatric hospitals or other institutional settings, and who has lost the opportunity to participate in a rewarding and meaningful life?

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Footnotes

[1] Copies of the documents containing the quotations contained in this document, as well as related information, are available from the senior author upon request.

[2] As is true of the monthly Standard Celeration Chart, on this chart a data series that doubles every six months draws a 34 degree angle.

[3] The reader may wonder why the first data point on this inset daily chart is not placed on the first vertical line. On this daily chart the heavy vertical lines represents Sundays, and the thin vertical lines represent the weekdays. Each data point is plotted on the day of the week appropriate to the date on which the student displayed that total number of problem behaviors.

[4] For an analysis of the side effects of JRC's skin shock treatment, see van Oorsouw, Israel, von Heyn & Duker (2008).

Author's Note

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Sex Differences on MAYSI-2 Mental Health Symptoms of Juvenile Detainees: Impact on Status Offenses and Delinquency

Gregory J. Benner, J. Ron Nelson, Scott A. Stage, Mike Laederich & Nicole C. Ralston

Abstract

The primary purposes of this study were to: 1) Confirm sex differences in the mental health symptoms of girls and boys in a northwest juvenile court using the MAYSI-2; 2) examine sex differences in the frequency and nature (status and non-status offenses) of juvenile court contacts; and 3) determine whether sex-related differences in mental health symptoms predict juvenile court contacts controlling for maltreatment, age of first referral, and ethnicity. Status offenses are incurred because of the prohibition of various acts due to the offender's status as a juvenile (e.g., alcohol consumption, violation of curfew, or truancy). Non-status offenses (i.e., delinquency) are incurred because of violation of the law and commitment of a crime. Results indicated that girls were less likely than boys to have high numbers of status and non-status offenses; whereas girls with a prior history of childhood maltreatment were more likely to have high numbers status and non-status offenses than non-maltreated girls. Further, sex was a statistically significant covariate of status offenses and delinquency on mental health profiles. Consistent with extant research, girls also scored reliably higher than boys on the MAYSI-2 Angry/Irritable, Depressed-Anxious, Suicide Ideation, and the Traumatic Experiences scales. Findings, limitations, and implications are discussed.

Keywords: juvenile justice; MAYSI-2; mental health; juvenile court history; recidivism

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Introduction

Understanding how sex differences in the mental health functioning of juvenile detainees impacts frequency of juvenile court contacts is important to reducing recidivism and to addressing gender-specific treatment needs. Sex differences in the mental health symptoms and disorders of juvenile detainees have been well-established. Researchers have found differences in the mental health symptoms of girls and boys in the juvenile justice system using a self-report intake measure, the *Massachusetts Youth Screening Instrument - Version 2*. Researchers of a multisite (N = 283) and multistate (N = 19) archival investigation of sex differences in the self-reported mental health symptoms of boys and girls (N = 70,423) found that a greater proportion of girls scored high across scales of the MAYSI-2 than boys (Vincent, Grisso, Terby, & Banks, 2008). Weighted mean odds ratios (MOR) indicated a large sex effect on the MAYSI-2 Suicide Ideation scale (MOR = 2.43) and moderate effects for the Angry-Irritable (MOR = 1.80), Depressed-Anxious (MOR = 2.08), and Somatic Complaints scales (MOR = 1.80). Across all sites, girls on average were 1.8 to 2.4 times as likely as boys to have clinical elevations on all MAYSI-2 scales, sans Alcohol/Drug Use. In aggregate, 72% of girls and 63% of boys had a clinical elevation on at least one MAYSI-2 scale. The sex differences in the mental health functioning of juvenile detainees were generalizable; holding consistent across the 283 participating sites. These sites included 141 intake probation offices from 7 states, 91 pretrial detention sites from 16 states, and 51 secure corrections sites from 12 states.

Researchers have also found sex differences in the mental health disorders of juvenile offenders. Teplin and colleagues (2002) found that nearly three-quarters of girls versus two-thirds of boys in the juvenile justice setting met the diagnostic criteria for a current mental health disorder. Further, single and comorbid psychiatric disorders, including substance abuse disorders, major depressive episodes, and

anxiety disorders, were more likely exhibited by girls than boys (Teplin et al., 2006). A body of extant research suggests that regardless of age and ethnicity, girls in the juvenile justice system evince a higher prevalence of mental health disorders than boys and that these problems linger into adulthood (Kataoka et al., 2001; McCabe, Lansing, Garland, & Hough, 2002; National Research Council and Institute of Medicine, 2001; Nordness et al., 2002; Teplin, 2001; Teplin, et al.7, 2002; Timmons-Mitchell et al., 1997).

Sex differences have been found in the frequency and nature of contact with the juvenile justice system. The first difference between boys and girls in the juvenile justice system is that girls are more frequently referred to juvenile court for maltreatment in childhood and adolescence than boys. Not only is maltreatment in childhood, adolescence, or both childhood and adolescence a common etiological risk factor for mental health problems, but for juvenile delinquency as well. Researchers of The Office of Juvenile Justice and Delinquency Prevention's (OJJDP's) Program of Research on the Causes and Correlates of Delinquency longitudinally examined the delinquent behavior of more than 4,000 subjects ranging in age from 7 to 30 over the course of nearly two decades. Maltreatment (e.g., physical abuse, sexual abuse, neglect) occurring at some point prior to age 18 was found to be a key risk factor for delinquency. Percentages of youth who were never maltreated and maltreated in childhood only had arrest records of 21.3 and 23.5 percent, respectively. Whereas, the percentages of arrest rates among those maltreated during adolescence only (50.7%) or both childhood and adolescence (50.0%) were significantly higher than those never maltreated or maltreated only during childhood. In their meta-analysis on variables that predict juvenile recidivism, Cottle and colleagues (2001) found the most predictive family and social factor contributing to juvenile recidivism to be childhood maltreatment.

Several other sex differences have been found in the frequency and nature of contact with the juvenile justice system. Girls are more likely to be detained for status offenses (e.g., runaway, truancy, underage drinking) and boys for non-status offenses (offenses that would be considered adult crimes such as burglary, unlawful possession of firearm, arson, or sexual misconduct). Girls also tend to be younger on average and more frequently referred to juvenile court by family members rather than by law enforcement officers (Bergsmann, 1994; Chesney-Lind, 1989; Loper, 2000; Prescott, 1998; Snyder & Sickmund, 1999; U.S. Department of Justice, 1997). Researchers have found that boys are more likely to recidivate than girls (Barrett, Katsiyannis, & Zhang, 2006; Dembo et al., 1998). Yet trend studies indicate that while juvenile crime rates decreased over the past two decades, the number of girls involved in the juvenile justice system is rising dramatically (American Bar Association and National Bar Association, 2001; Snyder, 2001; Snyder and Sickmund, 2006).

Although researchers have contributed a great deal to our understanding of sex differences in the mental health and juvenile court histories of juvenile offenders, many research questions remain. It is unclear how differences in the mental health symptoms of boys and girls in the juvenile justice system impact the frequency and nature (status and non-status offenses) of their contacts with juvenile court. In this context, there were three purposes of the present investigation: 1) To confirm sex differences in the mental health symptoms of girls and boys in a northwest juvenile court using the MAYSI-2; 2) to examine sex differences in the amount of status offenses and delinquency covarying for ethnicity and juvenile court history (e.g., abuse/neglect, age of first contact); and 3) to explore sex differences on the MAYSI-2 mental health symptoms in predicting juvenile court contacts controlling for maltreatment, age of first referral, and ethnicity.

Method

Participants

A juvenile court in one large Northwestern county sought researcher assistance in conducting an assessment of the mental health needs of juvenile offenders. Therefore, from July 1st, 2003 to July 1st 2004, secondary analysis of existing mental health and juvenile justice data was conducted on 669 juvenile offenders referred to a Northwest juvenile court. Juvenile justice data was separated into two categories: status offenses and non-status offenses (i.e., delinquency). Juveniles procure status offenses because of the prohibition of various acts due to the offender's status as a juvenile. This includes underage alcohol consumption, violation of curfew, truancy, and general at-risk youth behavior. Status offenses are generally viewed as a warning sign that assistance and services may be needed. In contrast, juveniles receive non-status offenses when incarcerated due to violation of the law and commitment of a crime. We refer to non-status offenses as 'delinquency' in this article.

In this one year time period, 535 youths (86%) had one offense and 92 (14%) had more than one offense. Data from the most recent offense was used in the analyses for those 92 with multiple offenses. The average age at first offense was 13.9 years (*SD* = 2.1). A total of 245 (37%) were female, 424 (63%) were male, and the mean age of participants was 15.3 years (*SD* = 1.7). Ethnic breakdowns were 63% Caucasian, 24% African American, 7% Hispanic, 3% Native American, and 3% Asian American. This demographic information did not vary greatly from the overall state demographic information. Gang affiliation demographic data was not collected in this study.

Including current and prior status offenses, the 669 youths accounted for a total of 5,548 status offenses, with the average number of status offenses per youth being 8.2 (*SD* = 7.92) and a range of 1 to 42. The average number of non-status offenses committed by youths was 3.4 (*SD* = 3.0), with a range of 0 to 22. Severity of offense was measured using a scale developed by the juvenile court participating in the study. The severity of the current offense rating scale ranged from 0 (e.g., Curfew Violation) to 9 (e.g., Aggravated Murder I). Severity of current offense ranged from 0 to 9, with an average of 2.9 (*SD* = 2.4). Average length of stay was 14.1 days (*SD* = 22.7). Table 1 summarizes the demographic characteristics of the sample population.

Measures

Massachusetts Youth Screening Instrument - Version 2 (MAYSI-2; Grisso & Barnum, 1998). The MAYSI-2 is frequently used in juvenile justice facilities to screen for potential mental health issues. The MAYSI-2 is a standardized, 52-item, true-false, self-report, paper-and-pencil, screening tool that was designed for youth between 12 and 17 years old. The MAYSI-2 takes 10-15 minutes to administer. It is not a diagnostic instrument; rather, it serves as a "triage" tool to assist juvenile justice staff in making decisions about intervention and other service needs at time of intake. MAYSI-2 scales include Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicide Ideation, Thought Disturbance, and Traumatic Experiences. Results of these scales can indicate individuals who may be susceptible to severe mental health disorders. If individuals are at risk they may be designated with SPS Level 3 status. SPS Level 3 status is determined in three ways, as outlined by the authors of MAYSI-2: (a) Suicide Ideation scale scores of 3 or greater (i.e., warning zone); (b) Angry-Irritable scale scores of 8 or greater (i.e., warning zone); or (c) two or more MAYSI-2 scale scores falling in the warning zone, excluding the Suicide Ideation scale score (Grisso & Barnum). The warning zone cutoff score for the Alcohol/Drug Use and Somatic Complaints scales is 7 or greater, and the cutoff for the Angry/Irritable and Depressed/Anxious scales is 8 or greater. Individuals with scores at SPS Level 3 require greater attention and vigilance by staff due to greater risk of aggression and impulsive acts. The MAYSI-2 is psychometrically sound. The reported test-retest reliability coefficients range from 0.53 to 0.89, and the

internal consistency has ranged from 0.61 to 0.86. In terms of predictive validity, MAYSI-2 scores were found to predict future behaviors, including facility maladjustment, assignment to mental health professionals, and intervention by staff for suicide risk, assault, and sexual offenses (Grisso, Vincent, & Seagrave, 2005).

Juvenile court history. Juvenile court records were searched to obtain the following information: (a) age at first offense; (b) length of stay for current offense; (c) cumulative status offenses; (d) cumulative non-status offenses; (e) the severity of the current offense, and (f) documented history of abuse/neglect according to juvenile court records.

Procedures

The MAYSI-2 self-report was administered to 669 juvenile offenders at intake into the juvenile justice system of this Northwestern County from July 2003 to July 2004. The 52 items were read to each youth by the facility therapist within 48 hours of intake. The youths responded to each question by circling a yes or no on the answer sheet as to whether the item had been true for them within the last few months. Following database entry of these results, research assistants conducted agreement checks to ensure accuracy and corrected any errors. Inter-rater agreement was 98%.

Results

The three purposes of the present investigation were to: 1) To confirm sex differences in the mental health symptoms of girls and boys in a northwest juvenile court using the MAYSI-2; 2) to examine sex differences in the amount of status offenses and delinquency covarying for ethnicity and juvenile court history (e.g., abuse/neglect, age of first contact); and 3) to explore sex differences on the MAYSI-2 mental health symptoms in predicting juvenile court contacts controlling for maltreatment, age of first referral, and ethnicity. Results broken out by each purpose of the study are reported next.

Table 1 *Demographic Characteristics of 669 Juvenile Offenders*

Category	Male	Female	1 SO	>1 SO	Mean Age	Age at First Referral
Total Sample	424	245	535	92	15.3 (*SD* = 1.7)	13.9 (*SD* = 2.1)
Percent	63%	37%	86%	14%		

Category	Caucasian	African Amer.	Hispanic	Asian Amer.	Native Amer.	Total
Total Sample	418	161	46	23	23	669

Percent	63%	24%	7%	3%	3%	100%

SO = Status Offense.

Purpose 1: Confirming Sex Differences in Mental Health Symptoms

Chi-square analyses were conducted to determine whether the differences in the proportions of boys and girls with MAYSI-2 scale scores falling in the caution or warning zone were statistically significant (see Table 5). A score in the caution or warning zone indicates that the youth needs services in that area and that the problems for the youth in the area in question are clinically significant. The percentages of girls compared to boys with scores in the caution or warning zones on the Alcohol/Drug Use and Angry/Irritable scales were 29% and 27%, and 51% and 38%, respectively. The percentages of girls compared to boys with scores in the caution or warning zones on the Depressed/Anxious, Somatic Complaints, and Suicide Ideation scales were 41% and 35%, 51% and 46%, and 35% and 24%, respectively. Statistically significant differences were found in the higher proportions of girls compared to boys whose scores fell in the warning or caution zones on the Angry/Irritable and Suicide Ideation scale scores.

Table 2 *Chi Square Analysis of Sex Differences in the Massachusetts Youth Screening Instrument (MAYSI-2) Subscale Scores*

Scale Scores	Boys	Girls
Scale Scores in the Caution or Warning Zones		
Alcohol / Drug Use	27%	29%
Angry / Irritable	38%	51%
Depressed / Anxious	35%	41%
Somatic Complaints	46%	51%
Suicide Ideation	24%	35%
Scale Scores Warranting Level 3 Suicide Prevention Status		
Angry / Irritable	10%	14%
Suicide Ideation	18%	27%
Two or More Scale Scores in the Warning Zone (not including Suicide Ideation)	21%	25%
SPS Level 3 Designation Warranted Via Any of the Above Three Methods	30%	39%

N = 669.

Chi-square analyses were conducted to determine whether the differences in the proportions of boys and girls whose MAYSI-2 scores warranted Level 3 Suicide Prevention Status (SPS), which requires the highest degree of supervision and resources, were significant. The percentages of girls and boys with Suicide Ideation scale scores in the warning zone were 27% and 18%, respectively. A statistically significant difference was found in the proportion of girls compared to boys whose scores fell in the warning zone on the Suicide Ideation scale ($?^2$ = 7.7, 1, N = 710, p < .01). The percentages of girls and boys with Angry Irritable scale scores in the warning zone were 14% and 10%, respectively. The percentages of girls and boys with two or more MAYSI-2 scale scores falling in the warning zone (not including Suicide Ideation) were 25% and 21%, respectively. The percentages of girls and boys whose scores warranted SPS Level 3 designation using any of the described criteria were 39% and 30%, respectively. Statistically significant differences were found in the proportions of girls and boys whose scores warranted SPS Level 3 designation favoring girls for this designation ($?^2$ = 6.6, 1, N = 710, p < .05).

Table 3 *Demographic Characteristics by Status Offense and Non-Status Offense Categories*

Category	Girls	Maltreatment	Age at First Contact	Total	n
			Status Offenses		
Low (0-3)	14%	2%	14.9[a] (SD = 1.7)***	35%	234
Med. (4-9)	13%	3%	13.9 (SD = 1.9)	33%	220
High (10-42)	9%*	6%***	12.8 (SD = 1.9)	32%	215
Total	37%	11%			
n	245	70			669
			Non-Status Offenses		
Low (0-1)	15%	2%	15.1 (SD = 1.7)***	32%	217
Med. (2-3)	15%	3%	14.1 (SD = 1.7)	35%	237
High (4-22)	8%***	5%***	12.6 (SD = 1.9)	32%	215
Total	37%	11%			
n	245	70			669

Statistical significance is noted by * $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$ for comparisons between category and demographic variables. [a] denotes mean.

Table 4 *Repeated Measures Multivariate Analysis of Covariance of the Massachusetts Youth Screening Instrument (MAYSI-2) Subscale Scores by Status Offense and Non-Status Offense Categories*

Effect	Wilks' Lambda	*F*	Degrees of Freedom	*p*-value
		Status Offenses and Covariates		
MAYSI	.989	1.41	5, 655	.217
MAYSI x age [a]	.976	3.24	5, 655	.007**
MAYSI x ethnicity [b]	.992	1.00	5, 655	.412
MAYSI x sex	.992	2.41	5, 655	.035*
MAYSI x maltreatment[c]	..988	1.54	5, 655	.175
MAYSI x status offenses	.884	8.32	10, 1312	.0001***
		Non-Status Offenses and Covariates		
MAYSI	.990	1.27	5, 655	.272
MAYSI x age	.979	2.76	5, 655	.017*
MAYSI x ethnicity	.992	1.00	5, 655	.421
MAYSI x sex	.983	2.24	5, 655	.049*
MAYSI x maltreatment	.989	1.51	5, 655	.184
MAYSI x n.s. offenses	.918	5.72	10, 1310	.0001***

N = 669. [a] Age of first referral. [b] Ethnicity was coded as any ethnicity that was non-Caucasian. [c] Any confirmed childhood maltreatment..
Statistical significance is noted by * $p \leq .05$, ** $p \leq .01$, and *** $p \leq .001$ for comparisons between category and demographic variables.

Purpose 2: Sex Differences in Amount of Status Offenses and Delinquency

Prior to conducting multivariate statistical analyses, a frequency distribution was conducted on two dependent variables of interest: number of prior status offenses and number of prior non-status offenses (i.e., delinquency). The distributions of these variables yielded positively skewed distributions with the majority receiving only one status offense (n = 133, 20%) and one non-status offense (n = 203, 30%). However, the range on these variables was quite large with previous status offenses ranging from 1 to 42 and non-status offenses ranging from 0 to 22. Because the distributions were positively skewed,

they were divided into thirds and represented by interval scales: Low, Medium, and High. Table 2 shows the demographic characteristics of sex and ethnicity and covariates of interest (i.e., maltreatment and age of first referral) by the status offense and non-status offense categories (i.e., Low, Medium, and High) for the 669 participating youth. Statistical analysis of these demographic variables showed that girls were less likely than boys to be represented in either of the High categories of status offenses or non-status offenses. Those with a prior history of abuse were more likely to be represented in the High categories of both status and non-status offenses than those without prior history of abuse. In addition, age of referral was higher for both the Low categories of status and non-status offenses.

Purpose 3: Predicting Delinquency and Status Offenses

Two repeated-measures multivariate analyses of covariance (MANCOVA) of the MAYSI-2 scales were conducted as profile analyses (see Tabachnick & Fidell, 2001). We used these analyses to determine whether the Low, Medium, and High category distinctions of status and non-status offenses were reliably discriminated on the clinical subscales when statistically controlling for age of first referral, non-Caucasian ethnicity, gender, and history of maltreatment (Tabachnick & Fidell, 2007). Rationale for this grouping mechanism was based on the samples data in terms of the dependent measures. Table 4 shows the results of these analyses. There were statistically significant covariate effects of age of first status offense and sex as well as effects of status and non-status offense categories on MAYSI-2 subscales.

Parameter estimates for the analysis with *status offense category* tested the relative contribution of each covariate and the Low, Medium, and High categories on each MAYSI-2 scale. For the Alcohol/Drug Use scale, the High status offense category group scored significantly higher on alcohol and drug use ($t = 7.03$, $p < .001$). For the Angry/Irritable scale, girls scored significantly higher than other groups ($t = -3.47$, $p < .001$). For the Depressed/Anxious scale, girls scored significantly higher than other groups ($t = -2.64$, $p < .01$). There were no reliable predictors on the Somatic Complaint scale. On the Suicide Ideation scale, girls scored higher than other groups ($t = -3.27$, $p < .001$). On the last MAYSI-2 subscale, Traumatic Experiences, the High status offense category group scored significantly higher than other groups ($t = 2.06$, $p < .05$), and girls scored reliably higher as well ($t = -3.34$, $p < .001$). Overall, the High status offenses group scored higher on the Alcohol/Drug Use scale and on the Traumatic Experiences scale than Low and Medium status offenses groups. Girls scored reliably higher than other groups on the Angry/Irritable scale, the Depressed/Anxious scale, the Suicide Ideation scale, and the Traumatic Experiences scale. These results suggest a differential effect by gender on many of the MAYSI-2 subscales.

Parameter estimates for the analysis with *non-status offense category* tested the relative contribution of each covariate and the Low, Medium, and High categories on each MAYSI-2 subscale. For the Alcohol/Drug Use scale, the High non-status offenses group scored significantly higher on alcohol and drug use ($t = 5.41$, $p < .001$) as did the Medium group ($t = 3.08$, $p < .01$). For the Angry/Irritable scale, girls scored significantly higher than other groups ($t = -3.44$, $p < .001$). For the Depressed/Anxious scale, girls scored significantly higher ($t = -2.47$, $p < .05$), as did younger subjects ($t = 2.18$, $p < .05$), and the High group category ($t = 2.36$, $p < .05$). There were no reliable predictors on the Somatic Complaint scale. On the Suicide Ideation scale, girls scored higher ($t = -3.17$, $p < .01$) and the High non-status offenses group ($t = 2.12$, $p < .05$) scored higher than other groups on this scale. On the Traumatic Experiences scale, the Medium non-status offenses category group scored significantly higher ($t = 3.06$, $p < .05$) and girls scored reliably higher than other groups ($t = 3.59$, $p < .001$). Overall, the High status offense group scored higher on the Alcohol/Drug Use scale, the Depressed/Anxious scale, and

the Suicide Ideation scale. However, the Medium non-status offenses group also scored high on the Alcohol/Drug Use scale and higher than the High non-status offenses group on the Traumatic Experiences scale. Girls scored reliably higher on the Angry/Irritable scale, the Depress/Anxious scale, the Suicide Ideation scale, and the Traumatic Experiences scale. These results also suggest a differential effect by sex on many of the MAYSI-2 subscales and a diffuse effect by the non-status offense category variable.

Discussion

The primary purposes of this study were to: 1) Confirm sex differences in the mental health symptoms of girls and boys in a northwest juvenile court using the MAYSI-2; 2) to examine sex differences in the amount of status offenses and delinquency covarying for ethnicity and juvenile court history (e.g., abuse/neglect, age of first contact); and 3) determine whether sex-related differences in mental health symptoms predict delinquency and status offenses controlling for maltreatment, age of first referral, and ethnicity. Several findings from this study warrant discussion.

First, results confirm a differential effect by sex on many of the MAYSI-2 scales, including Angry/Irritable, Depressed-Anxious, Suicide Ideation, and the Traumatic Experiences. Girls had more clinically and statistically significant problems on all five scales of the MAYSI-2 (Angry/Irritable, Depressed/Anxious, Suicide Ideation, Alcohol/Drug Use, and Somatic Complaints) that yield caution and warning scores. A higher percentage of girls needed mental health services (scores falling in the caution or warning zone) in accordance with the MAYSI-2 protocol. Moreover, the prevalence of juvenile offenders with scores warranting Suicide Prevention Status (SPS) Level 3 was significantly higher for girls than for boys (39% to 30%), and Suicide Ideation scale scores in the warning zone were 27% for girls and 18% for boys ($?^2 = 7.7$, 1, $N = 710$, $p < .01$). The significantly higher proportion of girls warranting SPS Level 3 designation may be attributable to the severity and prevalence of depressive disorders among girls (e.g., the likelihood of depression among girls is double that of boys in adolescence), in general and female juvenile offenders in particular, or that the MAYSI-2 over represents girls in this category (Hankin et al., 1998; Linehan, Heard, & Armstrong, 1993). These youths yielding SPS Level 3 designation due to depression must be provided the support they need, as the incidences of suicide attempts peaks during the mid-adolescent years, and mortality from suicide, which increases steadily through the teens, is the third leading cause of death in that age range (Centers for Disease Control and Prevention, 1999; Hoyert, Kochanek, & Murphy, 1999).

Second, age at first juvenile offense was predictive of the mental health profiles and was higher for both the Low categories of status offenses and non-status offenses. Coinciding with the present investigation, Cottle and colleagues (2001) found that younger age at first commitment ($Zr = -.35$, $p < .001$) and first contact with the law ($Zr = -.34$, $p < .001$) were the two biggest predictors of recidivism. These data align with a body of research on antisocial boys. Researchers have found that youth who start offending at age 12 years or younger (i.e., early starters) tend to be those with the greatest number of offenses, referrals, and the most recalcitrant, "life course persistent" antisocial behavior patterns (Moffitt, 1993; Phillips et al., 2005; Piquero, Paternoster, Brame, Mazerolle, & Dean, 1999; Walker, Ramsey & Gresham, 2004). For example, Patterson, Reid, and Dishion (1992) found that 100% of boys arrested before age 10 years had at least 3 arrests before reaching age 17 years. Similarly, in a longitudinal investigation of 80 boys who were at risk of antisocial behavior, Walker and colleagues (1987) found that the severity of the first offense and the age of the first arrest were the best predictors of recidivism. Our findings coincide with this body of research.

Third, effects of status and non-status offense categories on the MAYSI-2 were found. Specifically, Alcohol/Drug Use scale scores were reliably higher for both the High status and non-status offenses groups. Researchers have found that at least half to two-thirds of youths in the juvenile justice system have substance abuse problems (Teplin et al., 2002). Despite the large numbers of youths in the

juvenile justice system with substance abuse problems, approximately 75% to 80% of youths receive no substance abuse services (NMHA, 1999). Moreover, researchers have found suicidality and substance dependency influence rates of recidivism (Office of Juvenile Justice and Delinquency Prevention, 1998; Stoolmiller & Blechman, 2005).

Limitations

This study was limited in several ways. First, the mental health of juvenile offenders was studied with the MAYSI-2. This measure is technically adequate and a widely-used self-report screening tool in the juvenile justice system, but the results of this study may have changed if caregiver and/or professional reports and diagnostic assessments of mental health functioning were used. Moreover, it was the only measure of mental health used. Additionally, given that we used existing data, we were unable to assess the mental health of juvenile offenders using other methods, scales, and informants such as parents or teachers of these youth. Replications are necessary using different measures and informants of youth mental health functioning, including measures that incorporate the mental health records of juvenile offenders. Such research should incorporate both deficit-oriented and strength-oriented instruments. Second, the range of variables available to enter into the repeated-measures multivariate analysis of covariance profile analyses was relatively restricted. A more complete set of demographic, developmental, contextual, and biological variables may have revealed more about the factors that influence the recidivism of juvenile offenders. Third, the nature of our research does not allow us to make causal comparisons. Experimental research is needed to clarify the nature of the relationship between the mental health and recidivism of juvenile offenders. Fourth, participants were from one Northwestern juvenile court and were therefore not representative of youth in the juvenile justice system nationwide. Finally, the study was limited by the analyses used to examine the purposes of our research. Researchers of future studies on this topic may consider examining the interrelationships between demographic, juvenile history, recidivism, and mental health; and should use techniques such as structural equation modeling. This technique allows for the simultaneous examination of a series of interrelated dependence relationships (Hair, Black, Babin, Anderson, & Tatham, 2006).

Implications

There are several noteworthy implications of this study. First, female offenders are at higher risk of mental health disorders than their male counterparts. Researchers have found that 85% of female offenders required mental health services and their treatment needs increased over time; only 27% of boys required such services (Prescott, 1997). Not only are girls the fastest growing sector of the American criminal justice system, but also their crimes are becoming increasingly more serious and more violent (Snyder, 2001; Sondheimer, 2001). Findings from this study underscore the importance of gender-specific programming for girls in the juvenile justice system. Although the needs of adolescent girls are complex and unique, the National Mental Health Association (2004) has detailed such programming. These practices include addressing relationship issues (e.g., family, boyfriend, and children), building appropriate coping strategies, treating comorbid mental health disorders, and providing education (e.g., job training, communication skills). Fostering strong social support networks and developing healthy, positive social relationships are of central importance in treatment programming for girls (Walker et al., 2004).

Second, the results of this study emphasize the need for individualized, coordinated services (case management) within a system of care framework for juvenile offenders, particularly girls. In February 1990, the Council on Scientific Affairs of the American Medical Association expressed concern about the lack of treatment options for mentally ill detainees in the juvenile justice system (Council on Scientific Affairs, 1990). These sentiments have been echoed repeatedly since that time (Bilchik, 1998). Girls are in need of appropriate diagnostic and treatment tools given they often manifest internalizing mental

disorders that are easily overlooked and therefore go untreated (Nordness et al., 2002). Moreover, the NMHA studies found that the services received by youths in the juvenile justice system are inadequate, fragmented, and disorganized (Cocozza & Skowyra, 2000; NMHA, 1999).

Third, we underscore the importance of useable and psychometrically sound screening and diagnostic measures of mental health functioning in juvenile justice populations. Given that mental health records of youth are rarely available to juvenile detention centers at intake, the need for juvenile justice systems to provide appropriate mental health screening and assessment becomes essential to providing appropriate treatment (Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001). Screening should occur within 24 hours of admission to a juvenile facility (Teplin et al., 2002). Unfortunately, the National Report for Juvenile Victims and Offenders stated that in 2002, mental health screening tools were used to evaluate every juvenile admitted in only 53% of facilities, while 13% of such organizations failed to evaluate any juveniles admitted (Snyder & Sickmund, 2006).. Therefore, the critical next steps should be a formal clinical evaluation to pinpoint areas of need and the development of an individualized treatment plan to address these needs. The NMHA (2004) found that when individualized, evidence-based mental health treatment is provided to deviant youths, recidivism rates are reduced by as much as 80%. Our findings underscore the importance of pinpointing treatment needs and addressing them when the first referral or arrest is made.

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Predicting the Cumulative Recidivism of Juvenile Detainees

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Abstract

The primary purpose of this research was to identify the most robust set of factors contributing to the recidivism of juvenile detainees; including demographic, court history, mental health, substance abuse, and maltreatment variables. Recidivism in this paper is defined as having received more than one status offense or non-status offense. Status offenses are incurred because of the prohibition of various acts due to the offender's status as a juvenile (e.g., alcohol consumption, violation of curfew, or truancy). Non-status offenses (i.e., delinquency) are incurred because of violation of the law and commitment of a crime. The study population included 761 juvenile offenders in the Northwest. Juveniles who had a history of childhood maltreatment, above average use of alcohol/drugs, and experienced traumatic experiences were four times (4.22 odds ratio) more likely to have repeated juvenile status offenses. Further, sex and suicide ideation increased the likelihood of committed repeated non-status offenses by 6.5 times. Findings, limitations, and implications are discussed.
Keywords: MASYI, Juvenile, Recidivism

Introduction

There is growing interest in identifying factors that predict juvenile detainee's recidivism (Cottle, Lee, & Heilbrun, 2001). Recidivism in this paper is defined as having received more than one status offense or non-status offense. Status offenses are incurred because of the prohibition of various acts due to the offender's status as a juvenile (e.g., alcohol consumption, violation of curfew, or truancy). Non-status offenses (i.e., delinquency) are incurred because of violation of the law and commitment of a crime. Identifying factors that predict juvenile detainee's recidivism can be quite informative in designing assessment tools for screening and intervention planning with this population. Certain demographic, mental health and substance use factors place juvenile detainees at risk for recidivism (Widom & Maxfield, 2001). Cottle and colleagues (2001), for example, found that being male and from a low socioeconomic background placed youth at risk for recidivism. Youth who demonstrate conduct disorders are also at risk for recidivism (Cocozza & Skowyra, 2000). Family factors such as parental mental health and substance abuse histories, marital discord, child maltreatment and parenting styles are strong predictors of juvenile detainee's recidivism (Cottle et al.). None of these factors alone is likely to lead to recidivism, more than likely it is the presence of several of these variables working together that leads to juvenile detainee's recidivism. Further, there is little doubt that it is likely that there are reciprocal interactions between and among multiple factors for juvenile detainee's recidivism. For example, a youth who has a conduct disorder may not reoffend if they have parents who have outstanding parent management skills and are not impacted by family problems (e.g., family psychopathology); whereas, such a youth may evidence recidivism if they have parents who lack parent management skills and are impacted by family problems. It is of interest to identify robust sets of factors predictive of juvenile detainee's recidivism.

Researchers have studied the relationships between demographic variables (e.g., sex, ethnicity), offense history (e.g., age at first contact with law, age at first commitment), family and social factors (e.g., victim of physical or sexual abuse, parental pathology), educational factors (e.g., history of special education, school attendance), standardized test scores (i.e., achievement and IQ test scores), substance abuse history, and clinical factors (e.g., severe pathology such as psychosis and suicidality, nonsevere pathology such as conduct problems) on juvenile recidivism (Cottle et. al., 2001). Cottle and colleagues reported that the most predictive family and social factors contributing to juvenile recidivism was childhood maltreatment inclusive of physical and sexual abuse and childhood neglect. For example, Cottle et al reviewed five studies that found that maltreatment was a significant predictor of recidivism ($Zr = .11$, $p < .001$) (Archwamety & Katsiyannis, 1998; Dembo, Schmeidler, Nini-Gough, Sue, Borden, & Manning, 1998; Katsiyannis & Archwamety, 1997; Myner, Santman, Capelletty, & Perlmutter, 1998; Towberman, 1994). These data coincide with the work of Widom and Maxfield (2001) who found that children who had been maltreated or neglected had a 27% likelihood of being arrested as juveniles and

a 42% likelihood of being arrested as adults. Sampling from 315 arrested youth processed at a juvenile assessment center over a nearly 4 year time-span, Dembo, Schmeidler, & Childs (2007) found that physical maltreatment was associated with psychological problems and sexual victimization with being female, being older, and with substance use. Researchers have also found neglect to have more deleterious effects on recidivism than maltreatment (Kingree, Phan, & Thompson, 2003). Neglect is manifest in many ways including not accessing mental health services when warranted, not providing adequate supervision after prior detention experiences, and generally not setting behavioral expectations and monitoring compliance to them. Emotional and physical neglect increases risk for recidivism and antisocial behavior.

Although there is a growing understanding of the factors related to juvenile detainee's recidivism, most of the factors have been studied in isolation from one another (Cottle et al., 2001). The primary purpose of this research was to identify the most robust set of demographic (i.e., sex, ethnicity), juvenile court history (e.g., age of first offense), mental health, substance abuse, and childhood maltreatment factors on the juvenile detainee's recidivism. Specifically, generalized linear model (HGLM; Raudenbush, Bryk, Cheong, & Congdon, 2004, p. 94-139) was used to examine the contribution of these variables to two facets of recidivism: 1) the cumulative number of status offenses; and 2) the cumulative number of non-status offenses.

Method

Participants

Secondary analysis of existing mental health and juvenile justice data was conducted on 761 juvenile offenders referred to a juvenile court in the Northwest from July 1st, 2003 to July 1st, 2004. Of these, 568 youths (75%) had one juvenile status offense or non-status offense and 193 (25%) had more than one status offense or non-status offense during this timeframe. The mean age of participants was 15.3 (*SD* = 1.7). A total of 292 participants (38%) were female and 469 participants (62%) were male. Ethnic breakdowns were 63% Caucasian, 24% African American, 7% Hispanic, 3% Asian American, and 3% Native American.

The 761 youths accounted for a total of 6,379 juvenile status offenses. The average number of juvenile status offenses per youth was 8.4 (*SD* = 8.0). The average age at first offense ranged from 3.7 to 18.0, with an average age of 13.9 (*SD* = 2.0). Non-status offenses committed by youths ranged from 0 to 22, with an average of 3.4 (*SD* = 3.0). Severity of offense was measured using a scale utilized by the juvenile court participating in the study. The severity of the most current status offense or non-status offense rating scale ranged from 0 (e.g., Curfew Violation) to 9 (e.g., Aggravated Murder I). Severity of current offense ranged from 0 to 9, with an average of 2.9 (*SD* = 2.4). Average length of stay was 13.7 days (*SD* = 21.6). Descriptive statistics and tests of skewness for these variables are found in Table 1.

Measures

Juvenile Court History

Juvenile court records were searched to obtain the following information: (a) age at first offense; (b) length of stay for current offense; (c) cumulative non-status offenses; (d) cumulative juvenile status offenses; (e) the severity of the current offense, ranging from 0 (e.g., Curfew Violation) to 9 (e.g., Aggravated Murder I); and (f) documented history of maltreatment/neglect according to juvenile court records. Juveniles procure non-status offenses when incarcerated due to violation of the law and commitment of a crime. Juveniles receive status offenses in reaction to child maltreatment, truancy, and general at-risk youth behavior.

Mental Health, Substance Abuse, and Maltreatment

The *Massachusetts Youth Screening Instrument-Version 2* (MAYSI-2; Grisso & Barnum, 1998) was used to screen for potential mental health, substance use, and maltreatment factors. The MAYSI-2 is a standardized, 52-item, self-report, true-false, paper-and-pencil, brief screening tool designed for youths between 12 and 17. The self-report tool is administered to referred youth at intake into the juvenile justice system. The MAYSI-2 takes 10-15 minutes to administer. The MAYSI-2 is not a diagnostic instrument; rather it serves as a "triage" tool to assist juvenile justice staff in making decisions about intervention and other service needs at time of intake. MAYSI-2 scales include Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicide Ideation, Thought Disturbance, and Traumatic Experiences. Results of these scales can indicate individuals who may be susceptible to severe mental health disorders. The MAYSI-2 is psychometrically sound. The reported test-retest reliability coefficients range from 0.53 to 0.89, whereas the internal consistency has ranged from 0.61 to 0.86. In terms of predictive validity, MAYSI-2 scores were found in several studies to predict future behaviors, including assignment to mental health professionals, facility maladjustment, and staff interventions necessary for assault, suicide risk, and sexual offenses (Grisso, Vincent, & Seagrave, 2005).

Data Collection Procedures

Hard copies of the criminal records of each offense were printed. These data were combined with the MAYSI-2 scores and entered into a Statistical Program for the Social Sciences (SPSS) database. Agreement checks were conducted on all data entered into the SPSS database. Research assistants checked all data entered for accuracy following initial data entry and corrected any errors. Initial inter-rater agreement was 98%.

The MAYSI-2 was administered to 761 juvenile offenders from July 2003 to July 2004. It was administered within 48 hours of intake into a juvenile detention facility in the Northwest. The 52 items were read to each youth by the facility therapist. The youth responded to each question by circling a yes or no on the answer sheet as to whether the item has been true for them within the last few months.

Results

Statistical Analysis Strategy

The primary statistical method used in this study was a hierarchical generalized linear model (HGLM; Raudenbush, et al., 2004, p. 94-139) predicting the two recidivism measures (i.e., the number of prior status offenses and the number of prior non-status offenses), which were separately treated as 'count' outcome measures using a Poisson sampling model in a two-level HGLM model. The two-level HGLM is described below:

For Level-1, 'Y' is the number of offenses divided by 'B', the event rate fitted to a Poisson distribution, yielding 'L', the expected value of the offenses. The same equation is used to derive the error variance component 'V', yielding 'L' in regard to variance about the event rate. These two component equations are then used to derive the log of the event rate which is dependent measure, 'B0', predicted by the Level-2 variables. The equations for the Level-1 Model are presented below:

Level-1 Model

$E(Y|B) = L$

$V(Y|B) = L$

$\log[L] = B0$

The Level-2 prediction variables included six of the seven MAYSI-2 Clinical Subscales. The Thought Disturbance subscale was not used due to the very limited number of participants who responded to the items. In addition, the covariates utilized were prior history of maltreatment, age of first offense, nonwhite (as a generic marker of ethnicity), and sex. The last term (i.e., U0) in the equation is the error in the prediction of the outcome

measure. The first term was the intercept (i.e., G00) of all the prediction Level-2 model variables prior to the additive effects of the other covariates and MAYSI-2 subscales (i.e., G01 through G010). This is shown below:

Level-2 Model

B0 = G00 + G01*(Alcohol/Drug) + G02*(Angry/Irritable) + G03*(Depression/Anxiety) + G04*(Somatic Complaints) + G05*(Suicide Ideation) + G06*(Tramatic Events) + G07*(Maltreatment) + G08*(Age of First Offense) + G09*(Nonwhite) + G010*(Male) + U0

Table 1 *Descriptive Statistics of Continuous Variables including Z-score Tests of Skewness*

Variables	Min.	Max.	Mean	SD	Skewness	SE	Skewness Z-score
Alcohol/Drug	0	8	2.10	2.37	.809	.086	9.4
Angry/Irritable	0	9	3.97	2.77	.095	.086	1.1
Depressed/Anxious	0	9	2.20	2.04	.799	.086	9.3
Somatic Complaints	0	6	2.53	1.94	.205	.086	2.4
Suicide Ideation	0	5	1.19	1.73	1.144	.086	13.3
Thought Disturbance	0	9	0.59	1.01	2.771	.108	25.7
Traumatic Experiences	0	5	1.97	1.59	.334	.086	3.9
Age at first Offense	3.7	18	13.90	2.03	-.491	.088	-5.6
Prior Status Offenses	0	42	8.38	7.95	1.651	.088	18.8
Prior Juvenile Non-Status Offenses	0	22	3.37	3.03	2.116	.088	24.0

N = 761

The descriptive statistics of the variables used in the HGLM two-level model are shown in Table 1. The statistics include the minimum, maximum, mean, standard deviation, and skweness measures. By dividing the skewness statistic by the standard error, the corresponding z-score transformation is provided. Z-scores over $\pm$ 3.0 would suggest a distribution that is extremely skewed and could influence the results of multivariate statistical analyzes that might yield Type I or Type II errors (i.e., falsely rejecting the null hypothesis or accepting the alternative hypothesis when they are wrong) (Tabachnick & Fidell, 2007). Results in Table 1 show that 8 of the 10 measures were significantly skewed. Age of first offense was negatively skewed and the remainder of the skewed variables were positively skewed (i.e., with extreme scores or potential outlier scores obtained in the positive numerical direction). In addition, three dichotomous variables (i.e., male, nonwhite ethnicity, and presence of prior abusive treatment) were not included due to the nature of distribution of these variables. Therefore, additional statistical procedures were conducted to determine the influence of the outliers.

Table 2 *Prediction of the Number of Status Offenses using Demographic and MAYSI Clinical Subscale Variables*

Variable	Coef.	SE	T-ratio	Event Rate Ratio	Confidence Interval
Intercept	4.69	0.22	21.38***		
Male	0.06	0.06	1.003		
Nonwhite	0.06	0.06	0.996		
Age of First Offense	-0.21	0.01	-14.626***	0.81	(0.79, 0.84)
Maltreatment	0.22	0.09	2.418*	1.24	(1.04, 1.5)
Alcohol/Drug Use	0.11	0.01	8.548***	1.11	(1.09, 1.14)
Anger/Irritable	-0.02	0.01	-1.273		
Depression/Anxiety	-0.03	0.02	-1.617		
Somatic Complaints	-0.02	0.02	-1.198		
Suicide Ideation	-0.04	0.02	-1.889		
Traumatic Experiences	0.06	0.02	2.791**	1.06	(1.02, 1.10)

N = 761, approximate degrees of freedom = 750, * $p < .05$, ** $p < .01$, *** $p < .001$

Multivariate regression procedures offer several different ways to statistically test for outliers. The Mahalanobis distance is one of the most used and accepted procedures for the detection of outliers (Tabachnick & Fidell, 2007). It is the distance of a case from the centroid of the remaining cases. The centroid is the point created at the intersection of the means of all the variables in the multivariate statistical procedure. In essence, it creates a 'swarm' of case specific data points about the multidimentional space created by the means of the variables in the analysis. Tabachnick and Fidell (2007, p. 74) suggest a conservative probability estimate of $p < .001$ for the $?^2$ value is appropriate for detecting case specific outliers. The statistical equation for deriving the statistical significance using a $?^2$ distribution for each case is as follows:

$$\text{p-value} = \frac{\text{Mahalanobis distance}}{\text{N} - 1} + \frac{1}{\text{N}}$$

Two separate multiple regression equations were conducted: one using the dependent measure prior status offenses and the second prior number of juvenile non-status offenses and the variables described in the Level-2 HGLM Model. Results of these analyses yielded no case that was statistically significant at $p < .001$. Therefore all the cases were retained and the results of the two HGLM regressions using prior status offenses and prior juvenile non-status offenses were conducted.

Predicting the Probability of Prior Juvenile Status Offenses

The results of the HGLM analysis of prediction of the probability of prior status offenses are presented in Table 2. The intercept coefficient is the average number of prior status offenses absent the additive effects of the other variables in the model. The intercept was statistically significant, indicating that average number of prior status offenses was reliably greater than zero. The additive effects of the event rates for being male and of non-white ethnicity did not statistically contribute to the prediction. However, both prior history of maltreatment and age of first status offense did significantly contribute to the prediction. Prior history of maltreatment added to the events ratio at a rate of 1.24:1. Age of first offense was negatively associated with the prior probability of status offenses, indicating that as age of first status offense increased, the number of prior status offenses decreased. Therefore, the event rate ratio was less than one at .81:1.

Regarding the MAYSI-2 clinical scales, both the Alcohol/Drug Use scale and Traumatic Experiences scales added to the prediction of prior status offenses. This indicated that scores greater than the average score of 2.10 on the Alcohol/Drug Use scale and of 1.97 on the Traumatic Experiences scale positively contributed to the prediction of probability of prior status offenses at a rate of 1.11:1 and 1.06:1, respectively. When the additive components in the model are summed, juveniles with a prior history of maltreatment, elevated scores above the average on the MAYSI-2 scales of Alcohol/Drug Use and Traumatic Experiences would increase their odds of having more prior status offenses by a ratio of about 3.45:1 above the event ratio of 4.69 status offenses.

Table 3 *Prediction of the Number of Prior Adjudicated Juvenile Non-Status Offenses using Demographic and MAYSI Clinical Subscale Variables*

Variable	Coef.	SE	T-ratio	Event Rate Ratio	Confidence Interval
Intercept	3.34	0.23	14.705***		
Male	0.19	0.06	3.40***	1.2	(1.1, 1.3)
Nonwhite	0.04	0.05	0.732		
Age of First Offense	-0.18	0.01	-13.288***	0.8	(0.82, 0.86)
Maltreatment	0.25	0.11	2.32*	1.3	(1.0, 1.6)
Alcohol/Drug Use	0.07	0.01	6.109***	1.1	(1.0, 1.1)

Anger/Irritable	-0.00	0.01	-0.709		
Depression/Anxiety	-0.02	0.02	-1.203		
Somatic Complaints	-0.01	0.02	-0.569		
Suicide Ideation	-0.04	0.02	-2.191*	0.96	(0.93, 1.0)
Traumatic Experiences	0.05	0.02	2.817**	1.1	(1.0, 1.1)

N = 761, approximate degrees of freedom = 750, * $p < .05$, ** $p < .01$, *** $p < .001$

Predicting the Probability of Prior Juvenile Non-Status Offenses

Table 3 shows the results of the same statistical model using prior juvenile non-status offenses as the dependent measure. The intercept of the probability of prior juvenile non-status offenses was statistically significant and great than zero. Being male, age of first status offense and a history of maltreatment all statistically contributed to the prediction. Being male and a history of maltreatment contributed,1.2:1 and 1.3:1 to the prediction of prior juvenile non-status offenses, respectively. Again, age of first offense was inversely related to the odds .8:1.

Regarding the MAYSI-2 scales, both the Alcohol/Drug and Traumatic Experiences scales positively contributed to the prediction of a prior history of juvenile non-status offenses at a rate of 1.1:1. However, the Suicide Ideation scale negatively contributed at a rate of .96:1 in association of the ratio of prior juvenile non-status offenses, suggesting that juvenile offenders with a 3.34 or more prior non-status offenses was less likely to endorse items on the Suicide Ideation scale above 1.19.

Discussion

Several findings from this study warrant discussion. First, age at first offense was predictive of status offenses and non-status offenses. Coinciding with the present investigation, Cottle and colleagues found that younger age at first commitment ($Z_r = -.35$, $p < .001$) and first contact with the law ($Z_r = -.34$, $p < .001$) were the two biggest predictors of recidivism. These data align with a body of research on antisocial boys. Researchers have found that youth who start offending at age 12 or younger (i.e., early starters) tend to be those with the greatest number of non-status offenses, status offenses, and the most recalcitrant, "life course persistent" antisocial behavior patterns (Moffitt, 1993; Phillips et al., 2005; Piquero, Paternoster, Brame, Mazerolle, & Dean, 1999; Walker, Ramsey & Gresham, 2004). For example, Patterson, Reid and Dishion (1992) found that 100% of boys arrested before age 10 had at least 3 arrests before reaching age 17. Similarly, in a longitudinal investigation of 80 boys who were at risk of antisocial behavior, Walker and colleagues (1987) found that the severity of the first offense and the age of the first arrest were the best predictors of recidivism. Our findings coincide with this body of research.

Second, MAYSI-2 Alcohol/Drug Use and Traumatic Experiences predicted status offense and non-status offenses. This indicated that scores greater than the average score of 2.10 on the Alcohol/Drug Use scale and of 1.97 on the Traumatic Experiences scale positively contributed to the prediction of probability of prior status offenses at a rate of 1.11:1 and 1.06:1, respectively. Moreover, both scales positively contributed to the prediction of a prior history of juvenile non-status offenses at a rate of 1.1:1. Researchers have found that at least half to two-

thirds of youths in the juvenile justice system have substance abuse problems (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002). Despite the large numbers of youths in the juvenile justice system with substance abuse problems, approximately 75% to 80% of youths receive no substance abuse services (National Mental Health Association, 1999). Moreover, researchers have found suicidality and substance dependency influence rates of recidivism (Office of Juvenile Justice and Delinquency Prevention, 1998; Stoolmiller & Blechman, 2005). The findings of the current investigation coincide with this body of research. However, in contrast to the positive direction of the relationships between both Traumatic Experiences and Alcohol/Drug Use and our measures of recidivism, MAYSI-2 Suicide Ideation was inversely related to non-status offenses. Stated differently, we found that as MAYSI-2 Suicide Ideation scores increase (greater risk of suicide), the likelihood of cumulative non-status offenses reduces and vice versa.

Third, maltreatment/neglect predicted status offenses and non-status offenses. This finding aligns with a body of research indicating childhood maltreatment predicts recidivism, including the meta-analysis conducted by Cottle and colleagues (Archwamety & Katsiyannis, 1998; Dembo et al., 1998; Katsiyannis & Archwamety, 1997; Myner et al., 1998; Towberman, 1994). Moreover, researchers have found that maltreatment is strongly associated with criminal offending. For example, Widom and Maxfield (2001) found that maltreated children had a 27% likelihood of being arrested as juveniles and a 42% likelihood of being arrested as adults.

Finally, being male contributed, 1.2:1 to the prediction of prior juvenile non-status offenses. Researchers have found that males are more likely to recidivate than females (Barrett, Katsiyannis, & Zhang, 2006; Dembo et al., 1998), although studies of trends of juvenile recidivism indicate that while juvenile crime rates decreased over the past two decades, the number of female youths involved in the juvenile justice system has risen dramatically (American Bar Association and National Bar Association, 2001; Snyder, 2001; Snyder and Sickmund, 2006). Therefore, although being male predicted non-status offenses in the present investigation, one may question whether this will be the case a decade from now. Moreover, researchers have indicated that female juvenile detainees are more likely to be detained for status offenses (e.g., runaway, truancy, underage drinking) than their male counterparts (Bergsmann, 1994; Chesney-Lind, 1989; Loper, 2000; Prescott, 1998; Snyder & Sickmund, 1999; U.S. Department of Justice, 1997). We did not find sex to predict cumulative status offenses.

Limitations

This study was limited in several ways. First, the mental health of juvenile offenders was studied with the MAYSI-2. This measure is technically adequate and a widely used self-report screening tool in the juvenile justice system, but the results of this study may have changed if caregiver or professional reports and diagnostic assessments of mental health functioning were used. Moreover, our only measure of mental health was the MAYSI-2. Additionally, given that we used existing data we were unable to assess the mental health of juvenile offenders using other methods, scales, and informants such as parents or teachers of these youth. Replications are necessary using different measures and informants of youth mental health functioning, including measures that incorporate the mental health records of juvenile offenders. Such research should incorporate both deficit-oriented and strength-oriented instruments. Second, the range of variables available to enter into the repeated-measures multivariate analysis of covariance profile analyses was relatively restricted. A more complete set of demographic, developmental, contextual, and biological set of variables may have revealed more about the factors that influence the recidivism of juvenile offenders. Third, the retrospective nature of our research does not allow us to make causal comparisons. Longitudinal research is needed to identify the most robust set of factors that predict juvenile detainee's recidivism. Fourth, participants were from one Northwestern juvenile court and were therefore not representative of youth in the juvenile justice system nationwide. Fifth, the study was limited by the analyses used to examine the purposes of our research. Researchers of future studies on this topic may consider examining the interrelationships between demographic, juvenile history, recidivism, and mental health; and should use techniques such as structural equation modeling. This technique allows for the simultaneous examination of a series of interrelated dependence relationships (Hair, Black, Babin, Anderson, & Tatham, 2006). Finally, the findings of the study are restricted to those factors that predict juvenile detainee's recidivism. A similar line of research should be conducted to identify the most robust set of protective factors that increase the

resilience of juvenile detainees. A clear understanding of the characteristics, variables, and conditions present in individuals that enhance their resiliency and increase resistance recidivism would serve to advance assessment and intervention procedures for this population.

Implications

A clear message of the present study is that there are some factors that are reasonably accurate predictors of juvenile detainee's recidivism. Indeed, in the present study, among a host of factors, a relatively few number of factors (i.e., childhood maltreatment, age of first status offense, substance use, traumatic experiences, suicide ideation, sex) were found to be the most accurate predictors of juvenile detainee's recidivism. This suggests that juvenile professionals and developers of early screening tools for recidivism should consider including items that address these variables. The results of the present study suggest that these items will be highly predictive of juvenile detainee's recidivism and guide the development of strategic treatments when the first offense is made.

Second, the findings from the present investigation highlight the need for primary prevention and effective, gender-appropriate treatment for juvenile offenders. As discussed in the introduction, female offenders are at higher risk of mental health disorders than their male counterparts. The National Mental Health Association (2004) has articulated key components of programming for female juvenile detainees, with strong focus on cultivating strong social support networks and developing healthy, positive social relationships. The reader is encouraged to examine model and promising prevention and treatment programs that align with the findings of NMHA to provide effective and gender-specific programming. Clearinghouses such as Blueprints for Violence Prevention (http://www.colorado.edu/cspv/blueprints/), Centers for Disease Control and Prevention (http://www.cdc.gov/violenceprevention/youthviolence/), and the Office of Juvenile Justice and Delinquency Prevention (http://www2.dsgonline.com/mpg/) are useful online resources to identify such programs. The reader can search for gender-specific programs and compare their relative effectiveness, cost-benefit, and feasibility. A randomized clinical trial of one model prevention program, *Multidimensional Treatment Foster Care* (MTFC; Chamberlain, 2003), on 81 female juvenile offenders demonstrated efficacy of MTFC in preventing delinquency not only following the study, but two years later. Delinquency was measured by days in locked settings, number of criminal referrals, and self-reported delinquency (Chamberlain, Leve, & DeGarmo, 2007). Chamberlain and colleagues also found that older girls exhibited less delinquency over time relative to younger girls.

We underscore the importance of making useable and psychometrically sound screening measures of mental health functioning in juvenile justice populations business as usual. In alignment with extant literature, our findings indicate that alcohol/drug use and traumatic experiences predict cumulative recidivism. Given that mental health records of youth are rarely available to juvenile detention centers at intake, the need for juvenile justice systems to provide appropriate mental health screening and assessment becomes essential to meeting treatment needs and to reducing the likelihood of further status and non-status offenses (Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001). Mental health screening should occur within 24 hours of admission to a juvenile facility (Teplin et al., 2002). Unfortunately, the National Report for Juvenile Victims and Offenders found that in 2002, mental health screening tools were used to evaluate every juvenile admitted in only 53% of facilities, while 13% of such organizations failed to evaluate any juveniles admitted (Snyder & Sickmund, 2006). Our findings underscore the importance of pinpointing mental health treatment needs and addressing them when the first offense or arrest is made.

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Preventing Online Sexual Victimization of Youth

Sandy K. Wurtele & Maureen C. Kenny

Abstract

Current media accounts have highlighted the risks associated with Internet use for children and teens, often portraying it as a dangerous place, where sexual and other types of victimization can occur. This paper critically examines the extent of Internet-based sexual solicitations and victimizations and describes youths who appear to be most at-risk for sexual solicitation and stranger contact. Characteristics of online offenders are described. Current Internet-safety lessons are described, and suggestions for expanding prevention efforts are provided.
Keywords: Internet, sexual abuse, victim prevention, behavioral intervention for safety

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Introduction

The Internet is a valuable resource and teaching tool for everyone—children, teens, and adults. Children and teens can use it to conduct school research, find amazing information, experience new cultures, play games, watch videos, listen to music, get health and medical information, shop, and communicate with friends around the world. Surveys indicate that large numbers of youths use the Internet on a regular basis, starting at a young age. According to DeBell and Chapman (2006), 23 percent of nursery school children in the United States use the Internet and 32 percent of kindergartners go online. By high school, 87 percent of teens in the United States use the Internet, compared to 66 percent of adults (Lenhart, Madden, & Hitlin, 2005). More than 77 million children regularly use the Internet and they use it often—51 percent of teenagers use the Internet daily (Kierkegaard, 2007).

Although the Internet is a wonderful resource for youth, there are risks related to privacy, security, unwanted exposure to sexual material, and the potential for contact with sexual predators. Attempts to legislate online content in the U.S. have not been successful and the constitutional value of freedom of speech has prevailed (Lievens, 2007). Thus, protection of children and efforts to decrease the prevalence of these potential sexual offenses must come in the form of education. This paper reviews the risks of Internet use, specifically the risk of online sexual victimization. We first describe youth Internet activity, followed by a review of the characteristics of victims and offenders. Last, we conclude with recommendations for the prevention of sexual victimization which begins online.

Description of Youth Internet Activity

Youths browse the Internet for information, send e-mails and use instant messaging to communicate rapidly with people all around the world, and use social networking sites, such as MySpace.com, where they can create personal profiles, post images and writings, and link and communicate with friends. Profiles can include pictures and a description of their age, interests, hobbies, and personal information (including addresses of school and home). These profiles can have unrestricted access (becoming public information) or access can be restricted only to members of their contact list. Although MySpace users are expected to adhere to some "terms of use," the degree to

which sites are monitored for contacts is unknown. In an attempt to allow for creative expression, there are few limitations as to what can be posted online, and even less monitoring of contacts between users.

Social networking sites are very popular among adolescents. In a national survey of young people (ages 12 to 17), over half (55%) of respondents reported using such sites (Lenhart & Madden, 2007). Half of the teens surveyed said they used these sites to make new friends and about one in five stated they used them to "flirt" (Lenhart, Madden, MacGill, & Smith, 2007). Hinduja and Patchin (2008) explain how social networking sites provide a number of benefits for adolescents, including facilitating identity formation—a crucial developmental task during adolescence. Despite the many benefits, the explosive growth in the popularity of these sites has generated concerns among parents about the potential risks of posting personal information and contact with strangers, some of whom may be sexual predators. The media has fueled parental anxiety by warning parents about cyber predators who sift through online profiles and social networking sites to identify potential targets. Predators are portrayed in media accounts as contacting naïve young children, using deception to cover up their ages and sexual intentions, and then luring unsuspecting victims into meetings or stalking and abducting them (e.g., Filosa, 2007; Minaya, 2006; Rawe, 2006). An article in Newsweek claimed that the Internet has fostered a "shocking increase in the sexual exploitation of children" (Nordland & Bartholet, 2001, cover page). The following section addresses the accuracy of this negative attention by the popular media.

Extent of Sexual Solicitations and Victimizations

According to the research, being sexually solicited electronically by strangers is a relatively rare event for teenage Internet users. Two national surveys have determined the extent to which youth receive sexual solicitations from strangers. The First Youth Internet Safety Survey (YISS-1) was conducted in 2000 with 1501 youth Internet users and found that 19 percent of surveyed youth had received an online request to engage in sexual activities or sexual talk or to give personal sexual information to an adult (Finkelhor, Mitchell, & Wolak, 2000). YISS-2, conducted in 2005 with 1500 youth Internet users, found that online sexual solicitations had decreased to 13% (Wolak, Mitchell, & Finkelhor, 2006). Even fewer youths have face-to-face meetings with these strangers. According to a survey of adolescents conducted by the Adolescent Risk Communication Institute of the Annenberg Public Policy Center, few social network users (3.3 percent) reported actually meeting strangers offline. Only 2 percent of youths in YISS-1 reported online "romances" (defined as someone who the youth believed to be a boy or girlfriend; Wolak, Mitchell, & Finkelhor, 2003).

In contrast to media scares of children being abducted by online predators, research indicates that abduction is also rare. None of the victims in the National Juvenile Online Victimization (N-JOV) Study was abducted (Wolak, Finkelhor, & Mitchell, 2004). Instead, victims ran away to be with offenders. Hinduja and Patchin (2008) describe several cases of young teenage girls (14 to 16 years) who had face-to-face contacts with men they had met on social networking sites. In all cases, the girls went voluntarily to meet the men, and in all cases the girls were sexually victimized. Alarmingly, teens rarely inform their parents when they receive sexual solicitations online. Finkelhor et al. (2000) reported that only 25% of youths who received an online sexual solicitation informed a parent. Even more concerning, Livingstone and Bober (2005) report that only 7% of parents were aware that their teens had received sexual comments online. Many youths are afraid that their computers will be taken away from them if they disclose receiving inappropriate messages.

Characteristics of Youths at Risk for Sexual Solicitation and Stranger Contact

What kinds of youths are targeted? Contrary to media portrayals of naïve and innocent young children being at risk, the reality is that risk for online victimization increases with age. Almost all (99%) of the victims in the N-JOV Study were between 13 and 17 years old, and none was younger than 12 (Wolak et al., 2004). Most were either 13 or 14 years old.

Developmentally it makes sense for teenagers to be at higher risk than children under age 12. Younger children do not possess as many Internet skills as older youth and do not engage in as much complex and interactive Internet use (Livingstone, 2006). Younger children use the Internet in less interactive ways, preferring instead to visit websites or look up information. Additionally, younger children tend not to take as many risks with revealing their identity (name, age, gender), nor are they as likely to engage in contact with unknown people. In contrast, adolescents are much more likely to engage in these behaviors (Livingstone, Bober, & Helsper, 2005). Adolescents are also more curious about sexual matters and preoccupied with romantic concerns compared to younger children. They are also more independent and have more freedom to pursue online interests. Wolak, Finkelhor, Mitchell, and Ybarra (2008) report that "the factors that make youth vulnerable to seduction by online molesters are complex and related to immaturity, inexperience, and the impulsiveness with which some youths respond to and explore normal sexual urges" (p. 116). Teenagers are especially vulnerable to exploitation as they are generally curious, adventuresome, trusting, and eager for attention and affection (Kierkegaard, 2007).

Although girls are at higher risk than boys for Internet-initiated sex crimes, boys constitute 25% of victims (Wolak et al., 2004). Wolak et al. (2008) suggest that boys who identify themselves as gay or who are questioning their sexual orientations may be more susceptible to online victimization. By turning to the Internet to find answers to their questions about sexuality or to meet romantic partners they are at risk for being exploited by adult men.

It seems that teens who are "at risk" in the real world are at higher risk for online sexual victimization. High-risk youth—those who reported experiencing sexual abuse, physical abuse, or high parental conflict in the past year—were 2.5 times more likely to report receiving an aggressive online sexual solicitation than those who were not considered high-risk in YISS-2 (Wolak et al., 2006). Specifically, 28 percent of high-risk youth received aggressive sexual solicitation online compared to 11 percent of other Internet users. These youths were also more likely to engage in a pattern of risky online behaviors in their interactions with strangers, including making rude or nasty comments (called "flaming"), embarrassing others, and talking about sex with strangers. Ybarra, Mitchell, Finkelhor, and Wolak (2007) identified several risky online behaviors (i.e., interacting online with unknown people, having unknown people on a buddy list, talking online to unknown people about sex, seeking pornography online, being rude or nasty online) and found that sexual solicitation increased when youths engaged in these types of behaviors.

Similar findings were obtained by Wolak et al. (2003). These researchers examined youth Internet users who formed close relationships with people they met on the Internet. Adolescent difficulties predicted close online relationships. For both girls and boys, being highly troubled (a composite variable of high levels of depression and peer victimization) and being alienated from parents (defined as high levels of conflict with parents for girls and low levels of communication with parents for boys) predicted close online relationships. Youths with these problems showed a trend toward more online romances and face-to-face meetings (which were unbeknown to their parents).

Research has shown that youths who visit chat rooms are more at risk for receiving sexual solicitations, and troubled adolescents are more likely to visit chat rooms (Beebe, Asche, Harrison, & Quinlan, 2004). Adolescents who visit chat rooms are more likely to have conflict with their parents, to

suffer from depression and loneliness, to have previous histories of physical or sexual abuse, and to engage in risky behaviors (Beebe, et al., 2004; Wolak et al., 2008). Youths who are shy, socially inept, or have problems forming face-to-face relationships also frequent chat rooms (Peter, Valkenburg, & Schouten, 2005). Greenfield (2004) investigated teen chat rooms and found frequent and explicit conversations about sexuality. While visiting the chat room, she received several private instant messages, including a crude sexual advance. Even when she visited a monitored teen chat room, teens continued to talk about sex a lot of the time, but their sexual references were now coded (e.g., "Brentlyd: any fine ladies want to chat press 69 or im me"; Greenfield, 2004, p. 759).

Risk does not appear to be related to content of personal profiles. Many parents and school administrators are concerned about youths giving out personal details (Wishart, 2004), but research shows that posting personal information online is not associated with being sexually solicited online (Wolak et al., 2008). Indeed, Wolak and colleagues (2008) note that they know of no case of a sex offender stalking and abducting a minor on the basis of information posted on social networking sites. Instead, online molesters "seek youths who are susceptible to seduction" (p. 117). These authors conclude that "vulnerability appears to be distinguished more by interactive behavior than by online location or the posting of personal information" (p. 118).

Characteristics of Online Offenders

Like in-person sexual abuse, most perpetrators are males, and in the case of Internet-initiated sex crimes, most are adult men (Wolak et al., 2008). Predators meet adolescents in Internet chat rooms designed for teen use and oriented to specific geographic locations, dating and romance, gays, and in a few cases, to adult-minor sexual encounter sites. Offenders also target victims when their personal profiles include sexually suggestive screen names (e.g., HOTTIE4U) or descriptions (e.g., FLIRTYGRL) or when their MySpace pictures are sexually suggestive (e.g., posing in swimsuits or underwear) (Dombrowski, LeMasney, Ahia, & Dickson, 2004; Hinduja & Patchin, 2008). They also target youths who reveal in chat rooms that they have emotional difficulties (Dombrowski et al., 2004).

Most Internet-based sex crimes involve adult men who use the Internet in various ways (chat rooms, instant messaging, blogs, e-mail) to develop intimate relationships with adolescent victims (Wolak et al., 2008). Online grooming occurs when an offender contacts a youth and establishes a relationship with the teen by expressing enjoyment of similar interests and activities, or by offering a sympathetic "ear" to the teen's concerns (e.g., sexual orientation) or frustrations (e.g., school problems, parent conflict). Sometimes grooming involves flattery, sometimes sympathy, other times, offers of gifts, money, or ways to make money. As part of this grooming process, the online predator might present or exchange pornographic material for the purpose of desensitizing the teen to sexual material (Dombrowski et al., 2004). The sexual solicitation can also involve sexual talk, requests for personal information, or invitations to engage in sexual activity (Seto, 2008). Once the relationship has solidified and the perpetrator has gained the teen's trust, then the predator arranges offline contact, with the goal of having sex. For example, in a recent Florida case, a California teen (15 years) met a man (32 years) online who claimed to be in the entertainment industry and could help her "get a break." After talking online for months through MySpace, he flew her from California to Florida. Five hours after she arrived, police found her in the perpetrator's hotel room, the victim of sexual molestation (Moskovitz, 2008).

In contrast to the image of predators masquerading as teens, in reality very few offenders lie about their age or gender. Wolak et al. (2004) reported that only 5 percent of offenders pretended to be teens when they met potential victims online. Although they present themselves as adults, they sometimes misrepresent their age, by making themselves a few years younger. For example, Katie was

13 when she met 23-year-old Mark in a chat room for teens. When they later met in person, Mark turned out to be 41-year-old Francis Kufrovich, an investment funds company president (Burke, 2000). In addition, offenders rarely hide their sexual interests. Sexual contact is initiated online and when the in-person meetings take place, most victims go with the understanding that sexual contact is expected and planned. In the N-JOV Study, 73 percent of victims who engaged in sexual contact with offenders did so on more than one occasion (Wolak et al., 2003). In some instances the victims reported strong feelings and love for the offenders. In instances where deception is used, it often involves offenders promising love and romance while their true purpose is to have sexual contact (Wolak et al., 2008). As these researchers conclude, "Online molesters do not appear to be stalking unsuspecting victims but rather continuing to seek youths who are susceptible to seduction" (p. 117).

The N-JOV study demonstrated a relationship between online offenders and their victims that is quite similar to offline offending (Mitchell, Finkelhor, & Wolak, 2005). Namely, half of the adults who used the Internet to communicate with minors were friends of the family, acquaintances, family members or relatives, or neighbors. These offenders used the Internet to communicate privately with the youth. There was a significant difference between the targets of family members and acquaintances—family members primarily targeted girls below the age of 12, while acquaintances were more likely to target teenagers and boys. Thus, there is a difference between those who were using the Internet to solicit a known child and those who were trying to solicit teenage minors. Although many MySpace users set their profile to "private" (Hinduja & Patchin, 2008), which allows only friends on their list to access it, this may be creating a false sense of security. A potential perpetrator could be among that "buddy list" as the majority of victimizations against youths are committed by friends and acquaintances, rather than strangers. Additionally, about one third of youths surveyed included someone in their "buddy list" who they had only met online, not in person (Ybarra et al., 2007).

How to Prevent Online Sexual Victimization

Parents and school administrators often express concerns about children's safety while online (Livingstone, 2007; Turow, 1999; Wishart, 2004). Many parents report engaging in two types of activities to keep their children safe when surfing the Internet. Some monitor their children's Internet use by sharing this time with them, being in the same room as the child when the computer is in use, or installing software to filter objectionable material or track website or chat room histories. Other parents engage in discussions aimed at educating their children about potential online dangers. Adolescents surveyed by Liau, Khoo, and Ang (2005) were less likely to have face-to-face meetings with strangers when parents set an Internet rule never to arrange a meeting with someone they met online. Similarly, adolescents surveyed in Australia reported being more safety conscious when their parents had discussed Internet safety with them (Fleming, Greentree, Cocotti-Muller, Elias, & Morrison, 2006).

Current Educational Efforts

Our examination of Internet safety websites targeted at teenagers shows fairly consistent messages about online safety. One theme cautions teens about risky sites and modes of communication. For example, teens are being warned about the hazards of instant messaging (e.g., "It is an easy way for strangers to contact you and for people to find out vital information about you"; www.wiredteens.org). GetNetWise.org tells teens to "avoid chat rooms or discussion areas that look sketchy or provocative." A second theme is about keeping their identities private ("Never share full name, mailing address, telephone number, or name of school"; www.NetSmartz.org). Third, most recommend that teens never meet in person with anyone they have first met online, unless they meet in public and bring an adult along (www.safeteens.com, www.teenangels.org). We found only one website telling teens not to "talk

about sex with strangers. Don't lead them on—you don't want to be the target of a predator's grooming" (www.connectsafely.org). Although the presence of such web sites is inherently a good idea, the extent to which teens are accessing them is unknown. As noted by Dombrowski and colleagues (2004), a wide range of Internet safety programs are being developed and disseminated, most with little evaluation. Along with scant evaluations, the content of these guidelines does not appear to match the common modus operandi of sexual predators whose goal is to gain access to youth for sexual purposes.

Recommendations for Teen-Focused Education.

We recommend honestly and directly educating youths about the realities of Internet-initiated sex crimes. Since most victims are teenagers, education should occur during early adolescence (Wolak et al., 2004). Ideally, this education should come in the form of direct communication from parents, as part of a larger conversation about Internet use. A good time to have this discussion would be when a child is beginning to use the Internet in the more advanced, complex ways previously described. It is also clear that parents need to talk with their children and teens about Internet safety. The best filtering system is open and frank discussion about the dangers of face-to-face meetings. Such discussions need to focus on the ways that teenagers, especially young teens, can keep themselves safe from potential predators. Parents' being involved and interested in their children's Internet interests and online friends is also important. Parents need to be encouraged to understand that although their child may be the "computer/Internet" expert in the home, these youths are novices when it comes to decision making. Thus, parents need to maintain an active role in their child's internet usage.

Since not all parents are effective communicators with their children, schools would be another likely place for such information (e.g., teaching children and teens how to use the Internet safely). All youths need candid discussions about the following topics:
1. Teens need a clear message that adults having sex with a minor is wrong—morally and legally. They need to know that an adult using the Internet to make sexual advances to minors is committing a crime in most U.S. jurisdictions. Actual cases of Internet perpetrators who have been arrested for soliciting a minor can be presented, along with sex offender websites which provide information about an offender's history (e.g., www.kidsneedprotection.com, www.mapsexoffenders.com, www.familywatchdog.us).

2. Teens need strategies for dealing with sexual or aggressive contacts, including reporting to Web site and law enforcement authorities, changing e-mail accounts, or ending communications (Wells & Mitchell, 2008). In the case of a youth who has gotten sexually involved with an adult online, he or she should be educated about the inappropriateness, as well as legal implications of this relationship. In many instances, these victims do not view themselves as victims, due to strong emotional feelings they have developed for the offenders and may not cooperate with reporting or law enforcement (Wolak et al., 2004).

3. Teens need to be educated about online grooming tactics used by cyper-predators. They need direct discussions about seduction and how some adults will exploit a teen's sexual curiosity and needs for emotional comfort, intimacy, and companionship.

4. Messages provided to teens should be developmentally appropriate and part of a broader health education program focusing on healthy sexual development (how to recognize and respond to sexual exploitation, thinking critically, and making healthy choices about sexual behavior).

5. Teens need opportunities to discuss risky online behaviors that are most associated with victimization, such as talking online about sex with unknown people.

6. Educators should facilitate a discussion about the problems and consequences of developing online relationships with unknown people. Educators could share examples of teens who have been victims of Internet perpetrators. These "real life" examples can help debunk the myth of invincibility and help teens realistically appraise their risk for victimization.

7. Youths need to be educated that family members and acquaintances can be sexual offenders as well. If these people use the Internet to engage them in sexual conversations or send them sexual material, they are committing a crime and should be reported to a trusted adult (Mitchell et al., 2005).

8. Youths who are aware of friends' sexual involvement with adults online should be encouraged to reveal these relationships to trusted authorities when necessary (Wolak et al., 2004). Although some of these involved youth may be alienated from their parents, they may confide in friends about their relationships.

Education of High-Risk Teens

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These youths may be more difficult to educate due to their often conflicted relationships in the home. Parental communication is poor, families are disorganized, and abuse and conflict are often present. Although urging parents and caregivers to monitor their children's Internet use or educate their children about online dangers are sound strategies for most children, they may not be the most effective strategies to prevent online sexual victimizations for high-risk youth. As this review has shown, adolescents who are targets of online predators are usually alienated from their parents, and describe their homes as having high levels of parent-teen conflict. These vulnerable youth are often victims of familial abuse, or may be questioning their sexual orientation and unable to discuss this topic with their parents. Furthermore, the Internet is accessible from many out-of-home locations (e.g., coffee houses, libraries, friends' homes, hand-held devices such as cell phones), making in-home monitoring impossible. Parents also walk a fine line between protecting their teen from solicitation while respecting their privacy (Livingstone, 2007).

For these high-risk youth, enhancing parent-teen discussions about Internet safety may not be feasible. Thus, alternative avenues for educating high-risk youth may be necessary, and may need to include peer-to-peer education, web- or school-based instruction, or having pediatric or mental health professionals provide information to teens (Wells & Mitchell, 2008). If teens with sexual abuse or victimization histories are being seen by mental health professionals, they should be asked about their Internet use and educated about safe use of the Internet and the potential for victimization.

Having information available online would also be recommended, perhaps in teen chat rooms and bulletin boards centered on sexuality issues. Borzekowski and Rickert (2001) found that half of the youth in their study went online in search of information on health-related topics, including sex. They often seek information about birth control, safer sex, sexual abuse, and dating violence. Since we know youth are seeking this information online, sites that cover such topics could include educational information about safe Internet use and the potential of online predators. This would allow youth who do not want to seek this sexuality information from parents, friends, or professionals to be exposed to safety information while remaining anonymous.

Conclusion

Our review of online sexual solicitation has shown that the media portrayal of the Internet as the new "pedophile's playground" is largely inaccurate. Instead of online predators preying on young children, most Internet-initiated sex crimes involve adult men who seduce teenagers into sexual

encounters. The rate of online sexual solicitation of children is lower than commonly portrayed in the media, but certain youths appear particularly at risk. At-risk teens include youths with histories of sexual or physical abuse, those who experience conflict with and/or alienation from their parents, boys who are gay or questioning their sexual orientation, and those who frequent chat rooms, talk online about sex with unknown people, or engage in patterns of risky off- or online behaviors.

Teens are not simply the targets of Internet predators—their behaviors make them active participants in creating high-risk situations. Sexuality is a major developmental issue for teens, and the Internet, especially in chat rooms and instant messaging, is allowing them to express and explore these issues without the embarrassment of face-to-face contact. Unfortunately, it is this very natural developmental need of adolescents to explore their emerging sexual feelings that may put them at risk for Internet predators. Our findings support the need for education of youth (and their parents) about the risks and benefits of online relationships.

The Internet is tightly woven into the fabric of today's youth. Since its use seems to be expanding among youth, professionals need to develop ways to educate them about safe Internet use. It is imperative that developmentally appropriate prevention materials be created and evaluated to effectively prepare youth for their travels in cyberspace. Although ideally, parents are the best educators for their children on such topics, this approach may not always be feasible, particularly when parents and their children have difficulty communicating or other victimization issues are present in a family. The joint efforts of parents and professionals, including educators, health workers, clinicians, school counselors and designers of sexual education websites, are needed to help keep young people safe in cyberspace.

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See Appendix, Next Page!

Appendix A. Preventing Online Sexual Victimization of Youth

Internet and social network usage is a global phenomenon that is increasingly more popular among children and adolescents. Although the use of technology brings many advantages, it also places children at risk for victimization. The following guidelines are intended to prevent and/or reduce the risk for victimization.

- Monitor your child's computer usage and online activities. Spend time online with your child so that you can learn about his interests and activities.
- Set up an agreement with your child about the use of the computer. Set rules for how long she can spend online and what Web sites she can and cannot visit.
- Install software that provides the best security against accessing adult-oriented Web sites.
- Discuss the dangers of meeting a new Internet friend offline. Only allow face-to-face meetings if a parent accompanies the child and if the meeting is in a public location.
- Tell your child that if they ever receive any messages or emails that make them feel uncomfortable, such as threats, obscene or suggestive messages, they should not respond, and should tell a parent.
- Make sure your child checks with you before giving out personal information such as names (yours and theirs), home or school addresses, or telephone numbers. Warn your child never to send financial information (social security numbers, account passwords, credit card information) online.
- Discuss with your teen the online grooming tactics used by cyber-predators. Help them understand how some adults will exploit a teen's sexual curiosity and needs for comfort and intimacy.
- Warn your children about the dangers of talking online about sex, especially in chat rooms, when they do not know who might be "eavesdropping" on their conversations.
- Ask your child never to send or post a personal picture without your permission. Warn teens or adolescents about the dangers of sending sexual pictures via cell phones or online.
- Make sure your child checks with you before downloading or installing software found on the Internet.

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