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## **Nipping Psychopathy in the Bud: An Examination of the Convergent, Predictive, and Theoretical Utility of the PCL-YV Among Adolescent Girls**

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**Over the last decade rates of violence among adolescent girls have increased. Within high-risk contexts, urgent calls for assessment options have resulted in the extension of adult and male-based instruments to adolescent females in spite of the absence of strong empirical support. The current study evaluates the downward extension of psychopathy within a population of female juvenile offenders ( $N = 125$ ). The convergent and predictive validity of the *Psychopathy Checklist—Youth Version* (PCL-YV) were evaluated within a structural equation modeling (SEM) framework. Results indicated that while a specific component of psychopathy, deficient affective experience, was related to aggression, the effect was negated once victimization experiences were entered into the models. In addition, PCL-YV scores were not predictive of future offending, while victimization experiences significantly increased the odds of re-offending. Implications for research, policy, and clinical practice are discussed. Copyright © 2005 John Wiley & Sons, Ltd.**

### **INTRODUCTION**

Recently a great deal of attention has been paid to the pathways, causes, and correlates of violence among adolescents. The strong relationships that have been documented between violence and psychopathy among adults (Hare, 1991;

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Hemphill, Hart, & Hare, 1994; Hart, Kropp, & Hare, 1988) have caused researchers to question whether psychopathy, or psychopathic traits, may offer the same lens into understanding and predicting violence among adolescents. Among adults, psychopathy has been defined as a personality disorder that is characterized by three or more clusters of traits, including an arrogant and deceitful interpersonal style, deficient affective experience, and impulsive and/or antisocial behavioural features (Hare, 1991). While the empirical body of evidence required to evaluate the utility of psychopathy among adolescents is growing (for a review see Forth, Kosson, & Hare, 2003), concerns regarding the downward extension of psychopathy are being voiced within both research and clinical contexts (Edens, Skeem, Cruise, & Cauffman, 2001). In particular, critics have questioned whether psychopathy can be reliably assessed (Seagrave & Grisso, 2002) or, more to the point, even *exists* as a coherent personality syndrome during adolescence (Vincent & Hart, 2002).

Within criminal justice contexts, psychopathy, as assessed by the *Psychopathy Checklist—Revised* (PCL-R: Hare, 2003) is viewed as the gold standard in violence risk assessment for adult males (Fulero, 1995) and plays an important role in a variety of assessment and legal contexts (Ogloff & Lyon, 1998). The *Psychopathy Checklist—Youth Version* (PCL-YV: Forth et al., 2003) is a downward extension of the PCL-R that is designed to assess the interpersonal, affective, antisocial, and behavioral features of psychopathy among youth. While the guidelines included in the PCL-YV explicitly caution that “the PCL-YV should not be the sole criterion used to make decisions about a youth for dispositions within the mental health and criminal justice systems” (p. 4), the potential for misuse of the PCL-YV remains (Edens et al., 2001; Skeem & Cauffman, 2003; Steinberg, 2002; Vincent, unpublished doctoral dissertation). More recently, questions regarding the research and clinical limitations of extending psychopathy into adolescent *female* populations have emerged (Odgers, Moretti, & Reppucci, 2005). Unfortunately, there are virtually no studies available to inform debates regarding the utility of the PCL-YV among girls. In fact, to date, only six studies that have included adolescent females (for a review see Forth et al., 2003), the majority of which did not have adequate power to perform separate analyses by gender (samples ranged from  $n = 11$  to 80).

The lack of research in this area is particularly troubling in that adolescent females represent a significant and growing population within forensic contexts (Porter, 2000). For example, during the last decade in the United States the growth in person offense cases was greater for adolescent females (157%) than for males (71%) (Puzzanchera, Stahl, Finnegan, Tierney, & Snyder, 2003), with similar trends being observed in Canada (Savioe, 2000). Recent research also suggests that a sizeable minority of girls are involved in social and relational forms of aggression. Although relational aggression is characterized by covert acts and damaging others indirectly through social relationships (Crick, 1995; Moretti, Holland, & McKay, 2001), research suggests these forms of aggression may be equally harmful (Paquette & Underwood, 1999) and may play a key role in forming the context within which more serious acts of aggression occur (Moretti & Odgers, 2002).

In the face of mounting pressure to respond to a new class of violent girls the PCL-YV has been drawn from a limited pool of assessment options for adolescents. While the authors of the PCL-YV acknowledge that a limited body of research exists with adolescent girls, the take home message conveyed in the PCL-YV manual is that “PCL-YV Total scores do not appear to be unduly influenced by the youth’s

age, ethnicity or gender” (Forth et al., 2003; p. 51). Arguably, there is not a sufficient body of research to support, or refute, the clinical and forensic utility of the PCL-YV with this emerging population in the field of violence risk. This study represents part of a growing body of literature that is directed at developing a more comprehensive understanding of girls’ aggression within the context of what is already known about the pathways to violence for boys and men. Specifically, the convergent and predictive utility of the PCL-YV is examined alongside victimization, a domain of risk that has been identified as being particularly important for understanding the onset and continued involvement in aggression among girls (Chamberlain & Moore, 2002; Odgers & Moretti, 2002).

### **What, if Anything, Can the Construct of Psychopathy Offer to our Understanding of Girls’ Aggression?**

One of the appeals of psychopathy among adults has been the strong positive associations between aggression and psychopathy ratings over time and across contexts (Hare, 1998; Hemphill, Hare, & Wong, 1998; Rice, Harris, & Cormier, 1992). While a limited body of research exists among adolescents, in general, positive associations have been found between PCL-YV scores and official criminal behavior (Vincent, Corrado, Cohen, & Odgers, 1999), institutional violence (Kosson, Cyterski, Steuerwald, Neumann, & Walker-Mathews, 2002; Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2002; Stafford & Cornell, 2003), and self-reported aggression (Forth, unpublished report; Smith, Gacono, & Kaufman, 1997). The majority of these studies, however, have either primarily relied *or reported* on male samples. Females have been included as a footnote, a minor subset of the results for male offenders, or excluded because they represented “noise” within the analyses. In addition, most studies have not included the full range of aggressive behaviors that young women are most likely to be involved in (e.g. relational aggression or aggression within the context of close relationships). In order to address these omissions, the current study includes a detailed battery of physical *and* relational measures of aggression, as well as indices of violence within the context of close relationships.

In the process of attempting to understand the potential of psychopathy research to inform the study of girls’ aggression it is important to also consider domains of risk that have been highlighted as particularly relevant for girls. Within the larger developmental and clinical literature there is a large body of empirical evidence that links child maltreatment to youth violence (Fergusson & Lynskey, 1997; Smith & Thornberry, 1995; Widom & White, 1997) and a growing body of theoretical and empirical work linking maltreatment experiences and violence within the context of close relationships (Wekerle & Wolfe, 2003; Wolfe, Wekerle, Reitzel-Jaffe, & Lefebvre, 1998).

### **What is the Role of Victimization Experiences in Girls’ Aggression?**

Several studies have documented the high rates of victimization among female juvenile offenders (Chesney-Lind & Sheldon, 1998; Corrado, Odgers, & Cohen,

2000; Fergusson & Woodward, 2000; Lederman & Brown, 2000; Lewis, Yeager, Cobham-Portorreal, & Klein, 1991; Viale-Val & Sylvester, 1993). Some research estimates that as many as 90% of these young women have experienced some form of abuse, with reported rates as high as 83% for sexual abuse (for a review see Odgers & Reppucci, 2002). It is important to note that while rates of victimization are higher among females within these contexts, victimization is not an experience that is unique to females. Research on gender differences in socialization, however, does suggest that experiences of rejection and maltreatment within close relationships may have a greater impact on the psychological development and functioning of girls than that of boys (Moretti *et al.*, 2001). Researchers are also beginning to better understand the role maladaptive relationship patterns and victimization histories in maintaining and exacerbating aggressive behaviors within both therapeutic and non-therapeutic contexts (Chamberlain & Moore, 2002).

Several explanations for the relationship between victimization and violence exist. A widely held theory is that violent behavior is learned at the hands of family members. Classic social learning theory (Bandura, 1973) provides a model of the pathway to violence for children who observe and participate in violent family contexts (Straus, Gelles, & Steinmetz, 1980). Others have proposed mediated models of transmission, where the effects of victimization experiences are channeled through cognitive and affective characteristics (Dodge, Bates, & Pettit, 1990). Within these models, victimization experiences are seen as forming the broader context, or representing a non-specific risk domain, that facilitates movement towards a general trajectory of problem behaviors (Herrenkohl, Huang, Tajima, & Whitney, 2003; Loeber & Stouthamer-Loeber, 1986) or serves to impede prosocial development (Tremblay *et al.*, 2004). While the current study is not able to disentangle the exact mechanisms underlying the relationship between victimization and violence, victimization experiences are included as a key domain within models of girls' aggression (Moretti, Odgers, & Jackson, 2004).

Theoretically, psychopathy and victimization imply two very different etiological models of girls' aggression. Although the linkage between psychopathy and aggression is still not well understood, the association has been attributed, in large part, to fundamental deficits that psychopathic individuals are believed to have with respect to relating and caring for others (shallow affect, lack of empathy, and a callous and unemotional style), which, in turn, removes psychological barriers to engaging in violence against others (Hare & Hart, 1993; Hemphill *et al.*, 1998; Miller & Eisenberg, 1988). In contrast, causal models of girls' aggression involving victimization are rooted in our understanding of how individuals may either learn from, or respond to, abusive interpersonal experiences. This type of model involves a transactional process that is embedded within a larger context of development and relationship structures. In general, although not exclusively, psychopathic traits have been assumed to exist within the individual, whereas maltreatment experiences imply an interaction between the individual and a broad range of contextual variables. Although researchers have considered the role that victimization may play in altering outcomes for psychopathic adults (Marshall & Cooke, 1996), it is unclear how these findings would generalize downward to adolescents given the lack of consensus regarding whether these traits exist or can be measured. With respect to interventions, models that rely on psychopathy to understand the developmental course of aggression lead responses that are centered on modifying traits within the

adolescent, whereas the later implicates a broader context for understanding the development and the perpetration of aggressive behavior.

The relationship between victimization experiences and psychopathic traits need not be independent. Maltreatment (e.g., child physical and/or sexual abuse, psychological abuse, exposure to domestic violence) is best understood as a non-specific risk factor embedded within a complex developmental course (Sameroff, 2000). Indeed, the precise *causal* pathways from maltreatment experiences to adolescent violence are not well established and different forms of maltreatment tend to co-occur and interact with a myriad of later social and behavioral problems (Rutter & Sroufe, 2000). It is possible, therefore, that victimization experiences may be a risk factor for the development of psychopathic traits, which in turn lead to violence. Porter (1996) describes a process whereby children and adolescents “turn off” their emotions in the face of abusive contexts in order to effectively cope. To date, this type of mediated model has not been widely tested when examining the developmental correlates of psychopathy among adults.

Only a handful of studies have examined the linkage between victimization and psychopathy among adolescents. Forth et al. (2003) provide a summary of these findings drawn primarily from unpublished doctoral dissertations. For example, they review a 1998 study by McBride that documented a weak association between childhood victimization and PCL-YV scores ( $r=0.16$ ) among sex offenders ( $N=233$ ), and a 2001 study by O’Neill, who found a moderate relationship between child abuse/neglect and PCL-YV ratings. While these results are intriguing, they do not provide estimates of the independent and joint effects of maltreatment experiences and psychopathy on violence, and do not allow for an assessment of within sample heterogeneity. The models tested here evaluate (1) the independent effects of psychopathy and victimization on relational and physical forms of aggressive behavior, and (2) a mediation model that tests whether victimization influenced aggression indirectly through the development of psychopathic traits.

### **Can Psychopathy Inform the Prediction of Future Offending Among Girls?**

Although researchers have begun to test the predictive utility of the PCL-YV with male adolescents (Forth & Burke, 1998; Ridenour, Marchant, & Dean, 2001) and adult women (Forth, 1996; Rutherford, Cacciola, Alterman, & McKay, 1996; Salekin, Rogers, Ustad, & Sewell, 1998), there are no published studies of recidivism among female adolescents. As previously noted, experts in risk assessment have stated that male-based instruments are likely to function similarly within female populations (Hare, 1991; Webster, 1999). With respect to future violence prediction, however, research findings are incongruent for adult women (Vitale & Newman, 2001), and virtually non-existent for adolescent females. The only available research on predictive ability for female adolescents includes estimates from an unpublished dissertation (Rowe, 2002 as cited by Forth et al., 2003) that reported a statistically significant relationship between psychopathy and general recidivism ( $r=0.58$ ) and reincarceration ( $r=0.51$ ) but no relationship with future violent offending ( $r=0.16$ ). Recently, Vincent, Odgers, Watkinson, and Corrado

(2005) reported that the PCL-YV was predictive of future offending for male, but not for female adolescents, based on a four year prospective study.

The current study evaluates the convergent and predictive validity of the PCL-YV among a sample of serious and violent female juvenile offenders (FJOs). The utility of psychopathy as an explanatory construct and risk assessment measure is evaluated within a larger model of risk that includes victimization experiences, a domain of risk that has been identified as being especially relevant for females.

## METHODS

### Participants

The sample included 125 adolescent females incarcerated at a correctional facility in the southeastern United States. Participants ranged from 13 to 19 years of age ( $M = 16.2$ ,  $SD = 1.3$ ). The majority of participants belonged to an ethnic minority group, with 49% self-identifying as African American, 3% as Native American, 2% as Hispanic, and the remaining 37% identified as Caucasian. Intellectually, the sample fell within the low to borderline range of intellectual functioning with an average full scale IQ of 85.4 ( $SD = 12.1$ ).

Based on computerized assessments (Diagnostic Interview for Children and Adolescents: Reich, 2000) a number of the girls met diagnostic criteria for a mental health diagnosis: 17% current Attention Deficit Hyperactivity Disorder (ADHD), 27% past Major Depressive Disorder (MDD), 19% Generalized Anxiety (GAD), and 25% Post Traumatic Stress Disorder (PTSD). The majority of the girls (55%) met criteria for two or more disorders.

### Procedure

All female adolescents sentenced to custody during a 14-month period were approached to participate in the study.<sup>1</sup> The participation rate was approximately 93%. Each participant completed approximately 6–8 hours of individual assessments, including semi-structured clinical interviews, computerized diagnostic assessments, and a battery of self report measures. Data from official files, including social history, psychological, institutional, and educational reports were coded. Following release from the institution, participants were tracked through police record checks and the VA-DJJ correctional system.

### Measures

#### *SRO-R*

The Self Report of Offending Scale (SRO-R) (Huizinga, Esbensen, & Weiher, 1991) was adapted from the Self Report of Delinquency (SRD: for a review of

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<sup>1</sup>Data were gathered between 15 June 2003 and 15 August 2004. Active voluntary consent was obtained from participants and active parental consent was obtained for all girls under the age of 18.

psychometric properties see Piquero, MacIntosh, & Hickman, 2002). The SRO-R was used to assess lifetime prevalence and the frequency of involvement in delinquent and violent activities. The violence subscale included six binary items (e.g. *use of a weapon in a fight, attacked someone with the idea of seriously hurting them*), which loaded on a single factor (WRMR = 0.67, CFI = 0.98, RMSEA = 0.06).

### CTS-R

The *Conflict Tactics Scale Revised* (CTS: Straus, 1979) was modified to include indices of violence perpetrated within family, peer and romantic relationships (e.g. *slapped peer/mother/father/romantic partner*). Participants were asked to respond whether they had engaged in violence within these relationship contexts. Responses were recorded on a four point scale (1—*never* to 4—*always*). The structure of the CTS-R was examined through Confirmatory Factor Analysis (CFA). Comparisons between a four- ( $\chi^2 = 581.9$ ,  $df = 180$ , CFI = 0.87, RMSEA = 0.09) versus one- ( $\chi^2 = 2096$ ,  $df = 189$ , CFI = 0.38, RMSEA = 0.20) factor model provide support for proposed structure of the CTS-R.

### LAI-25

Little's Aggression Inventory (Little, Brauner, Jones, Nock, & Hawley, 2003) contains six subscales designed to differentiate overt and relational aggression (pure overt, overt relational, overt instrumental, pure relational reactive relational, reactive instrumental). Little and colleagues have reported acceptable levels of internal, external, and criterion validity for the LAI. Within the current study, items from the three relational aggression subscales (e.g., *I am the type of person who says mean things about others*) were combined to form latent and composite scores. Results from CFA supported the use of a three ( $\chi^2 = 805$ ,  $df = 66$ , CFI = 0.71, RMSEA = 0.18) versus one factor model of relational aggression ( $\chi^2 = 2095.7$ ,  $df = 54$ , CFI = 0.66, RMSEA = 0.20).

### YSR

The *Youth Self Report* (Achenbach, 1991) measures general psychopathology and behavioral difficulties within youth aged 11–18. Responses were measured on a three point scale (0 = never or not true, 1 = sometimes of somewhat true, 2 = often or very true). Four of the items from the aggression subscale that tapped into the most serious forms of aggression were used in this study (e.g., *I physically attack people*). Achenbach (1991) reported a mean 7-day test–retest reliability for problem scales of 0.83 for 15- to 18-year-old adolescents.

Multiple measures of physical (YSR, CTS-R, SRO-R) and relational aggression (LAI-25 subscales) were combined to form latent variables representing the shared variance across measures. Due to the failure to establish uni-dimensionality across measures, subsequent analyses were performed using *both* the latent representation of the construct, as well as the subscale composite scores. Although differences found in the size of the effects (e.g. attenuation of parameters), unless otherwise

indicated, the overall pattern of results remained invariant regardless of the type of measurement model employed.

### *Official Arrest Data*

Official arrest data was accessed through the Virginia Department of Juvenile Justice official records system. Police record checks were conducted after at least three months following release from the correctional facility in order to code official violent and non-violent recidivism.<sup>2</sup>

### *FBQ*

The *Family Background Questionnaire* (McGee, Wolfe, & Wilson, 1997) consisted of global severity ratings for three key maltreatment subtypes: psychological abuse, child physical abuse, and exposure to domestic violence. Support was found for the proposed factor structure of the FBQ-R within this sample, with a three-factor model ( $\chi^2 = 220$ ,  $df = 87$ ,  $CFI = 0.82$ ,  $RMSEA = 0.09$ ) demonstrating a better empirical fit than a single victimization subscale ( $\chi^2 = 350$ ,  $df = 90$ ,  $CFI = 0.67$ ,  $RMSEA = 0.15$ ). The youth completed each sub-scale based on their victimization history with a maternal and a paternal figure.<sup>3</sup> McGee and colleagues (1997) reported retest reliabilities of 0.70 for this instrument.

### *PCL-YV*

The Psychopathy Checklist—Youth Version (Forth *et al.*, 2003) is a multi-item symptom construct rating scale that measures interpersonal and affective characteristics as well as overt behaviors. Trained observers rated the severity of each symptom based on a semi-structured interview, a review of case history information, and information from collateral informants. Each of the 20 items was scored on a three-point scale (0 = *item doesn't apply*, 1 = *item applies somewhat*, 2 = *item definitely applies*). Reliability studies have demonstrated acceptable levels of internal consistency and inter-rater agreement (e.g.,  $r = 0.81$  to  $r = 0.93$ ; see, e.g., Brandt, Wallace, Patrick, & Curtin, 1997; Forth, 1995; Vincent *et al.*, 1999). The  $ICC_1$  for PCL-YV total scores in the current study was 0.89 (C.I. = 0.63–0.97). The  $ICC_1$  for Factor 1 (Interpersonal/Affective) was 0.88 (C.I. = 0.59–0.97) with the  $ICC_1$  for Factor 2 (Socially Deviant Lifestyle) falling just within the acceptable range, 0.81 (C.I. = 0.40–0.95).<sup>4</sup>

<sup>2</sup>The VA-DJJ uses 12-month reconviction rate as the official recidivism definition for Virginia juveniles. The definition of recidivism for the current study differs in that a 3- versus 12-month follow-up period was used and re-arrest versus reconviction information was the criterion for official recidivism. We expect 12-month follow up reporting to be congruent with VA-DJJ procedures, with a full reporting of rearrest, reconviction, and recommitment.

<sup>3</sup>Given the focus of maternal victimization in this study, combined with the absence of fathers in the lives of these young women, exposure to maternal victimization only is considered here.

<sup>4</sup>Prior to entering the field, each of the four interviewers completed a PCL-YV training session and rated five 'file-only' PCL-YV cases which had been previously rated by six experts in the field. Individual feedback was then provided to each rater. The  $ICC_1$  for PCL-YV 'file only' total scores, using a two-way random effects model, was 0.72 (C.I. = 0.32–0.96). Inter-rater agreement for the PCL-YV *interviews* was computed based on paired ratings of 12 cases. In order to avoid rater drift, paired interviews were also conducted at the 1/3 and 2/3 points of data collection. Cases were double coded and individual ratings were discussed; however, the ratings were not used within the reliability analyses.

To date, very few studies have examined the structural properties of the PCL-YV with females. Among the handful of studies that exist, the consensus is that the three-factor model by Cooke and Michie (2001) model represents the best empirical fit to the available data, although acceptable levels of fit for the Hare four-factor model have also been reported (Forth et al., 2003; Jones, Cauffman, & Mulvey, manuscript submitted for publication). Comparisons of the three- versus four-factor model of psychopathy for this sample are reported elsewhere (Odgers, unpublished dissertation) and provide limited support for the three-factor model based on an evaluation of overall model fit indices. It is important to note, however, that an examination of model parameters and structural expectations did not provide evidence for the structural validity of the PCL-YV within this population. Given the level of uncertainty surrounding measurement issues in the field, results from the three-factor model are presented here, and where findings diverge results from the Hare four-factor model are noted.

## Analyses

Expectations regarding the concurrent relationship(s) between psychopathic traits, victimization, and aggression were evaluated within a structural equation modeling (SEM) framework (using Mplus Version 3.1: Muthén & Muthén, 2004). SEM allows for a separate estimation of the relationship among latent variables and manifest indicators (measurement models) and the hypothesized relationship(s) among constructs (structural model). In addition to reducing measurement bias, SEM techniques allows for simultaneous estimation of multiple linear equations and the ability to evaluate competing theoretical models based on comparative or nested fit indices. Alternative models were evaluated based on their relative fit (e.g. chi-square statistic for nested models) and suggested critical values (e.g. root mean square error of approximation,  $RMSEA < 0.05$ , comparative fit index,  $CFI > 0.95$ : Hu & Bentler, 1999) with recommended weighted-root-mean-square-residual (WRMR) values of  $< 0.90$  given special consideration when categorical variables were used (Yu and Muthén, 2002). Missing data were handled through the use of full information maximum likelihood estimation (FIML).

First, the measurement models for aggression, victimization, and psychopathy were tested within this sample in order to correct for measurement error and obtain more accurate structural parameter estimates. Next, a series of structural models were constructed by

- (1) estimating the bivariate relationships between victimization and aggression/psychopathy and aggression,
- (2) modeling the joint (independent) effects of psychopathy and victimization on physical and relational forms of aggression, and
- (3) fitting alternative models which included both the direct and indirect (through psychopathy) effects of victimization on aggression.

The expectation was that victimization would account for the majority of the variance in aggression scores within this population and that psychopathic traits would *not* contribute to the overall fit of the models.

Finally, the predictive utility of the PCL-YV with respect to official offending was assessed through a logistic regression analysis [ $\text{logit}(p_n) = B_0 + B_1X1_n + B_2X2_n + E_n$ ] where the effects of victimization and psychopathy were assessed simultaneously. Here,  $\text{logit}(p)$  = the likelihood that the youth re-offended within the three month follow-up period,  $X1$  = the PCL-YV total score, and  $X2$  = a measure of victimization experiences.

## RESULTS

### Violence

Almost all the participants (97%) reported being involved in a violent act, including robbery, use of weapon in a fight, assault, and/or shooting at someone. The majority of girls (73%) reported engaging in more than one form of serious violence, with an average variety score of 2.5 ( $SD = 1.7$ ) out of a possible 6 on the SRO-R. Levels of relational aggression were also high in this sample, with the majority of girls (93%) reporting involvement in relational aggression ( $M = 1.5$ ,  $SD = 0.45$ ).

### Victimization

Data from the FBQ-R indicated that the majority of girls had experienced victimization by their primary maternal figure, with 88% of the participants reporting that they had experienced psychological abuse, 36% indicating that they had witnessed their mother engaging in violence against a romantic partner, and 53% reporting that they had been physically victimized.

### Psychopathic Traits

PCL-YV total scores ranged from 9 to 35 ( $M = 24.7$ ,  $SD = 5.2$ ). The average score for the three-factor PCL-YV model was 22.0 ( $SD = 14.6$ ), with a mean score of 3.9 ( $SD = 1.8$ ), 4.3 ( $SD = 2.0$ ), and 6.2 ( $SD = 1.7$ ) on factors one, two, and three respectively.

#### *Are Psychopathy Scores Predictive of Concurrent Aggression?*

As shown in Figure 1, only *Deficient Affective Experience* (DAE) was related to relational ( $\beta = 0.21$ ,  $p = 0.01$ ) and physical ( $\beta = 0.24$ ,  $p = 0.02$ ) aggression, while Factor 1 (*Arrogant, Deceptive Interpersonal Style*) and Factor 3 (*Impulsive, Irresponsible Behavior*) from the three-factor model by Cooke and Michie demonstrated no relationship to aggression [ $\chi^2 = 35.5$ ,  $df = 20$ ,  $CFI = 0.95$ ,  $RMSEA = 0.07$ ]. When the relationships between both forms of aggression and Factors 1 and 3 were removed there was a non-significant change based on nested model fit, indicating that these relationships are not required within the model ( $\Delta\chi^2 = 3.7/\Delta 4df$ ).

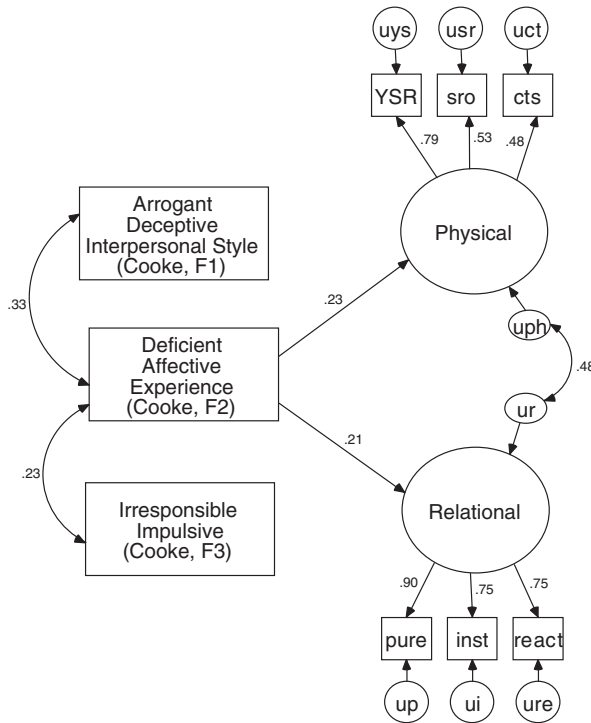


Figure 1. Relationship between the PCL-YV three-factor model and aggression ( $N = 125$ ).

### *What Was the Relationship Between Victimization (Maternal) and Concurrent Aggression?*

A relationship was found between overall victimization and physical ( $\beta = 0.82$ ,  $p < 0.01$ ) and relational ( $\beta = 0.38$ ,  $p < 0.01$ ) aggression (CFI = 0.91, RMSEA = 0.10) (Figure 2). A second model was fitted using the victimization subscales (physical, psychological, witnessing domestic violence) in order to test for specificity within this relationship. Results indicated that experiencing psychological abuse by maternal figures predicted physical aggression ( $\beta = 0.30$ ,  $p < 0.01$ ) but did *not* predict relational forms of aggression ( $\beta = 0.04$ ,  $p = 0.95$ ), while reports of witnessing mothers engaging in aggression towards her partner (domestic violence) were predictive of *both* physical ( $\beta = 0.47$ ,  $p < 0.01$ ) and relational aggression ( $\beta = 0.32$ ,  $p < 0.01$ ). Significant relationships were *not* found between child physical abuse perpetrated by the mother and aggression.

### *Does Psychopathy Matter Once Victimization Enters the Equation?*

Figure 3 represents the relationship between PCL-YV modified scores<sup>5</sup> and relational and physical aggression *without* victimization in the model. Here, PCL-YV

<sup>5</sup>When evaluating the concurrent validity of the PCL-YV in the literature, it is common practice to remove items 18–20 that directly overlap with antisocial behavior. This adapted score is referred to as the Modified PCL-YV score (Forth et al., 2003). The findings reported above remained the same when the Hare four-factor model was used.

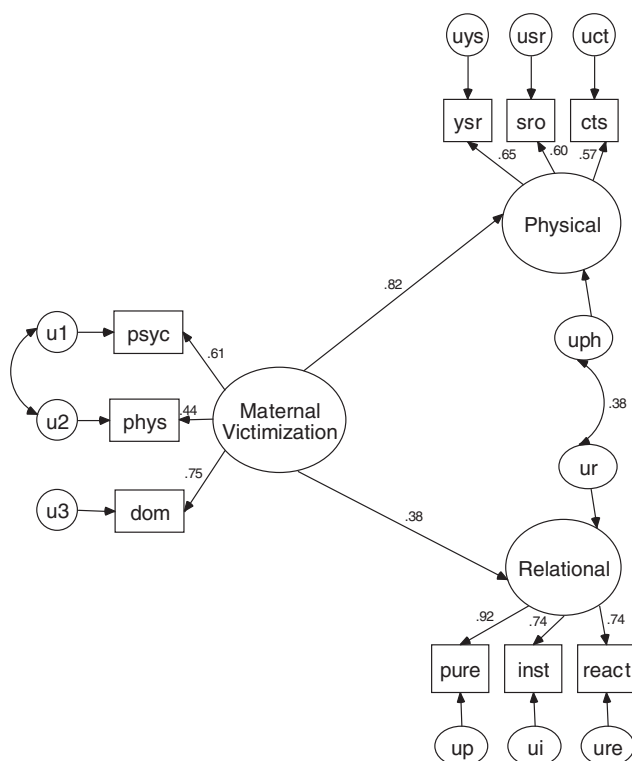


Figure 2. Relationship between victimization by a maternal figure and aggression ( $N = 125$ ).

modified scores are predictive of concurrent physical aggression ( $\beta = 0.35$ ,  $p < 0.01$ ) but were not related to relational aggression ( $\beta = 0.15$ ,  $p = 0.12$ ) ( $\chi^2 = 18.2$ ,  $df = 12$ ,  $p = 0.11$ , CFI = 0.99, RMSEA = 0.06). This pattern of results holds when PCL-YV total scores and factor scores are modeled (Hare four-factor scores and three-factor scores of Cooke and Michie) are used.

Once victimization is entered into the model (see Figure 4) the relationship between psychopathy and aggression is no longer significant ( $\beta = 0.04$ ,  $p = 0.48$ ); however, abuse by a maternal figure is highly predictive of both physical ( $\beta = 0.79$ ,  $p < 0.00$ ) and relational ( $\beta = 0.37$ ,  $p = 0.01$ ) aggression.

Psychopathy, as measured by the total, modified, or factor scores does not contribute to the prediction of concurrent physical aggression. This finding holds within a model that allows for independent contributions (see Figure 5(a)) of psychopathy and victimization and in a mediation model (Figure 5(b)) where both the direct (victimization  $\rightarrow$  aggression) and indirect effects (victimization  $\rightarrow$  psychopathy  $\rightarrow$  aggression) of victimization are estimated. The change in fit between the a model where all of the parameters in figure 5(b) are estimated ( $\beta_1$ ,  $\beta_2$  and  $\beta_3$ ) and one where  $\beta_2$  (psychopathy  $\rightarrow$  victimization) is constrained to zero, was non-significant, indicating that a direct path is *not* required between psychopathy and aggression ( $\Delta\chi^2 = 2.6/\Delta 1df$ ). The path from victimization by the mother, however, does result in a significant loss in fit with respect to chi-square units

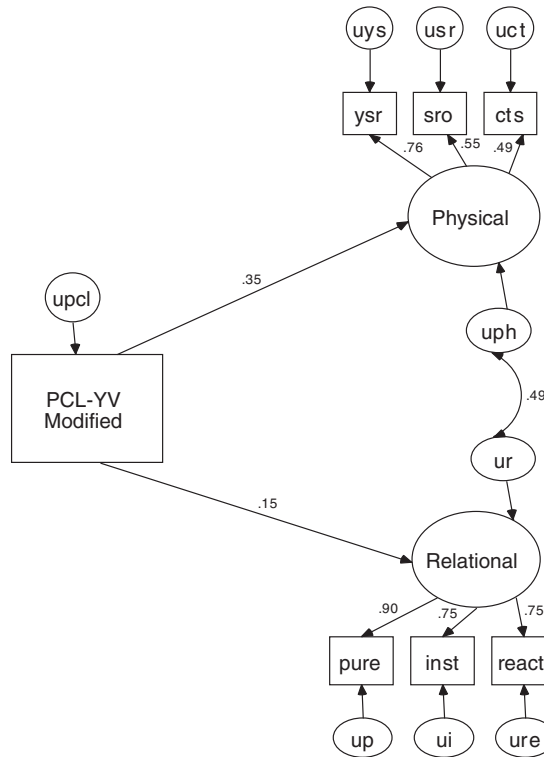


Figure 3. Relationship between PCL-YV modified score and concurrent aggression ( $N = 125$ ).

( $\Delta\chi^2 = 11.4/\Delta 1df$ ), providing further support for the existence of a moderate relationship between maternal victimization and PCL-YV scores ( $\beta = 0.38$ ,  $p = 0.01$ ).<sup>6</sup>

### Predictive Validity of the PCL-YV

Recidivism data was collected for the 62 participants who had been released from custody for at least three months. The average follow-up time for participants was 250 days ( $SD = 104$ ). Approximately a quarter of the sample (21%) was charged with a new offence during the follow-up period. Psychopathy scores (three-factor total score, four-factor total score, and/or factor scores) did *not* predict future recidivism ( $b = 0.03$ ,  $p = 0.60$ ,  $OR = 1.0$ ). Victimization experiences, however, were predictive of future recidivism. Specifically, physical abuse total scores ( $b = 0.92$ ,  $p = 0.05$ ,  $OR = 2.5$ ) and psychological abuse by the primary maternal figure ( $b = 1.2$ ,  $p = 0.02$ ,  $OR = 3.4$ ) increased the odds of being arrested during the

<sup>6</sup>In order to test the *specific* predictive ability of victimization experiences, parental characteristics (e.g. criminal history, mental health status) were also entered into the model. While there were additive effects for these entries (range  $\beta = 0.21$ – $0.37$ ), the parameter estimates (maternal abuse  $\rightarrow$  aggression) remained stable.

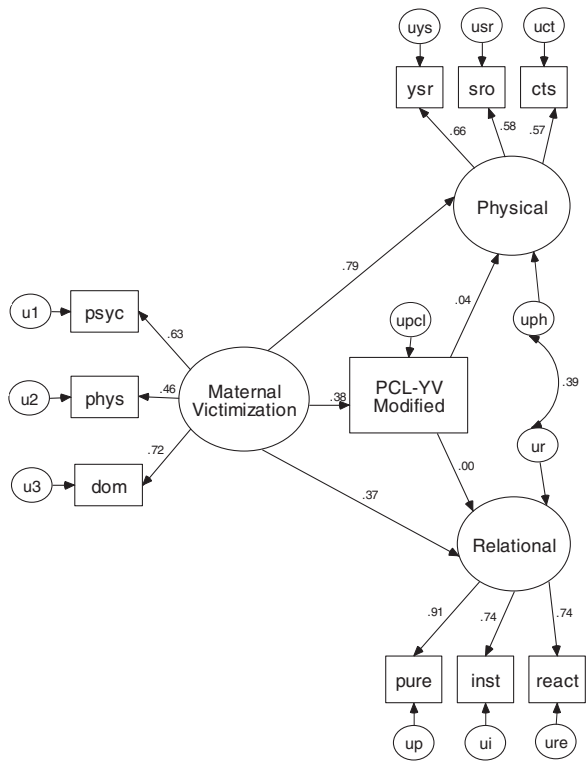


Figure 4. Full model, PCL-YV, relationship between victimization and aggression ( $N = 125$ ).

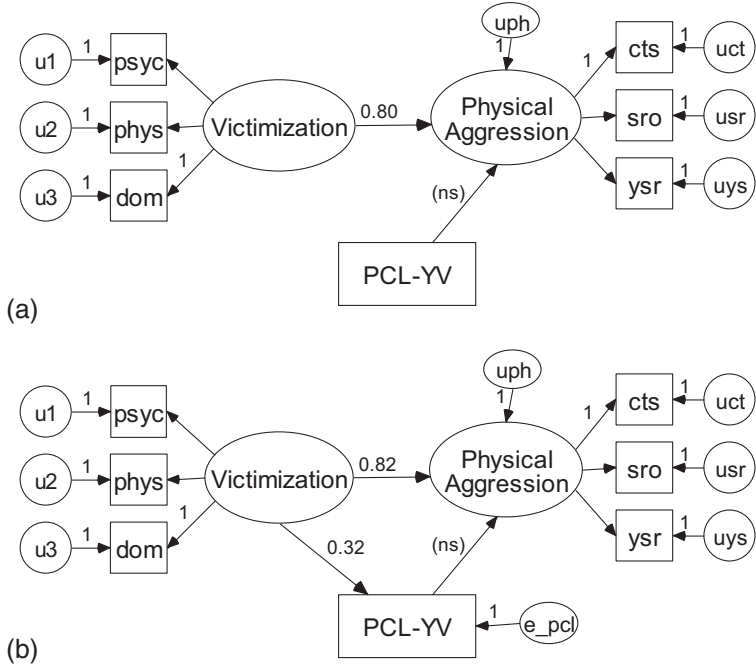


Figure 5. (a) Independent contributions. (b) Mediation.

follow-up period. That is, for each standard deviation increase on the victimization measure the odds of engaging in violence during the follow-up period increased 2.5- to 3.4-fold.

## DISCUSSION

While more research is needed in order to provide a comprehensive picture of how the PCL-YV functions when applied to this population, the results presented here provide an initial look at the use of this instrument among high-risk adolescent females. These results do *not* provide evidence for the relationship between psychopathy and aggression (concurrent and future) within this population; they do, however, highlight the need to develop a better understanding of the role that victimization may play in understanding and girls' aggression.

### What was the Relationship Between Psychopathy and Aggression?

Psychopathy was moderately related to concurrent aggression within this sample. Specifically, *Deficient Affective Experience* demonstrated a weak but significant relationship to both physical and relational forms of aggression. These findings are consistent with previous research (e.g., Forth, unpublished report; Smith et al., 1997). However, the current study extends prior research by demonstrating that the relationship between DAE and aggression disappeared once victimization by a maternal figure was entered into the model. These findings are also congruent with the larger body of research that points to the importance of victimization experiences, particularly victimization perpetrated by mothers (Tremblay et al., 2004) and within the context of close relationships (Wolfe et al., 1998; Wekerle & Wolfe, 2003) in understanding later aggressive behavior.

With respect to predictive validity, there was *no* relationship between psychopathy and future offending. This finding is not surprising given the lack of theoretical linkages between psychopathy and violence among adolescent girls (Odgers et al., 2005) and recent evidence that the PCL-YV may have limited utility in predicting official offending (Vincent et al., 2005). Although additional follow-up time is required to determine whether this lack of predictive utility holds over time and across aggression measures, it should be noted that at this early stage victimization experiences were predictive of offending outcomes (OR = 3.4).

### What is the Role of Victimization in Girls' Aggression?

Victimization was conceptualized here as a non-specific risk factor that operated through a latent variable. This type of model allows for the possibility that victimization serves as a proxy for a cluster of broader environmental and relationship variables. For example, it is widely acknowledged that separate components of familial environments are not randomly distributed in the general population

(Rutter, Champion, Quinton, Maughan, & Pickles, 1995). Rather, family conflict, negative child rearing behaviors, low SES, and low familial resources tend to cluster together. It is also possible that this variable represents a genetic rather than an environmental risk factor, where an underlying genetic similarity is responsible for the manifestation of aggression in both the child and the parent. In order to test for the specificity of the victimization experience, parental background variables were also entered into the structural models. The purpose was to evaluate whether the effects of victimization on aggression held once rival risk factors were entered, or whether victimization was merely a proxy for these broader familial and/or genetic risk factors. While there were additive effects for the inclusion of family background and parental variables, the specific effect of victimization on aggression remained constant.<sup>7</sup>

Victimization experiences were also moderately related to the expression of psychopathic traits. Arguably, the interplay between maltreatment and psychopathic traits is more dynamic than what is represented here. The order of entry into the model was dictated by the assumption that maltreatment experiences precede the manifestation of psychopathic traits. Retrospective measurement does not allow for the empirical estimation of transactional or reciprocal relationship between these two domains. It is important to note, however, that there was not a scenario where psychopathy scores were independently related to aggression once maternal victimization was entered into the model.

One explanation for the relationship between victimization and psychopathy may stem from the broader context in which these young women function or, perhaps more accurately, survive. The harsh life and severe forms of victimization that these girls have experienced are likely to lead to interpersonal styles that are hostile and defensive. Children and adolescents within these contexts may suppress their emotional responses as an adaptive coping mechanism (Porter, 1996). It may be the case, therefore, that victimization experiences lead to an interpersonal disposition and interaction style that may resemble psychopathic traits (e.g. appear callous and lacking remorse), but are not linked in the same way to the latent construct. In other words, while victimization experiences may be precursors to what adult researchers refer to as psychopathy, it is equally probable that adolescents exposed to severe forms of maltreatment may be manifesting features that “look like” psychopathic traits, but are not related to the construct at a functional level. Future research that examines the manifestation of these traits across contexts, assessment batteries, and time is required in order to disentangle this complex relationship.

### Study Limitations

In terms of sampling, these young women were drawn from the tail end of the distribution with respect to victimization, violence, and psychopathy. While they represent an important population in the study of violence risk due to recent debates regarding the legal and clinical consequences of applying the PCL-YV to girls, more

<sup>7</sup>This set of analyses does not negate the possibility that other unmeasured familial variables would affect the relationship between victimization and aggression; however, it does provide support for the consideration of victimization as a specific and *relevant* risk domain.

research is needed that draws from a wider sampling distribution. With respect to measurement, although a great deal of effort was invested in triangulating measurement within this study, the retrospective nature of reporting for victimization experiences presents a number of challenges (Widom, 1992). Future research that relies on collateral informants and prospective measurement is needed in order to expand the primary outcome variable [offending] to include the full range of aggressive behaviors that females are likely to engage in.

With respect to psychopathy, neither the results presented here nor those detailed elsewhere (e.g., Forth et al., 2003) provide convincing evidence that the PCL-YV functions equivalently across age and gender with respect to structural, convergent, and predictive validity. Further research is required in order to ensure that we are working with a valid measure of psychopathy within these types of models. It is also important to point out that the causal interplay between psychopathy and victimization is poorly understood; large scale longitudinal research is required in order to chart how this complex system of experiences and traits transact across development.

While these findings are intriguing, it is important to note that the small sample and female only participant pool requires an independent replication with males and across time in order to (1) examine the gender specific nature of these findings and (2) assess what portion, if any, of the variance explained in aggression by victimization is the result of method variance, or criterion contamination.

### **Nipping Psychopathy in the Bud: Clinical and Policy Implications**

Within the academic realm a null finding, in this case the finding that psychopathy is *not* related to aggression, is often difficult to defend. However, in our case, results supported prior research on the relationship of the PCL and aggressive behavior—this relationship only disappeared when victimization was simultaneously considered. Nonetheless, we wish to emphasize that there are many dangers with the “file drawer” effect when studying the relation of the PCL-YV to aggression and violence. That is, if null findings are not reported we risk making significant errors in clinical practice and policy development.

Our findings highlight the need to consider victimization when assessing girls involved in aggressive and violent behavior. If victimization is one of the key domains of risk with respect to better understanding girlhood aggression and violence, as our results suggest, this calls for preventive and remedial interventions that are quite different from those that derive from a psychopathy perspective. In particular, ecologically based interventions that reduce exposure to victimization, build healthy relationships, and reduce oversensitivity and over-reactivity to interpersonal stress may be most helpful to girls with aggressive and violent behavior problems.

Clinically, it has been argued that the identification of “emerging” psychopathic traits holds promise for intervention at a stage in development where traits may be more malleable. Indeed, researchers have cited the benefits of understanding the etiology of the disorder (Forth & Burke, 1998; Lynam, 1996), targeting interventions (Forth & Mailloux, 2000; Frick, Bodin, & Barry, 2000) and increasing case management efficiency (Campbell, Porter, & Santor, 2004; Corrado, Vincent, Hart,

& Cohen, 2004) as a justification for extending the PCL-R to adolescents. But we should be careful that our desire to 'nip psychopathy in the bud' does not push our practice further than justified by empirical research. We are ethically obligated to ensure that the current state of research on girls and psychopathy be communicated in a clear and honest way to clinicians and policy-makers. The lack of adequate research, established measurement models and the findings from this study highlight the need for extreme caution in the application of this assessment tool. Specifically, it is not clear that the *PCL-YV should be approved for use with adolescent females for purposes other than research at this time*. Rather, incongruent findings reinforce the need to proceed cautiously while integrating developmental models that simultaneously (re)consider multiple domains of risk in the lives of girls who engage in aggressive and antisocial behavior.

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