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# The Confluence of Psychopathic Traits, Violence, and Mental Health Needs in Adolescent Females: Theoretical and Treatment Implications

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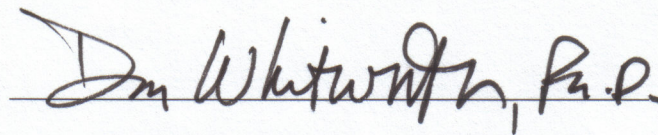
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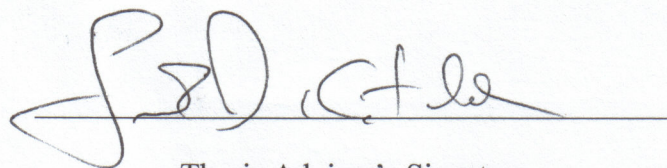
Nathan Cook

Class of 2008

July 24, 2008

A handwritten signature in black ink, appearing to read "Dr. Whitworth, Ph.D.", written over a horizontal line.

Program Director's Signature

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Thesis Advisor's Signature

## Abstract

The relation among psychopathic traits, violence, and mental health needs was investigated in a sample of male and female juvenile offenders to test for the presence of gender differences. Demographic, offense, and mental health information was gathered from 100 youth offenders, 50 female and 50 male, committed to a state juvenile justice agency. Case file information was used to score the Psychopathy Checklist: Youth Version and additional archival data was used to code offense and mental health variables. Female and male juvenile offenders differed on PCL:YV scores as a function of proactive violence and mental health needs. The results are discussed in terms of the assessment of psychopathy in adolescence, the differential manifestation of psychopathic traits in adolescent females, and relevant treatment implications.

## Acknowledgements

I would like to acknowledge my thesis committee chair, Frank DiCataldo. Without his involvement this project would not have been possible. Dr. DiCataldo generously allowed access to Bedford Policy Institute's database and was integral in gaining approval from the Department of Youth Services to use the case file information. I would also like to acknowledge the other two members of my committee: Don Whitworth and Gina Vincent. Dr. Whitworth provided thoughtful feedback and when needed, some firm guidance through the thesis process. Also, I am extremely thankful to Dr. Vincent for agreeing to serve as an external member of my committee. She graciously offered her time and tremendous expertise in the area of psychopathy, bettering this project significantly. Last but certainly not least I would like to acknowledge my thesis partner, Trevor Barese. He was able to serve as a sounding board and sanity check throughout this process. He also was a tremendous source of personal support throughout the past year and a half. Without him this project would have been much more stressful and much less fun.

## Dedication

This thesis is dedicated to my loving and supportive family. To my brother and sister, thanks for always being there for me. To my nephews, who remind me not to take myself too seriously. And to my Mom and Dad, who for the past six years have been supremely supportive of my academic endeavors, making sure I had everything I needed in order to accomplish my goals. The two of you are responsible for instilling in me the tremendous work ethic and respect for the importance of education that made this thesis possible.

I would also like to dedicate this thesis to my fiancé. Without your love and support I would not have been able to complete this project. Thanks for putting up with the articles that covered our entire house and the many late nights of writing. With your support I was able to focus the energy and time needed to complete this project. I am forever thankful for all you have done and continue to do.

## The confluence of psychopathic traits, violence, and mental health needs in adolescent females: Theoretical and treatment implications

The assessment of psychopathic traits in juveniles has elicited much debate and contention in the literature (e.g., Edens, Skeem, Cruise, & Cauffman, 2001; Hart, Watt, & Vincent, 2002; Petrila & Skeem, 2003; Seagrave & Grisso, 2002; Skeem & Petrila, 2004). Although there are controversies and criticisms, many have agreed that research into psychopathic traits in juveniles may provide extraordinarily valuable information for early intervention and public safety as well as informing issues of assessing and managing risks and needs of multi-problem youth (Frick, 2002; Seagrave & Grisso; Vincent & Hart, 2002). However, given the potential negative effects inherent in the use of the psychopathy construct in juveniles great caution must be exerted (Edens et al.; Frick; Forth & Book, 2007; Seagrave & Grisso; Vincent & Hart; Vincent, 2006). Also, the relation between high psychopathy scores and mental disorders in adolescence is an area in need of study (Seagrave & Grisso).

There is a marked lack of research regarding the manifestation of psychopathic traits in adolescent females (Odgers, Reppucci, & Moretti, 2005; Schrum & Salekin, 2006; Vincent, 2006). Similarly lacking are theoretical linkages between psychopathic traits and violence as well as clearly delineated pathways to serious, persistent antisocial behavior in female adolescents (Dixon, Howie, & Starling, 2004; Odgers et al.). In addition, this population exhibits higher rates of mental disorder and psychiatric comorbidity than males (Abram, Teplin, McClelland, & Dulcan, 2003; Grisso, 2005; Vincent & Grisso, 2005; Vincent, Grisso, Terry, & Banks, 2008) and is committing increasing rates of violent crime (Stahl, Puzanchera, Livsey, Sladky, Finnegan, Tierney,



& Snyder, 2007). Adolescent females appear to constitute a special population in juvenile justice that is in need of further research. This study seeks to examine issues related to the applicability of the psychopathy construct to adolescent female offenders and explores the interaction of psychopathic traits and mental health needs.

*Juvenile Offending and Mental Health Needs: Adolescent Females as a Special Population*

Serious antisocial behavior committed by juveniles provides a unique paradox. The behavior engenders retributive attitudes that call for harsh penalties, yet the principles upon which the juvenile justice system was founded contend that adolescents are *less* blame worthy given their state of developmental immaturity (Grisso, 1996).

The present state of juvenile offending is relatively positive. Overall, law enforcement agencies made an estimated 2.2 million arrests of persons under the age of 18 in 2004, accounting for 16% of all arrests and 16% of violent crime arrests (Snyder, 2006). In the same year juvenile courts handled 1,660,700 delinquency cases (Snyder). These numbers represent dramatic decreases in juvenile delinquency cases since the much publicized but rather short-lived “juvenile crime wave” of the mid 1990s (Merlo & Benekos, 2003; Snyder).

Violent crime committed by juveniles has seen a sharp decline from its peak in the mid 1990s, during which time the portrayal of youth violence fueled public fear of the so-called “super predators” (Merlo & Benekos, 2003; Snyder, 2006). Although from 1985 to 2004 the number of violent crime cases handled by juveniles courts increased by 22%, more recent trends paint a different picture of youth violence; the number of violent

crime cases has decreased sharply, dropping 37% from 1996 to 2000 and 42% from 1995 to 2004 (Puzzanchera, Stahl, Finnegan, Tierney, & Snyder, 2004; Stahl et al., 2007).

Gender plays an important role in the expression of delinquent and antisocial behavior (Alemagno, Shaffer-King, & Hammel, 2006; Cauffman, Lexcen, Goldweber, Shulman, & Grisso, 2007; Stahl et al., 2007). Males are much more likely than females to engage in delinquency and violent crime (Stahl et al.). However, the percentage of female youths engaging in crime has increased significantly more than the percentage of male youths. For example, between 1985 and 2004 the percentage of delinquency cases involving males increased 30%, to 1,208,200 cases (73% of delinquency cases), while the percentage involving females increased by 104%, to 452,500 cases (Stahl et al.). So while the absolute number of cases involving female juvenile offenders is not nearly as high as males, there is a much more pronounced increasing trend of delinquent offending for female youths. More recent statistics demonstrate the same pattern. While the number of delinquency cases involving male offenders decreased 14% between 1996 and 2004, the number of female delinquency cases increased 8% (Stahl et al.).

Although overall rates of juvenile violence are on the decline, this is not the case for female juvenile offenders (Cauffman et al., 2007; Snyder, 2006; Stahl et al., 2007). In terms of physical violence and aggression in adolescence, boys exhibit higher rates than girls, however, violent offending among female adolescents is rising (Cauffman et al.). Specifically, the crime of simple assault saw an increase of 31% in female juvenile arrests between 1995 and 2004 while arrests of males decreased by 1 % (Snyder). Another telling statistic involves arrests for aggravated assault. From 1980 to 2004 the



increase in arrests of males was 11% while arrests of female offenders rose 93% (Snyder).

Although juvenile delinquency has garnered heavy attention throughout the years, only recently has there been an increase in attention to the mental health needs of juvenile offenders, due in part to research documenting alarmingly high rates of mental health problems among delinquent youth (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004; Abram et al., 2003; Dixon et al., 2004; Kataoka, Zima, Dupre, Moreno, Yang, & McCracken, 2001; National Mental Health Association [NMHA], 2004; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Teplin, Abram, McClelland, Washburn, & Pikus, 2005).

Like juvenile offending in general, gender differences have been reported with respect to mental health problems of juvenile justice-involved youths (Alemagno et al., 2006; Cauffman et al., 2007). Boys are more likely to exhibit externalizing symptoms like anger and conduct problems, whereas girls are more likely to exhibit internalizing symptoms like anxiety and depression (Cauffman et al.). Female delinquents have been found to present with higher risk factors of suicidality (Alemagno et al.; Dixon et al., 2004). Female youths that enter the juvenile justice system also are likely to have extensive and severe trauma histories with a base rate of traumatic experiences in female delinquents as high as 84% (Abram et al., 2004; Dixon et al.).

Female juvenile offenders have been found to exhibit greater mental health problems and more severe pathology than males (Abram et al., 2003; Grisso, 2005; Kataoka et al., 2001; Vincent & Grisso, 2005, Vincent et al., 2008). In a study of 100 female offenders, all but one was reported to have at least one psychiatric diagnosis

(Dixon et al., 2004). Another study, conducted by Kataoka and colleagues, found that 80% of the adolescent female offenders in their sample exhibited symptoms of an emotional or substance use disorder, and of the girls with either symptoms of an emotional disorder or a history of substance use problems, 70% has a history of prior incarceration. These data indicate a strong relation between mental health problems and juvenile justice involvement in adolescent females.

An especially problematic issue among juvenile offenders is comorbidity (Abram et al., 2003; Dixon et al., 2004; Kataoka et al., 2001). Juvenile detainees with any major mental disorder were found to be up to 4.1 times more likely to suffer from a substance use disorder (Abram et al.). As with general delinquency, violent crime, and mental health problems, gender differences have been reported with females juvenile offenders exhibiting more severe comorbidity than males (Abram et al.; Dixon et al.; Kataoka et al.). Significantly more females than males were found to have 2 or more disorders, with 33.6% of females and 24.2% of males evidencing comorbid mental disorders (Abram et al.). Further, significantly more females (22.5%) than males (17.2%) were found to suffer from 3 or more disorders (Abram et al.). A study conducted by Dixon and colleagues reported rates of comorbidity in female offenders as high as 93%, with 78% having three or more diagnoses. Of note, this study reported that comorbidity did not differentiate violent and non-violent offenders, and the most significant factor related to offender status was the number of psychiatric diagnoses.

The differential rates of mental health diagnoses and attendant treatment needs of female adolescent offenders in the juvenile justice system has raised questions about risk assessment (Odgers et al., 2005) and the role and manifestations of psychopathic traits in

female juvenile offenders (Seagrave & Grisso, 2002). The high rate of comorbidity and mental health problems in adolescent females may put them at risk of not receiving mental health services even though their conduct problems may in fact be due to mental health problems. A concern is the potential for their criminal history to overshadow their mental health needs (Kataoka et al., 2001).

*Psychopathy and the Psychopathy Checklist: Youth Version*

A widely cited taxonomy of antisocial behavior in juvenile offenders was developed by Moffitt (1993) in an effort to distinguish those serious juvenile offenders that will continue to engage in antisocial behavior in adulthood from those likely to desist as they transition into adulthood. This categorization divides antisocial youth into two types: Life-Course Persistent and Adolescent-Limited Juvenile Offenders. This taxonomy is informed by research findings suggesting that most forms of delinquency are indeed a normal part of teenage development (Moffitt). Delinquency is a nearly ubiquitous experience in adolescence and research indicates that the majority of youths will not continue along this path and commit antisocial acts as adults (Moffitt). These juveniles are classified as “Adolescent-Limited Juvenile Offenders” (Moffitt). This label conveys the temporary nature of their participation in antisocial acts (Moffitt). There is a small group of youth, however, that does continue to engage in antisocial behavior into adulthood; this group is labeled “Life-Course Persistent Juvenile Offenders” (Moffitt).

As efforts to understand the development of antisocial and violent behavior in youth have advanced, a concept has been adapted from research on adult antisocial behavior: psychopathy. This concept refers to a severe personality disorder characterized by a constellation of affective, interpersonal, and behavioral deficits that include shallow

emotions, lack of empathy or remorse, egocentricity, and impulsivity (Hare, 1996). It is associated with the persistent violation of social norms and increased antisocial conduct and violence (Hare).

The construct of psychopathy has been met with wide empirical support and has displayed impressive clinical utility in adults based largely on the predictive ability of the Psychopathy Checklist – Revised (PCL-R; Hare, 1991). The concept of psychopathy as operationalized by the PCL-R has proven to be a strong predictor of future violence and anti-social behavior (Edens et al., 2001; Hare, 1998; Vaughn & Howard, 2005; Vincent, 2006). Findings have also indicated a relation between psychopathic traits and poor treatment prognosis (Forth & Book, 2007).

Development of the PCL-R as an assessment tool for psychopathy began with the work of Robert Hare in 1980 (Hare, 1996). The PCL-R originally was described as consisting of two factors: Factor 1 consisted of affective/interpersonal features and Factor 2 consisted of the impulsive and antisocial, or behavioral features of psychopathy (Hare). Later research described a three factor structure which parsed out the original Factor 1 into two separate factors and left out some of the features related to antisocial and criminal behavior that were part of the original Factor 2 (Cooke & Michie, 2001).

More recently, the concept of psychopathy has been examined in the context of adolescent risk assessment. As a result, several instruments and rating scales purporting to measure this construct have been developed (Salekin & Frick, 2005). These tools have been constructed with a mind to provide a more developmentally appropriate assessment and measurement of psychopathy in adolescents (Edens et al., 2001). Further, these instruments have been constructed to conform to a number of different response formats

and methods of measurement (Salekin & Frick; Vincent, 2006). For example, these instruments incorporate self-report, informant rating, and expert rating methodologies (Salekin & Frick; Vincent).

One such instrument is the Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003). The PCL:YV is a direct downward extension and adaptation of the PCL-R (Forth et al.; Odgers et al., 2005). Like the PCL-R, the PCL:YV is a 20 item expert rating scale (Forth, 2005). The PCL:YV targets interpersonal, affective, and behavioral dimensions considered fundamental to the construct of psychopathy (Forth et al.) Scores on the PCL:YV are dimensional and represent an individual's relative level of psychopathic traits (Vincent, 2006). Further, there are no cutoff scores for the PCL:YV, preventing the premature categorization of juvenile offenders as "psychopaths" (Forth et al.; Vincent).

Determining the factor structure of the PCL:YV is crucial to research, perhaps especially so given it examines traits in youth (Salekin, Brannen, Zalot, Leistico, & Neumann, 2006). Understanding the factor structure of the PCL:YV is important for the reliability of the instrument and its ability to allow researchers to consistently identify which factors mediate negative outcomes (Salekin et al.). Given the importance of intervention with at-risk youth, the identification of mediators to negative outcomes is critical (Salekin et al.). Factor analytic studies of the PCL:YV have shown that both three and four factor models provide good fit (Jones, Cauffman, Miller, & Mulvey, 2006; Neumann, Kosson, Forth, & Hare, 2006; Salekin et al.). The four factor model appears to have incremental validity in predicting correlates to the psychopathy construct (Neumann et al.). The three factor model developed by Cooke & Michie (2001) may provide a more

clear representation of the construct of psychopathy but may be less informative regarding many negative outcomes associated with psychopathy, including violence (Salekin et al.).

The downward extension of the psychopathy construct to adolescence has been justified in different ways (Blair, Peschardt, Budhani, Mitchell, & Pine, 2006; Farrington, 2005; Lynam, 1997; Lynam, 2002; Lynam & Gudonis, 2005; Salekin & Frick, 2005; Vaughn & Howard, 2005). Lynam (2002) responded to criticisms of assessing psychopathy in adolescents by stressing the importance of identifying psychopathic traits early in life due to the recalcitrant nature of these traits and a general resistance to treatment (Farrington; Lynam & Gudonis). In this way the importance of using the construct to conceptualize adolescent behavior has been presented as practical and potentially beneficial (Lynam & Gudonis). Similarly, early identification might curtail long, costly criminal careers (Vaughn & Howard). Lynam (1997) further suggested that empirically identified protective factors that prevent adolescents from developing adult psychopathy might improve treatment efforts. The investigation of this construct in adolescence is also crucial to the understanding of how psychopathy develops and emerges (Blair et al.; Lynam & Gudonis; Salekin & Frick).

The basic assumption that has supported the downward extension of psychopathy to juveniles is that psychopathy in adult offenders begins to manifest early in life (Forth & Book, 2007; Forth et al., 2003). The literature appears to support the contention that traits and behaviors characteristic of psychopathic tendencies in adults are present in adolescence (Flight & Forth, 2007; Lynam, 1997; Salekin and Frick, 2005). It has been suggested that these tendencies are reliably measurable in adolescence (Forth & Book).

To support this claim Forth and Book cite links between psychopathic traits and aggression, antisocial behavior, and criminal activity that mirror the relations found in adult samples. Similarly, Salekin and Frick cited several studies showing that PCL:YV scores predict antisocial and violent behavior as well as other theoretically important criteria.

Regardless of these parallels with the adult literature, the use of psychopathy in conceptualizing juvenile behavior and the downward extension of psychopathy into childhood and adolescence has been met with some cautious reservations (Edens et al., 2001; Hart et al., 2002; Seagrave & Grisso, 2002). Among these is the concern that some traits measured by the PCL:YV may be developmentally normative for adolescents (Edens et al.; Seagrave & Grisso). It is also suggested that the parallels reported above may be transient in nature (Seagrave & Grisso). This is to say that the observation of a given trait may be merely a “transient feature of a developmental process” that will not endure and characterize the youth upon reaching adulthood (Seagrave & Grisso, p.224). The contention that the concept can be validly measured in adolescence at all has been questioned (Odgers et al., 2005). Further, some have questioned whether psychopathy in adolescents exists at all (Hart et al.). It has been warned that given that the consequences of false positives in juvenile justice settings are so profound, use of the psychopathy construct necessitates higher standards for conceptual clarity and empirical verification (Seagrave & Grisso).

An additional concern involves the potential adverse effects that might befall youth in the juvenile justice system if the construct is extended downward (Edens, Guy, & Fernandez, 2003; Rockett, Murrie, & Boccaccini, 2007). Researchers have begun to



examine this issue in the juvenile justice context (Edens et al.; Marczyk, Heilbrun, Lander, & DeMatteo, 2005; Rockett et al.). A study conducted by Edens and colleagues reported that respondents were more likely to support the death penalty and less supportive of rehabilitative goals for juveniles described as exhibiting psychopathic traits. It is suggested that the ascription of psychopathic traits to juvenile offenders may facilitate stereotypic information processing which prevents the consideration of additional facts to the case (Edens et al.). The relation between psychopathic traits as operationalized by the PCL:YV and juvenile waiver to adult court has been examined (Marczyk et al.). Total scores on the PCL:YV were positively related to certification status and significantly predicted certification (Marczyk et al.). This suggests that juveniles manifesting psychopathic traits have a stronger potential to be prosecuted in criminal court.

Recent studies have examined the impact of the “psychopath” label as it relates to juvenile justice personnel (Murrie, Boccaccini, McCoy, & Cornell, 2007; Rockett et al., 2007). Encouragingly, diagnostic labels of “psychopathy” appear to have no influence on clinician ratings regarding treatment or on the decisions of juvenile court judges (Murrie et al.; Rockett et al.). However, psychopathic personality features have been associated with clinicians ascribing higher estimations of risk to youths (Rockett et al.). Also, psychopathic personality features appeared to influence juvenile court judges (Murrie et al.). The findings that description of psychopathic traits and not necessarily the overt diagnostic label influences key juvenile justice decision makers are concerning to the use of the PCL:YV, which does not diagnose or label youth but rather, characterizes their psychopathic traits. These results, in combination with the criticisms presented above

(Edens et al., 2001; Hart et al., 2002; Seagrave & Grisso, 2002) argue in favor of a cautionary approach to the concept of psychopathic traits in adolescence.

#### *Association Between Psychopathy and Violent Behavior*

As stated above, psychopathy as operationalized by the PCL-R has demonstrated a consistent and robust relation to general criminal as well as violent behavior (Gretton, Hare, & Catchpole, 2004; Porter, Brit, & Boer, 2001; Porter & Woodworth, 2007; Vaughn & Howard, 2005). The 5-year violence recidivism rate for adult male non-psychopaths is between 20% and 30% whereas for psychopaths it is approximately 50% (Vincent, 2006). Further, Porter and colleagues reported that psychopaths in their sample committed an average of 7.32 violent crimes while the average number of violent crimes was 4.52 for non-psychopaths. Knowledge of the robust relation between psychopathic traits and violence assists the prediction of future violence and risk (Porter & Woodworth).

*Gender differences in the association between psychopathy and violence in adolescence.* The construct of psychopathy has strong theoretical and empirical ties to violence in adulthood (Corrado, Vincent, Hart, & Cohen, 2004). Research has examined these empirical ties in adolescence by assessing the predictive validity of the PCL:YV (Corrado et al.; Gretton et al., 2004; Odgers et al., 2005; Schmidt, McKinnon, Chattha, & Brownlee, 2006; Vincent, Odgers, McCormick, & Corrado, 2008). In general, research indicates that the PCL:YV is predictive of general and violent recidivism in adolescent males but not females (Gretton et al.; Odgers et al.; Schmidt et al.; Vincent et al.).

Corrado and colleagues (2004) reported that two-factor PCL:YV scores were predictive of general and violent recidivism and youth high in psychopathic traits

committed violent offenses five months sooner than youths exhibiting fewer traits. The authors found that much of the predictive power for general recidivism was accounted for by the behavioral traits (represented by Factor 3 and Factor 4) while the prediction of violent recidivism was suggestive of the underlying personality disorder. Also of note, the predictive performance of total scores (AUCs between 0.65-0.68) was lower than has been reported in adults (AUCs between 0.70 – 0.80). Unfortunately, female adolescents were excluded from this study.

A similar study has examined the predictive validity of the PCL:YV among female adolescent offenders (Vincent et al., 2008). This study found that while the three and four-factor models of the PCL:YV were predictive of recidivism for males they were not predictive for females. In fact, a statistical trend was reported such that girls scoring high on the PCL:YV had a decreased likelihood of offending. Similar to the above study, the predictive ability of the PCL:YV for boys was primarily accounted for by the lifestyle and antisocial factors (factor 3 and 4).

*Mode of violence.* Beyond issues of general violent behavior, the construct of psychopathy has been associated with specific modes of violent behavior (Cornell, Warren, Hawk, Stafford, Oram, & Pine, 1996; O'Toole, 2007; Porter & Porter, 2007; Woodworth & Porter, 2002). Studies in the adult literature have documented how the violent crimes of psychopaths are qualitatively different from the crimes of non-psychopaths (Cornell et al.; O'Toole; Porter & Porter; Woodworth & Porter).

There are two major forms of violence reported in the literature, *reactive* and *proactive* (Dodge, 1991; Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Dodge & Schwartz, 1997; Fontaine, 2007). *Reactive* violence has been defined as a retaliatory

response to a perceived threat (Dodge & Schwartz, 1997). This form is an emotional reaction and has its theoretical roots in anger and frustration (Cornell et al., 1996; Dodge & Schwartz). Reactive violence has been referred to as “hot blooded” (Dodge & Schwartz). The second major mode of violence is *proactive*, also referred to as “instrumental” (Dodge & Schwartz; Woodworth & Porter, 2002). This mode of violence is more purposeful and underlying states of anger are not involved (Dodge & Schwartz). It has been described as highly organized and “cold-blooded” (Dodge et al.). In cases of proactive violence injury to the victim is secondary to some external goal (Woodworth & Porter). It has been suggested that reactive violence may be the more basic form of aggression whereas proactive violence may indicate more severe pathology (Cornell et al.).

Proactive violence is of interest to the study of psychopathic traits given its apparent relation to the mental processes underlying psychopathy (Cornell et al., 1996; O’Toole, 2007; Porter & Porter, 2007; Woodworth & Porter, 2002). Researchers have reported that adult psychopaths are far more likely than non-psychopathic adult offenders to commit acts of proactive violence (Cornell et al.; O’Toole; Porter & Porter; Porter & Woodworth, 2007; Woodworth & Porter). Cornell and colleagues found that psychopathic offenders were more likely to be proactively violent. This study found the same association in a sample of incarcerated offenders and as well as in participants that were referred for pretrial evaluation. Woodworth & Porter have reported similar findings between psychopathy and proactive violence when examining the specific violent act of homicide. They found that higher levels of instrumentality in homicides were related to higher PCL-R scores. Also, 93.3% of psychopathic offenders committed primarily

proactive homicides compared to 48.4% of non-psychopathic offenders. So, although nearly half of non-psychopathic offenders proved capable of committing primarily instrumental homicides, the relation was more dramatic in the psychopathic group.

Few studies have examined the relation between proactive violence and PCL:YV scores (Flight & Forth, 2007; Kruh, Frick, & Clements, 2005; Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004; Vitacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006). All of these studies employed male samples. Murrie and colleagues reported an association between PCL:YV scores and proactive violence. Adolescent males scoring high on the PCL:YV were more likely to engage in proactive violence, with a medium effect size. Flight and Forth reported mean differences in PCL:YV total scores between youths with a history of proactive violence. The authors conducted logistic regressions to predict proactive violence by separately examining the unique contribution of Interpersonal/Affective features and Behavioral features. The Affective/Interpersonal features but not the Behavioral features were found to significantly predict proactive violence.

Vitacco and colleagues (2006) examined different factor structures of the PCL:YV in relation to proactive violence. The four factor model accounted for 20% of the variance in proactive violence compared to the 8% accounted for by the three factor model. These results suggest that the four factor model best accounts for proactive violence. Further, a positive relation between the interpersonal factor (F1) and proactive violence was found while a negative relation between the antisocial factor (F4) and proactive violence was evident.

A recent study has examined psychopathic-like traits in a sample of detained adolescent females (Marsee & Frick, 2007). This study examined the presence of callous and unemotional (CU) personality traits as measured by the Inventory of Callous-Unemotional Traits. These traits are characterized as the absence of empathy or guilt. The authors reported that an association did exist between presence of CU traits and the expression of proactive overt aggression. Specifically, after controlling for reactive aggression, proactive aggression accounted for unique variance in CU traits.

*Relationship to victim.* Another qualitative difference between the crimes of psychopaths and non-psychopaths involves the offender's relationship to victims (Cornell et al., 1996; O'Toole, 2007). Reactive aggression is highly associated with a preexisting relationship between the offender and the victim (Cornell et al.; O'Toole). Conversely, in a study of adolescents, 98% of offenders engaging in unprovoked violence reported not knowing their victim (Kruh, Frick, & Clements, 2005). These results appear to support the relation between non-intimate relationship to victim and proactive violence.

#### *Rationale for this Study*

Understanding distinct forms of violence and aggression is important given that different mental processes may underlie each subtype (Dodge & Schwartz, 1997). It has been suggested that types of violent behavior that are related to psychopathy scores in adulthood should be predictive of scores in adolescence (Forth & Book, 2007). A variable that has emerged and appears of great practical and theoretical importance in this area is gender (Forouzan & Cooke, 2005). Unfortunately, there is a striking lack of research and theoretical linkages between psychopathic traits and violence in adolescent females (Odgers, Reppucci, & Moretti, 2005; Vincent, 2006). Also, most research on

psychopathy utilizing various forms of the psychopathy checklist has employed male samples (Nicholls, Ogloff, Brink, & Spidel, 2005). Although the research exploring psychopathy in females has increased throughout the past decade the prevailing assumption holds that “the male template of the disorder can be superimposed upon females” (Forouzan & Cooke, p.766). Therefore, it appears that an examination of the continuity of psychopathic traits between adolescence and adulthood must account for the impact of gender.

Perhaps of more importance than establishing theoretical links is the need to inform treatment and intervention efforts (Farrington, 2005). Gender differences have been reported between male and female adolescents in their overall level of need in terms of mental health services (Cauffman et al., 2007; Grisso, 2005; Vincent et al., 2008). As reported above, girls in juvenile justice settings have greater mental health problems and needs than boys (Grisso; Vincent et al.). Further, female offenders exhibit higher rates of symptoms compared to males (Cauffman et al.). An important implication of this research relating treatment needs and risk assessment is adolescents’ potential for rehabilitation (Grisso, 1996). In the case of both mental health needs and psychopathic traits it is imperative to understand the unique needs of adolescence females in order to tailor intervention strategies (Kataoka et al., 2001). A major obstacle to this endeavor is the lack of adequate research examining the relation between the manifestation of psychopathic traits and mental health needs in adolescents.

The current study will attempt to build on existing research relating psychopathic traits and proactive violence in adolescence (e.g., Flight & Forth, 2007; Kruh et al., 2005; Marsee & Frick, 2007; Murrie et al., 2004; Vitacco et al., 2006). It will extend the



findings previously reported by examining the relation of psychopathic traits and proactive violence in adolescent females. Given the relation between proactive violence and psychopathy in adults, an examination of proactive violence may serve to strengthen theoretical linkages between psychopathic traits and violence in adolescent females.

Psychopathic traits will be assessed and the manifestation of these traits, types of violence committed, and mental health needs of the offenders will be examined. There are two main research questions in this study. First, to what extent are characteristics of violence that are theoretically relevant to psychopathy (i.e., proactive violence and non-intimate relationship to victims) related to psychopathic traits in adolescent females? Secondly, what is the relation between mental health needs and psychopathic traits in adolescent females?

To assess issues related to the theoretically relevant linkages of psychopathy in adolescent females and the influence of mental health needs the following three hypotheses will be tested:

*Hypothesis 1:* Females scoring high on the PCL:YV and on Affective/Interpersonal features will be more likely to engage in proactive violence compared to low scoring females.

*Hypothesis 2:* Females with a history of psychiatric hospitalizations will score higher on the PCL:YV than females without prior psychiatric hospitalizations.

*Hypothesis 3:* The total number of treatment needs and number of prior psychiatric hospitalizations will significantly contribute to the prediction of PCL:YV scores beyond the offense variables for females.

## Method

### *Subjects*

Subjects were 100 juvenile offenders from the Massachusetts Department of Youth Services (DYS). The sample was composed of 50 male and 50 female offenders (see Table 1). Subjects ranged in age from 13 to 19 ( $M = 16.08$ ;  $SD = 1.24$ ). The racial composition of the sample was 49 Caucasian (49%), 26 African American (26%), 18 Hispanic (18%), 3 Asian (3%), and 4 with mixed ethnicity (4%). No significant differences were found between genders for age or race. Of the entire sample, 12 youths (9 female and 3 male) were not detained for a violent offense and were excluded from some analyses.

All of the offenders were evaluated by the Forensic Evaluation Service of the Bedford Policy Institute between 1996 and 2003. The Bedford Police Institute developed, implemented, and operated an evaluation service to provide risk and treatment needs assessments for juvenile offenders upon a request from the DYS. The Forensic Evaluation Service began in 1996 and through 2003 had completed approximately 2800 evaluations and compiled an extensive computer database. All evaluations were conducted by doctoral-level psychologists, licensed in Massachusetts, and possessing the added credential of Designated Forensic Psychologist (DFP) by the Massachusetts Department of Mental Health.

The cases included in the sample were randomly selected from the database by a Bedford Policy Institute employee. Availability of a redacted forensic evaluation report with the name and other identifiers removed was necessary for inclusion in the study. The identities of offenders were kept strictly confidential. Data about each youth

offender were collected solely from case file and the forensic mental health report. No attempt to contact the offenders was made. There was no inclusion or reporting of names or other identifying information about any offender in this study. The study strictly followed American Psychological Association ethical guidelines and was approved by the DYS Institutional Review Board as well as the Roger Williams University Human Subject Review Board (see Appendix A).

### *Materials*

*Research materials.* The case information used in this study was part of a computer database compiled through the Forensic Evaluation Service of the Bedford Policy Institute. The evaluations completed as part of this service were comprehensive and extensive. Assessments included a full review of relevant records and reports, consultations with casework team members and program clinicians, and a complete and thorough clinical interview. The interview focused on risk factors in the youth's history as well as their current functioning. Juveniles were also asked to provide an account of his/her past offenses, highlighting precipitant conditions and post-offense reactions and behaviors. On the basis of the material gathered, an evaluation was prepared with the intent to inform and aid in the classification of offenders and the identification of relevant treatment needs.

*Forensic evaluation data sheet.* Upon completion of the forensic evaluation the psychologist or other trained Bedford Policy Institute employee extracted information relevant to six broad areas and coded information on a forensic evaluation data sheet (FEDS; see Appendix B). The six areas represented on the data sheet included: 1) demographic information (e.g., age, gender, etc.); 2) delinquency history information

(i.e., list of prior delinquency adjudication and legal findings); 3) mental health history and data (e.g., prior psychiatric hospitalization, current medication, history of suicide attempts, etc.); 4) clinical data/risk factors (e.g., history of abuse, substance abuse problems, mode of violence); 5) nature of the offense (e.g., age of victim, gender of victim, relationship to victim, etc.); and 6) clinical judgments (e.g., type of service recommended, risk factors identified, treatment needs, etc.). The information from the data sheet was entered into a computer database.

*Predictor variables.* Four predictor variables were selected from the FEDS: “mode of violence” and “relationship to victim” pertaining to the commitment offense, and “prior psychiatric hospitalizations” and “treatment needs” pertaining to the youths’ mental health history and current status.

*Mode of violence.* On the FEDS, the mode of violence is listed as either “reactive,” “proactive,” or “mixed.” Consistent with existing research (Cornell et al., 1996; Flight & Forth, 2007; Murrie et al., 2004) this variable was recoded as “0” for purely reactive violence and “1” for violence containing any proactive element (i.e., “proactive” or “mixed”).

*Relationship to victim.* The relationship to the victim was coded as one of the six categories indicated on the FEDS (i.e., “family member,” “friend,” “girl/boyfriend,” “acquaintance,” “stranger,” or “rival”). The relationship to the victim was then recoded as “0” if the relationship was intimate (if victim was a “family member,” “friend,” or “girl/boyfriend,” as indicated on the FEDS) and “1” if the relationship is non-intimate (if victim was an “acquaintance,” “stranger,” or “rival,” as indicated on the FEDS).

*Total number of treatment needs.* On the FEDS 10 treatment options are listed for clinicians to endorse if the youth has the particular treatment need and there is an area for “other” where clinicians can list additional services needed. The total number of treatment needs variables was constructed by coding each of the ten listed treatment needs (e.g., anger control, substance abuse, family therapy) as either “1” if clinicians endorsed that need for the youth or “0” if the clinician did not, and any treatment needs listed under “other” were summed and the number of “other” needs was entered as a continuous variable. These 11 variables were then summed to attain the “total treatment needs” variable.

*Prior psychiatric hospitalizations.* The number of prior psychiatric hospitalizations variable was taken from the FEDS as a continuous variable. It was then recoded into a dichotomous variable, with “1” indicating any prior psychiatric hospitalizations and “0” indicating the youth had never been psychiatrically hospitalized.

*PCL:YV.* The PCL:YV (see Appendix C) was scored using the case files of the offenders. The PCL:YV has been shown to be valid when scored based solely on case files (Forth et al., 2003; Forth, 2005). The PCL:YV is made up of twenty items that are scored as either 0 if the trait does not apply to the youth, 1 if the trait is present but not to a substantial degree, or 2 if the trait is definitely present with a maximum score of 40 (Forth et al.). To aid in the scoring and determination of each trait the rater is provided with an item description and some behavioral exemplars (Forth et al.). The inter-rater reliability of the PCL:YV has been supported, with a single-rater intra-class correlation ranging from .90 to .96 (Forth et al.).

A four factor structure has been shown to adequately characterize the PCL:YV and was employed in this study to provide indices of Affective/Interpersonal features and Behavioral features to be compared across genders (see Appendix D; Forth et al., 2003; Jones et al., 2006; Neumann et al., 2006; Salekin et al., 2006; Vitacco et al., 2006). Factor 1, “interpersonal features” consists of 4 items (e.g., pathological lying and manipulation for personal gain) and scores range from 0 to 8. Four items comprise Factor 2, “affective features” (e.g., lack of remorse and shallow affect) with scores on this factor ranging from 0 to 8. Factor 3 is labeled “lifestyle features” and consists of 5 items (e.g., impulsivity and irresponsibility) with scores ranging from 0 to 10. Lastly, Factor 4, “antisocial features” is comprised of 5 items (e.g., poor anger control and serious criminal behavior) with scores ranging from 0 to 10. As in previous research (i.e., Flight & Forth, 2007) Factor 1 and Factor 2 were summed into a combined Affective/Interpersonal features score (score ranging from 0 to 16) and Factors 3 and 4 were summed into a combined Behavioral features (scores range from 0 to 20). Lastly, the PCL:YV scores were recoded into high and low categories based on a median split of the entire sample. This included PCL:YV total score (median = 17.45), Affective/Interpersonal Features (median = 7), and Behavioral features (median = 9).

Thirty cases (30% of the sample) were randomly selected to assess inter-rater reliability of the PCL:YV scores. Each rater independently scored the PCL:YV. Intra-class correlation coefficients (ICC) were computed for PCL:YV total score (ICC = .95), Interpersonal Factor (ICC = .91), Affective Factor (ICC = .94), Lifestyle Factor (ICC = .83), and Antisocial Factor (ICC = .86). The results indicate acceptable interrater

reliability, consistent with ICCs obtained in previous research with the PCL:YV (Forth et al., 2003).

### *Design and Procedure*

Once permission to access the case information was secured the reports were used to score the PCL:YV according to the detailed instructions and scoring criteria found in the manual (Forth et al., 2003). The raters were two graduate students studying forensic psychology at Roger Williams University who attended two-day training on the scoring and administration procedures of the Hare measures of psychopathy.

The case report that raters received were redacted in order to ensure confidentiality. Cases were assigned an identification number and were not referred to with any information that might identify the offender. All data collection and coding was conducted using identical, standardized data collection forms with a cover page ensuring the privacy and confidentiality of the information (see Appendix E). Raters completed all PCL:YV ratings before collecting the offense and mental health data from the FEDS.

To test for differences on the use of proactive violence between females scoring high and those scoring low on the PCL:YV total score and Affective/Interpersonal features, chi-squares were conducted. To assess differences in PCL:YV scores between females with a history of prior psychiatric hospitalization and those without, independent samples t-tests were conducted. Lastly, to examine the predictive validity of theoretically relevant offense variables on PCL:YV scores and the interaction of mental health variables hierarchical multiple regressions were conducted.



## Results

### *Descriptive Statistics*

The descriptive statistics are summarized in Table 1. Scores on the PCL:YV for the entire sample ranged from 6.30 to 35 ( $M = 17.82$ ,  $SD = 5.66$ ). The scores for females ranged from 6.3 to 30 ( $M = 17.97$ ,  $SD = 5.18$ ) and the scores for males ranged from 8 to 35 ( $M = 17.68$ ,  $SD = 6.15$ ). There were no mean differences between genders on PCL:YV total, Affective/Interpersonal, or Behavioral scores. Of the 88 violent offenders, 58 (65.9%) were classified as displaying any proactive element in their violence while the remaining 30 (34.1%) engaged in purely reactive violence. Among female offenders, 24 (58.5%) displayed proactive violence compared to 34 males (72.3%) engaging in proactive violence. Genders did not significantly differ in their manifestation of proactive violence.

The total number of treatment needs ranged from 0 to 9 ( $M = 4.43$ ,  $SD = 1.88$ ). The number of treatment needs for the females ( $M = 4.76$ ,  $SD = 1.87$ ) did not differ significantly from males ( $M = 4.10$ ,  $SD = 1.84$ ). Of the 100 juvenile offenders in the sample, 38 (38%) had at least one previous psychiatric hospitalization. Of these 38, 21 (55%) were female and 17 (45%) were male. No significant gender differences were found in terms of prior psychiatric hospitalization or total number of treatment needs. Of note, gender differences did manifest with respect to specific treatment needs. Clinicians reported that 30 females (60%) were in need of dynamic psychotherapy for trauma/loss, compared to just 8 (16%) males,  $\chi^2(1, n = 100) = 20.53, p < .001$ . Also, consistent with the research literature documenting adolescent females in the juvenile justice system

exhibiting greater mental health needs, 27 (54%) females compared to 15 (30%) males were in need of mental health treatment,  $\chi^2(1, n = 100) = 5.91, p = .013$ .

*Hypothesis 1: Females scoring high on the PCL:YV and Affective/Interpersonal features will be more likely to engage in proactive violence compared to females scoring low.*

To examine the use of proactive violence based on PCL:YV scores chi-squares were conducted. A chi-square was conducted to compare females that scored high on the PCL:YV total score on their manifestation of proactive violence. The results were non-significant for females. However, there was a significant difference for males  $\chi^2(1, n = 47) = 5.63, p = .019$ . Additional chi-squares were conducted to compare females that scored high on Affective/Interpersonal features and their use of proactive violence. This chi-square was significant for females,  $\chi^2(1, n = 41) = 5.53, p = .020$  and males  $\chi^2(1, n = 47) = 8.93, p = .003$  (see Table 2).

*Hypothesis 2: Females with a history of psychiatric hospitalizations will score higher on the PCL:YV than females without prior psychiatric hospitalizations*

An independent samples t-test was conducted with history of prior psychiatric hospitalization as the grouping variable and PCL:YV scores (total, Affective/Interpersonal features, and Behavioral features) as the continuous variables. No significant mean differences were found on PCL:YV scores for males. However, girls with a history of prior psychiatric hospitalization ( $M = 20.45, SD = 4.93$ ) scored significantly higher than girls with no psychiatric hospitalization history ( $M = 16.18, SD = 4.66$ ) on PCL:YV total score,  $t(48) = -3.12, p = .003$  (see Figure 1). The magnitude of this difference was fairly large ( $\eta^2 = .169$ ). Also, girls with a history of prior psychiatric hospitalization ( $M = 10.33, SD = 2.70$ ) scored significantly higher than girls with no

psychiatric hospitalization history ( $M = 7.96$ ,  $SD = 2.46$ ) on Behavioral features,  $t(48) = -3.24$ ,  $p = .002$  (see Figure 2). Similarly, the magnitude of this difference was large ( $\eta^2 = .179$ ).

*Hypothesis 3: Mental health variables will significantly contribute to the prediction of PCL:YV scores beyond the offense variables for female.*

A series of three hierarchical multiple regressions were conducted to examine the predictive validity of proactive violence, non-intimate relationship to victim, and mental health needs on PCL:YV scores. For the 88 violent offenders the same three regressions were conducted separately for females ( $n=41$ ) and males ( $n=47$ ). A separate regression was run for each of the three criterion variables: PCL:YV total score, Affective/Interpersonal features score, and Behavioral features score. In each regression the theoretically relevant offense variables (proactive violence and non-intimate relationship to victim) were entered at Step 1 and the mental health variables (number of prior psychiatric hospitalizations and total number of treatment needs) were added at Step 2 to assess their ability to predict PCL:YV scores beyond the offense variables.

The first regression was conducted to predict PCL:YV total scores (see Table 3). For female offenders the offense variables did not predict total score, accounting for just 7.3% of the variance. However, when the mental health variables were added the model began predicting, accounting for 29.6% of the variance,  $F(4, 36) = 3.78$ ,  $p = .011$ . The two mental health variables added significantly to the prediction, accounting for an additional 22.3% of the variance,  $\Delta R^2 = .223$ ,  $\Delta F(2, 36) = 5.69$ ,  $p = .007$ . The only significant predictor of PCL:YV total score for females was total number of treatment needs ( $\beta = .33$ ,  $p = .030$ ). For males offenders, the offense variables accounted for 14.5%

of the variance, producing a model that was predictive of total score,  $F(2,44) = 3.73, p = .032$ . The addition of the mental health variables at Step 2 only accounted for an additional 8.4% of the variance which was not a significant increase. Overall, the model containing all four predictors remained significant for males  $F(4,42) = 3.12, p = .025$ . However, only two variables were significant predictors of PCL:YV total score for boys, with proactive violence having a higher beta value ( $\beta = .37, p = .011$ ) than total number of treatment needs ( $\beta = .30, p = .042$ ).

The second regression predicted Affective/Interpersonal features (see Table 4). For females the offense variables accounted for 15.1% of the variance and were predictive of Affective/Interpersonal features,  $F(2,38) = 3.38, p = .044$ . However, the mental health variables entered at Step 2 rendered the model insignificant and added only 3.6% of the variance. The only significant predictor of Affective/Interpersonal features for females was proactive violence ( $\beta = .32, p = .045$ ). For males, a similar dynamic was evident, with the offense variables significantly predicting Affective/Interpersonal features but the mental health variables adding little ( $\Delta R^2 = .041$ ). However, unlike for females, the overall model with all four predictors entered remained significant,  $F(4,42) = 3.93, p = .009$ . Similar to the model for females, proactive violence was the only variable that predicted Affective/Interpersonal features ( $\beta = .44, p = .002$ ).

Finally, the third regression used the Behavioral features as the criterion variable (see Table 5). For females the offense variables were not predictive of Behavioral features, accounting for a mere 0.7% of the variance. However, when the mental health variables were added the model began predicting Behavioral features,  $F(4,36) = 3.88, p = .010$ . The addition of the mental health variables accounted for an additional 29.4% of

the variance,  $\Delta R^2 = .294$ ,  $\Delta F(2,36) = 7.57$ ,  $p = .002$ . The variable that was responsible for this model, as it was the only significant predictor, was total number of treatment needs ( $\beta = .44$ ,  $p = .004$ ). For males neither the offense nor mental health variables predicted Behavioral features.

## Discussion

The relative lack of research on psychopathic traits in female adolescent offenders has necessitated a focus attention on this specific population (Odgers et al., 2005; Vincent, 2006). Further, it is widely noted gender differences in mental health problems among juvenile offenders, such that adolescent females exhibit more mental health problems than male offenders (Abram et al., 2003; Cauffman et al., 2007; Grisso, 2005; Kataoka et al., 2001; Vincent & Grisso, 2005, Vincent et al., 2008). Thus, this study sought to examine the relation between mental health problems and the manifestation of psychopathic traits in a sample of adolescent offenders.

The first hypothesis posited that female adolescents exhibiting high levels of psychopathic traits and especially the Affective/Interpersonal features would be more likely to engage in proactive violence than females with low levels of psychopathic traits. This hypothesis was partially supported. Although female offenders in the high PCL:YV total group did not differ from low scoring females in their use of proactive violence there was a significant difference when it came to Affective/Interpersonal features. While males high on Affective/Interpersonal traits also differed significantly these traits were much more discriminating for high scoring males compared to females, with only 1 high scoring male not exhibiting proactive violence. These findings suggest a stronger association between proactive violence and psychopathic traits in adolescent males.

The second hypothesis, that female adolescent offenders with a history of psychiatric hospitalizations would exhibit higher levels of psychopathic traits than females without prior hospitalizations, was supported. Females with a history of psychiatric hospitalizations had higher PCL:YV total scores and Behavioral features. Gender differences emerged yet again with history of prior psychiatric hospitalization having no influence on PCL:YV scores for males.

Lastly, the third hypothesis stated that for female adolescent offenders the total number of treatment needs and number of prior psychiatric hospitalizations would significantly contribute to the prediction of psychopathic traits beyond variables related to the offense. This hypothesis was partially supported. The total number of treatment needs, but not the number of prior psychiatric hospitalizations, added to the prediction of PCL:YV total scores and Behavioral features beyond the offense variables for females. Gender differences were again found. Like with females, number of prior psychiatric hospitalizations was not predictive of any PCL:YV scores for males. Unlike with females, the total number of treatment needs was only predictive of PCL:YV total score and not the Affective/Interpersonal or Behavioral features. Also, it was a stronger predictor of PCL:YV scores for girls than for boys, suggesting a more dramatic relation between mental health needs and psychopathic traits for females.

#### *Theoretical and Treatment Implications*

The most compelling implication from these findings is that the construct of psychopathy manifests differently in adolescent females than in males. The manifestation of psychopathic traits in adolescent females appears to be associated with mental health problems. This association was present across two separate analyses with

treatment needs exhibiting an association with PCL:YV total scores and Behavioral features and with girls having a history of psychiatric hospitalization scoring higher on PCL:YV total score and Behavioral features. These findings also report consistent gender differences. Specifically, the association found between mental health problems and psychopathic traits in females was not present in males. This appears to suggest that mental health problems may be related to the development of psychopathy in adolescent females and not males. The emergence of gender differences also appears to suggest differential etiological pathways.

These findings may also suggest that mental health problems are a significant risk factor for female offending behavior. This assertion appears to be supported in the literature. Dixon and colleagues (2004) reported that mental health status was the predominant factor associated with offending behavior in adolescent females. The current findings suggest that psychiatric disturbance in adolescent female offenders may be manifesting as psychopathic traits, specifically the Behavioral features which include simulation seeking, impulsivity, and serious criminal behavior. Also, these psychopathic traits are not evidence of “true” psychopathy but rather psychiatric disturbance in some way mimics psychopathy in adolescent females. It is telling that mental health problems are related to Behavioral features which are typically not seen as characteristic of the prototypical or primary “psychopath” and are not related to the Affective/Interpersonal features. Thus, it appears that high scores on the PCL:YV for adolescent females may in large part be due to mental health problems rather than severe character pathology. If this is the case, the confounding of mental health problems on the measurement and assessment of psychopathy in adolescent females would join current criticisms in calling

for caution in ascribing any diagnostic value to a PCL:YV score. It would appear that in the case of adolescent females scores may be inflated by mental health problems and thereby increase the false positive rate.

An alternative explanation for these findings may be systematic filtering of female offenders into juvenile justice such that the girls with the most serious delinquency and behavioral histories and have the most acute mental health problems enter secure confinement (Cauffman et al., 2007). It has also been suggested, and the results of this study appear to support the contention that female offenders constitute a unique population that cannot be understood by comparisons with male offenders (Cauffman et al.). If this is the case, it would appear that perhaps the PCL:YV is measuring traits phenotypically similar to psychopathy in adulthood in male adolescents but may be confounded by mental health problems of adolescent females. Also, this contention would suggest the need to develop and implement gender-specific intervention strategies and treatment plans in juvenile justice. There is also a potential for adolescent females to receive interventions targeting their conduct problems and “acting-out” (Dixon, Howie, & Starling, 2004). In light of these results, this approach may be missing the influence that mental health problems have on conduct problems in adolescent females.

It is also noteworthy that these results appear similar to findings reported in previous research where the experience of victimization behaved similarly to total treatment needs in the current study (Odgers et al., 2005). This suggests that the influence of mental health variables reported here may provide incremental support to the existence of measurement bias in the PCL:YV. Given that the tool was geared primarily



toward males it may not be measuring equivalent traits in adolescent females (Vincent et al., 2008). Initial item response theory analyses with adolescent females have reported gender differences in some PCL:YV item parameters (Schrum & Salekin, 2006; Vincent, 2002). Commentators on the extension of psychopathy to adolescence have called for increased conceptual clarity and empirical verification (Seagrave & Grisso, 2002). Given these results it would appear that in the case of adolescent females, there is more work to be done in order to gain conceptual clarity and empirical verification of psychopathic traits as they manifest in adolescence.

The results regarding proactive violence and psychopathic traits appear to support that similar relations exist between proactive violence and psychopathic traits in adolescence that have been reported in adults. For males in this sample proactive violence was a significant predictor of PCL:YV total scores and distinguished between boys that scored high vs. low. These findings are consistent with recent findings regarding proactive violence and PCL:YV scores in male adolescents (Flight & Forth, 2007). These parallel findings may suggest continuity between psychopathic traits in adolescence and adulthood. The problem is that it is unclear what percentage of youth will persist and continue to develop psychopathy in adulthood.

#### *Limitations and future directions*

These results need to be interpreted in light of the limitations of the study. Regarding the regression analyses, the total treatment needs variable was collect at the same time as PCL:YV scores. Thus, no temporal link can be made between these two measures. So, while total treatment needs statistically “predicts” PCL:YV scores for females this does no mean that these variables pose any “real-world” predictive validity.

However, the mean differences found between females with and without a history of psychiatric hospitalizations add credibility to the regression findings given that this variable did precede the PCL:YV scores. These predictor variables were also based on evaluator's rating and a potential exists for evaluator biases. There were no mean differences between genders but there remains the possibility that clinicians exhibited gender biases when recommending services for the youths.

The use of archival data further limits these findings. Neither the case files nor the forensic evaluation data sheets were compiled for research purposes. However, to address this concern the violence variables were coded categorically. Given the archival nature of our data, the mental health variables were not optimally operationalized. Rather, the existing data was used to construct meaningful and representative measures of mental health needs.

With respect to the PCL:YV, although it is preferable to include an interview it acceptable to score it based solely on case file information in the context of an archival study such as this one (Forth et al., 2003; Forth, 2005). Another limitation of this study is that the raters where not blind to the hypotheses. To address this concern and minimize threats to validity the raters completed all PCL:YV ratings before collecting the data from the FEDS. Also, this study included two 19 year old subjects. There was 1 female and 1 male over the age of 18. Although the PCL:YV is validated for youths age 12 to 18 there are consistent reports subjects over 18 used in research (e.g., Flight & Forth, 2007 who report an age range up to 20). Further, many of the samples cited in the PCL:YV manual report age ranges including 19 year olds (Forth et al., 2003). The two cases in question were extension evaluations so although the subject was 19 at the time the report was

written, much of the information contained the reports was historical and described the youth as they were at an age under 18. Given this rationale, and given that they made up 2% of the sample, the 19 year old subjects were retained in all analyses.

The sample employed in this study was fairly small, although comparable to other studies using the PCL:YV (e.g., Flight & Forth, 2007; Schrum & Salekin, 2006). Flight and Forth investigated proactive violence in a sample of 51 male adolescents and employed regression analyses. Schrum & Salekin employed a sample of 123 adolescent females. This sample totaled 100 youths but all the analyses were conducted separately by gender (n=50). A larger sample would have increased the power of our analysis and perhaps revealed additional associations between mental health needs, offense variables, and psychopathic traits.

Further research is needed to investigate and parse out the relation between mental health problems and psychopathic traits in adolescent females. Longitudinal studies are needed to understand the temporal relation between psychopathic traits and mental health problems. Also, this type of design could investigate issues related to the stability of PCL:YV scores and mental health needs throughout adolescence and into adulthood. A clearer understanding of how mental health problems are related to psychopathic traits would provide compelling benefits to intervention strategies. It would also stand to inform the debate on etiological issues of psychopathy in adolescent females.

The findings of this study regarding mental health needs as well as previous research regarding victimization (Odgers et al., 2005) suggest the presence of gender-specific risk factors that are related to higher PCL:YV scores in adolescent females.

Further investigation of these and potentially additional risk factors is crucial to inform theoretical as well as treatment efforts involving serious youth offenders. It would also be beneficial to examine mental health needs and psychopathic traits and their relation to recidivism. Future research should address the relation between mental health and conduct problems in adolescent females. Furthering the knowledge base in this area would aid in developing more appropriate intervention strategies.

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Appendix A  
Letter of Approval for Research  
Massachusetts Department of Youth Services Institutional Review Board



*The Commonwealth of Massachusetts*

Executive Office of Health and Human Services  
**Department of Youth Services**  
27 Wormwood Street, Suite 400  
Boston, MA 02210-1613

DEVAL PATRICK  
GOVERNOR

TIMOTHY MURRAY  
LIEUTENANT GOVERNOR

JUDYANN BIGBY, M.D.  
SECRETARY

JANE E. TEWKSBURY, Esq.  
COMMISSIONER

617.727.7575  
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Frank DiCataldo, Ph.D.  
Bedford Policy Institute  
35 Braintree Hill Office Park  
Braintree, MA 02184

November 20, 2007

Dear Frank:

I am pleased to notify you that your project, *Violence Risk in Adolescent Females* (Principal Investigators: Nathan Cook and Trevor Barese) has been approved by the Institutional Review Board of the Massachusetts Department of Youth Services.

**At the completion of your research, please send a copy of the final report to me at the address below.** Best of luck with this project. If you have any questions or comments, feel free to contact me.

Sincerely,

Robert Tansi  
Institutional Review Board Chair  
Department of Youth Services  
27 Wormwood St., Suite 400  
Boston, MA 02210-1613

**Tel:** 617-960-3348

**Email:** [robert.tansi@state.ma.us](mailto:robert.tansi@state.ma.us)

Appendix B  
Forensic Evaluation Data Sheet  
(Bedford Policy Institute)

*I. Demographic Information*

**Name:**

**Age:**

**DOB:**

**Date of Commitment:**

**Mid#:**

**Area:**

**Committing Court:**

**DYS Program:**

**Dates of Interview:**

**Name of Evaluator:**

**Race/Ethnicity:**

**Gender:**

**Legal Status:** Commit to 18      Youthful Offender      Extension of Commit  
Detained

**Type of Evaluation:** Class      Extension      68(a)      Assess      Testing

**Number of Commitments:**

**Referral Number:**

*II. Delinquency History Information*

**List of Prior Delinquency Adjudication and Legal Findings:**

Name of the Offense Outcome and Date	Date of Arraignment	Legal
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**Commitment offense(s):**

Name of the Offense	Date of Arraignment
---------------------	---------------------

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**III. Mental Health History and Data**

**Prior psychiatric hospitalization:** Yes or No

**Number of psychiatric hospitalizations:** \_\_\_\_\_

**Current Medication:** Yes or No

**Name of *current* medications:**

**Name of *prior* medication:**

**History of suicide attempts:** Yes or No

**Number of suicide attempts:** \_\_\_\_\_

**Methods Used and #:** Overdose ( # ) Cutting ( # ) Hanging ( # )  
Other: \_\_\_\_\_

**History of suicide threats: (only if there is no hx of attempts):** Yes or No

**Self Injurious Behavior:** Yes or No  
Scratching Inserting Foreign Objects Ingesting Foreign Objects Head  
Banging Burning Other:

**Prior Diagnoses:**

**IV. Clinical Data/ Risk Factors**

**Positive Parental Support or Nurturance:** Yes No Not Clear

**Parental Control and Accountability for Juvenile:** Yes No Not Clear

**Hx of attachment problems early childhood:** Yes No Not Clear

**History of abuse:** Yes or No

**Type of abuse:** Physical Sexual Emotional Neglect

**Prior History of DSS Services:** Yes or No

**Prior History of CHINS:** Yes or No

**Academic Achievement:** High Average Poor No data

**History of Truancy:** Yes or No

**Fighting in School:** Yes or No

**Disruptive Behavior at School:** Yes or No

**Weapons at School:** Yes or No

**Retained a Grade:** Yes or No **If yes, how many:** \_\_\_\_\_

**IQ Level:** Superior or Above Average Below Average Borderline  
MR Unknown

**Hx of special education services:** Yes or No

**Behavior Problems:** \_\_\_\_\_

**Learning Disability:** \_\_\_\_\_

**Both:** \_\_\_\_\_

**Substance abuse problems:** Yes or No

**Type of Substances Abused:**

**Negative peer relationships:** Yes or No

**Gang Affiliation:** Yes or No

**Pro-social or positive interests or hobbies:** Yes or No or Unknown

**What are they?** \_\_\_\_\_

**Admits to Commitment Offense:** Yes Partial No

**Blames the Victim:** Yes Partial No

**Blames external factors:** Yes Partial No

**Minimizes harm:** Yes Partial No

**Mode of violence:** Reactive Proactive Mixed Unknown N/A

**V. Sexual Offense (If commitment offense is not a sexual offense, skip to next section)**

**Type of victim:** Child (5 yrs. Younger) Peer aged Adult Disabled  
Mixed

**Age of victim:** \_\_\_\_\_

**Gender of victim:** \_\_\_\_\_

**Relationship to victim:** stranger acquaintance girlfriend bio sib  
step/foster sib

**Location:** residence outdoors motor vehicle other: \_\_\_\_\_

**Time:** \_\_\_\_\_

**Type of offense:** Solitary or Group

**Number of co-defendants:** \_\_\_\_\_

**History of prior sexual offenses:** Yes or No

**Number of prior sexual offenses:** \_\_\_\_\_

**History of violent delinquency:** Yes or No

**History of non-violent delinquency:** Yes or No

**Method of victim compliance:** Grooming Threat Force Violence  
Other:

**Type of sexual assault:** Touching Forced oral sex Vaginal Intercourse  
Anal intercourse

**Weapon present:** Yes or No

**Type of weapon:** \_\_\_\_\_

**Violence Used:** Yes or No

**Level of victim injury:** Mild Moderate Severe

**Deviant arousal pattern:** Pedophilic Violent other: \_\_\_\_\_ unknown

**Substance abuse at time of offense:** Yes or No

► *Violent Offense (if commitment offense is a sexual offense, do not complete this section)*

**Type of offense:** Solitary or Group

**Number of co-defendants:** \_\_\_\_\_

**Weapon present:** Yes or No

**Type of weapon:** Handgun Shotgun or rifle Knife Blunt object  
other: \_\_\_\_\_

**Victim injury:** Yes or No

**Level of victim injury:** Mild Moderate Severe

**Verbal threat:** Yes or No

**Substance abuse at time of offense:** Yes or No

► *Victim Characteristics*

**Number of victims:** \_\_\_\_\_

**Gender:**

**Age:**

**Race:**

**Relationship:** Friend Girl/boyfriend Family member Stranger  
Acquaintance Rival

**Location:** Residence School Outdoors MBTA Public  
building

**Time:** \_\_\_\_\_

## *VI. Conclusions*

**1. *Diagnostic Impressions***

**Diagnoses, including substance abuse:**

**Recommendation of DMH services:** Yes or No

**Type of service recommended:** Inpatient          IRTTP          Residential  
Case management

**2. *Risk Assessment***

**Risk factors identified: (Highlight all that apply)**

1. Early childhood abuse
2. Witnessed domestic violence
3. Anti-social role modeling
4. Poor attachment history
5. Parental mental illness
6. Parental substance abuse
7. Early developmental/emot. problems
8. Early pattern of undercontrolled behv.
9. Early aggression/destructiveness
10. Poor early peer socialization
11. Poor school functioning
12. Substance abuse
13. Negative peer group
14. Poor parental control
15. Poor parental support/nurturance
16. Weapon possession
17. Violence history
18. Impulsivity/low self-control
19. No pro-social interests
20. Grandiose/self-inflated:
21. Externalizes blame
22. Justifies behavior
23. Minimizes harm
24. Low empathy
25. Thrill seeking
26. Dominance/power needs
27. Depression
28. High harm vigilance
29. Psychotic paranoia
30. Perceives malevolent threat or challenge
31. Violence as means to an end
32. Anger
33. Retaliation

34. Other: \_\_\_\_\_

**Risk level:**    High    Moderate    Low

**3. *Placement and Treatment Needs***

**a. Placement recommendation:**    Secure    Residential    Day reporting with  
clinical services    DMH

**b. Treatment needs: (highlight all that apply)**

1. Anger control
2. Substance abuse
3. Mental health
4. Sex offender (cog)
5. Sex offender (recondition)
6. Social skill
7. Violence relapse prevention
8. Family therapy
9. Dynamic psychotherapy for trauma/loss
10. Behavioral management
11. Other: \_\_\_\_\_

Appendix C  
Psychopathy Checklist: Youth Version  
(Forth, Kosson, & Hare, 2003)

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Item
1. Impression management
2. Grandiose sense of self-worth
3. Stimulation seeking
4. Pathological lying
5. Manipulation for personal gain
6. Lack of remorse
7. Shallow affect
8. Callous/lack of empathy
9. Parasitic orientation
10. Poor anger control
11. Impersonal sexual behavior
12. Early behavior problems
13. Lacks goals
14. Impulsivity
15. Irresponsibility
16. Failure to accept responsibility
17. Unstable interpersonal relationships
18. Serious criminal behavior
19. Serious violations of conditional release
20. Criminal versatility

---

Appendix D  
 Four Factor Structure of PCL:YV  
 (Forth, Kosson, & Hare, 2003)

Item	Factor
1. Impression management	1
2. Grandiose sense of self-worth	1
3. Stimulation seeking	3
4. Pathological lying	1
5. Manipulation for personal gain	1
6. Lack of remorse	2
7. Shallow affect	2
8. Callous/lack of empathy	2
9. Parasitic orientation	3
10. Poor anger control	4
11. Impersonal sexual behavior	-
12. Early behavior problems	4
13. Lacks goals	3
14. Impulsivity	3
15. Irresponsibility	3
16. Failure to accept responsibility	2
17. Unstable interpersonal relationships	-
18. Serious criminal behavior	4
19. Serious violations of conditional release	4
20. Criminal versatility	4

Factor 1: Interpersonal  
 Factor 2: Affective  
 Factor 3: Lifestyle  
 Factor 4: Antisocial



# RESEARCH MATERIALS

**CONFIDENTIAL**

Subject ID: \_\_\_\_\_

Rater: \_\_\_\_\_

# PCL:YV Score Sheet

Subject ID: \_\_\_\_\_

Rater: \_\_\_\_\_

Item	Score	Factor 1	Factor 2	Factor 3	Factor 4
1. Impression management					
2. Grandiose sense of self-worth					
3. Stimulation seeking					
4. Pathological lying					
5. Manipulation for personal gain					
6. Lack of remorse					
7. Shallow affect					
8. Callous/lacking empathy					
9. Parasitic orientation					
10. Poor anger control					
11. Impersonal sexual behavior					
12. Early behavior problems					
13. Lacks goals					
14. Impulsivity					
15. Irresponsibility					
16. Failure to accept responsibility					
17. Unstable interpersonal relationships					
18. Serious criminal behavior					
19. Serious violations of conditional release					
20. Criminal versatility					
Total Score:					

Omitted Items:					
----------------	--	--	--	--	--

Prorated score:					
-----------------	--	--	--	--	--

Total Score:	
Factor 1: Interpersonal:	
Factor 2: Affective:	
Factor 3: Lifestyle:	
Factor 4: Antisocial:	



# I.V. CODING SHEET

Subject ID: \_\_\_\_\_

Rater: \_\_\_\_\_

**DEMOGRAPHICS**

**Gender of offender**      *Female*                      *Male*

**Age of offender**                     

**Race of offender**                     

**VICTIM/OFFENSE**

**Exact relationship to victim**     

FED FORM \_\_\_\_\_

**Number of victims**                     

**Gender of victim**                      *Female*                      *Male*

**Mode of violence:**                      *Reactive*                      *Proactive*                      *Mixed*

**Relationship:**      *Friend*                      *Girl/boyfriend*                      *Family member*  
                                  *Stranger*                      *Acquaintance*                      *Rival*

**ABUSE/ATTACHMENT**

**Age at first interruption of family structure**     

**Number of previous living arrangements**     

FED FORM \_\_\_\_\_

**Positive Parental Support or Nurturance**

*Yes*                      *No*                      *Not Clear*

**Parental Control and Accountability for Juvenile**

*Yes*                      *No*                      *Not Clear*

**Hx of attachment problems early childhood**

*Yes*                      *No*                      *Not Clear*

**History of abuse**                      *Yes*                      *No*

**Type of abuse**                      *Physical*                      *Sexual*

*Emotional*                      *Neglect*

**Prior History of DSS Services**                      *Yes*                      *No*

**Witnessed domestic violence**                      *Yes*                      *No*

**Antisocial role modeling**                      *Yes*                      *No*

# I.V. CODING SHEET

*FED FORM*

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**Type of service recommended**      *Inpatient*      *IRTP*      *Residential*

*Case management*

**Placement recommendation**      *Secure Residential*      *Day reporting with clinical services*

*DMH*

**Treatment needs:**

*Anger control*

*Substance abuse*

*Mental health*

*Sex offender (cog)*

*Sex offender (recondition)*

*Social skill*

*Violence relapse prevention*

*Family therapy*

*Dynamic psychotherapy for trauma/loss*

*Behavioral management*

*Other: \_\_\_\_\_*

**Number of prior psychiatric hospitalizations**

Table 1

*Descriptive Statistics for Females (N=50) and Males (N=50)*

Variables	Females			Males		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Age	15.82	1.19	14 – 19	16.34	1.24	13 - 19
PCL:YV total score	17.97	5.18	6.30 – 30	17.68	6.15	8 – 35
Interpersonal features	3.15	1.97	0 – 8	2.82	2.17	0 – 8
Affective features	4.00	2.03	0 – 8	4.19	2.19	0 – 8
Interpersonal/Affective	7.15	3.22	1 – 15	7.01	3.87	0 – 15.50
Lifestyle features	4.64	1.65	0 – 8	4.43	1.58	1.20 – 8
Antisocial features	4.31	1.81	0 – 7	4.74	1.84	1 – 8.50
Lifestyle/Antisocial	8.95	2.80	2 – 14	9.17	2.69	2.20 – 16.50
Total number of treatment needs	4.76	1.87	0 – 9	4.10	1.84	1 – 9
Number of prior psychiatric hospitalizations	.98	1.45	0 – 5	.98	1.77	0 – 7
	N	%	Valid N	N	%	Valid N
Race						
Caucasian	26	52	50	23	46	50
African American	13	26	50	13	26	50
Hispanic	7	14	50	11	22	50
Asian	2	4	50	1	2	50
Multiracial	2	4	50	2	4	50
History of psychiatric hospitalization	21	42	50	17	34	50
Proactive violence <sup>a</sup>	24	58.5	41	34	72.3	47
Non-intimate victim <sup>b</sup>	29	70.7	41	32	68.1	47

<sup>a</sup> Proactive violence: 0 = *purely reactive*, 1 = *any proactive element*. <sup>b</sup> Non-intimate victim: 0 = *intimate victim*, 1 = *non-intimate victim*.

Table 2

*Chi-Square Between Proactive Violence and High/Low Affective/Interpersonal features for Females (N=41) and Males (N=47).*

		Proactive Violence	
		No proactive violence	Proactive violence
High/Low Affective/ Interpersonal Features	Females		
		Low	60 %
		High	23.8%
	Males		
		Low	44.4 %
		High	5%
			95%

*Note.* For females,  $\chi^2(1) = 5.53^*$ . For males,  $\chi^2(1) = 8.93^{**}$ .  
 $*p < .05$ .  $**p < .01$ .

Table 3

Summary of Hierarchical Multiple Regression Analyses Predicting PCL:YV Total Scores for Females (N=41) and Males (N=47)

Variable	Females			Males		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Proactive Element	2.52	1.69	.24	4.93	1.98	.35*
Non-intimate Victim	.97	1.83	.09	1.17	1.90	.09
Step 2						
Proactive Element	2.61	1.53	.25	5.11	1.93	.37*
Non-intimate Victim	1.00	1.65	.09	1.81	1.87	.14
Treatment Needs	.87	.38	.33*	.99	.47	.30*
Psych Hospitalizations	1.04	.56	.27	.42	.50	.12

Note. For females,  $R^2 = .07$  at Step 1 and a significant change occurred at Step 2 -  $\Delta R^2 = .22$ ,  $\Delta F(2, 36) = 5.70^{**}$ . At Step 1 the model was not predicting PCL:YV total score but became significant at Step 2 -  $F(4, 36) = 3.78^*$ . For males,  $R^2 = .15$  at Step 1 and the model was significantly predicting total score -  $F(2, 44) = 3.73^*$ . The change at Step 2 was non-significant -  $\Delta R^2 = .08$ , yet the overall model remained significant -  $F(4, 42) = 3.12^*$ .

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



Table 4

Summary of Hierarchical Multiple Regression Analyses Predicting Affective/Interpersonal Features for Females (N=41) and Males (N=47)

Variable	Females			Males		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Proactive Violence	2.08	1.00	.32*	3.86	1.18	.44**
Non-intimate Victim	1.15	1.08	.16	1.08	1.13	.13
Step 2						
Proactive Violence	2.11	1.02	.32*	3.89	1.18	.44**
Non-intimate Victim	1.16	1.10	.16	1.37	1.14	.16
Total Treatment Needs	.21	.26	.13	.44	.29	.21
Prior Psychiatric Hospitalizations	.27	.37	.11	.09	.31	.04

Note. For females,  $R^2 = .15$  at Step 1 and the variables were predicting Affective/Interpersonal features –  $F(2, 38) = 3.38^*$ . The change at Step 2,  $\Delta R^2 = .04$ , was non-significant and the model no longer predicted Affective/Interpersonal features. For males,  $R^2 = .23$  at Step 1 and the model was significantly predicting total score –  $F(2, 44) = 6.62^{**}$ . The change at Step 2 was non-significant –  $\Delta R^2 = .04$ , yet the overall model remained significant –  $F(4, 42) = 3.93^{**}$ .

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

Table 5

Summary of Hierarchical Multiple Regression Analyses Predicting Behavioral Features for Females (N=41) and Males (N=47)

Variable	Females			Males		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Proactive Violence	.34	.91	.06	-.04	.93	-.01
Non-intimate Victim	-.45	.98	-.08	.50	.90	.09
Step 2						
Proactive Violence	.33	.79	.06	.06	.93	.01
Non-intimate Victim	-.38	.85	-.06	.72	.90	.12
Total Treatment Needs	.60	.20	.44**	.35	.23	.24
Prior Psychiatric Hospitalizations	.47	.29	.23	.23	.24	.15

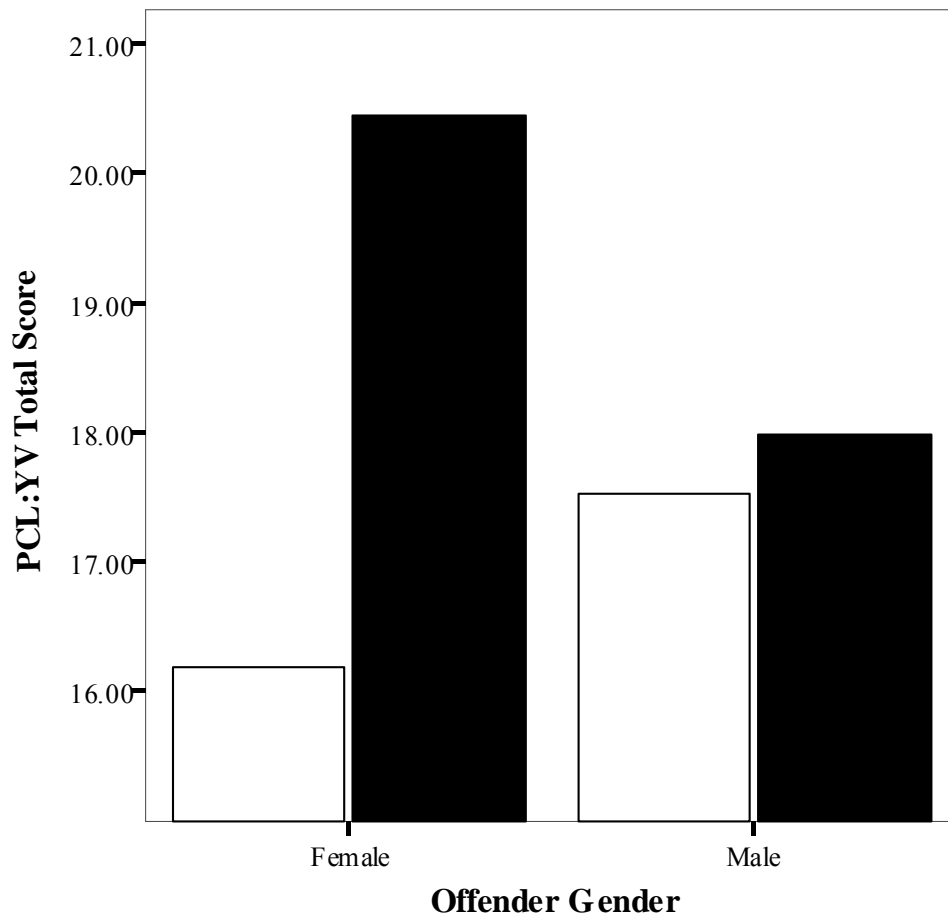
Note. For females,  $R^2 = .01$  at Step 1 and the variables were not predicting Behavioral features. A significant change occurred at Step 2,  $\Delta R^2 = .29$ ,  $\Delta F(2, 36) = 7.57^{**}$ . Overall, the model at Step 2 was predicting Behavioral features –  $F(4, 36) = 3.88^{**}$ . For males,  $R^2 = .01$  at Step 1 and change at Step 2 was non-significant -  $\Delta R^2 = .06$ . The equation failed to significantly predict the Behavioral features at either step.

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

## Figure Captions

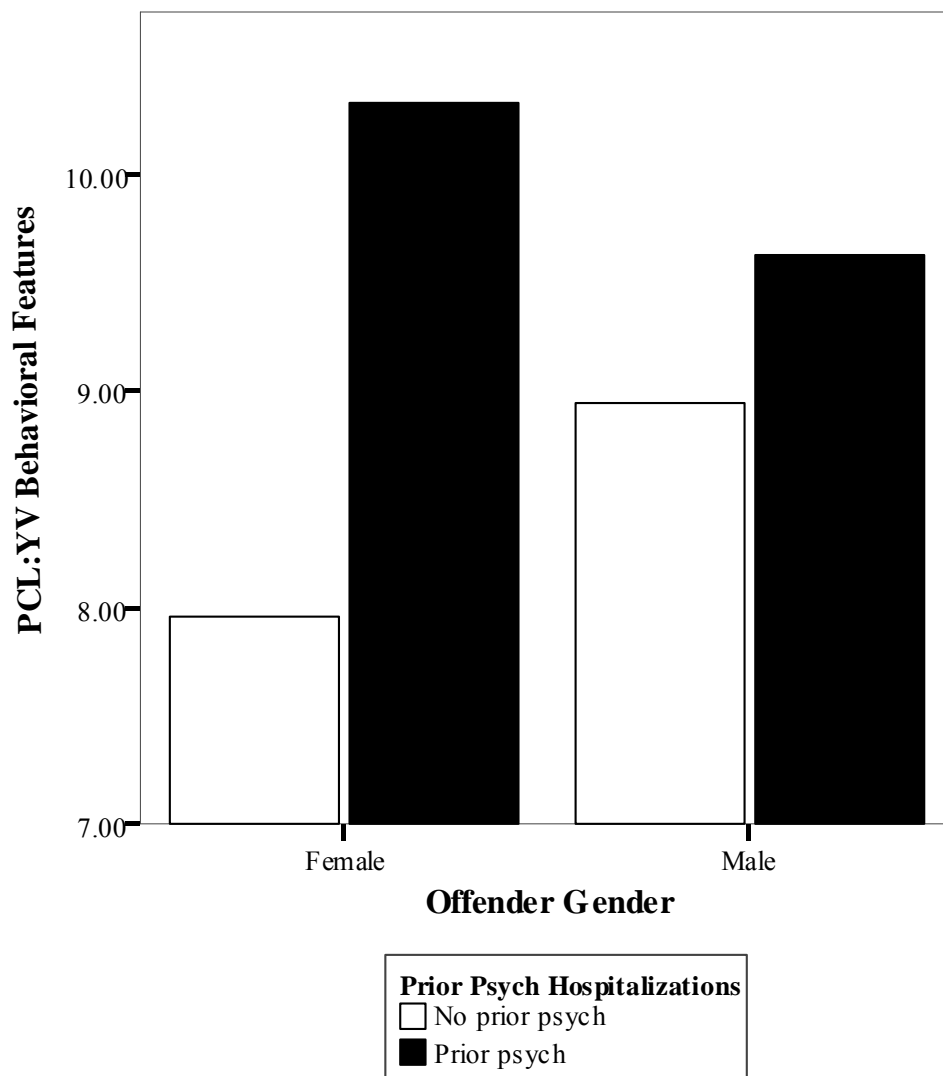
*Figure 1.* Significant mean differences in PCL:YV total score for females with a history of psychiatric hospitalization and those without.

*Figure 2.* Significant mean differences in Behavioral features for females with a history of psychiatric hospitalizations and those without.



**Prior Psych Hospitalizations**  
□ No prior psych  
■ Prior psych

Bars show Means



Bars show Means