TARGETING DIMENSIONS OF PSYCHOPATHY IN AT-RISK YOUTH: ASSESSMENT AND UTILITY OF A FOCUSED COGNITIVE BEHAVIORAL THERAPY PROGRAM

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Individuals presenting with high levels of psychopathy demonstrate chronic and severe antisocial behavior and poor treatment outcomes in response to generalized rehabilitative programs. Recent research has examined the relationship between delinquency in child/adolescent populations and subsequent psychopathy. Focusing on community based/referred population of at-risk youth, this study developed and examined the effectiveness of an 18-session, psychopathy-focused, group CBT treatment program. The study incorporated treatment (n = 34) and usual-care comparison (n = 30) groups and a brief follow up period. Treatment outcomes examined measures of psychopathy, anger, impulsivity, motivation for treatment, self-reported problems, and indices of behavior.

The treatment program demonstrated reductions in psychopathy on the Interpersonal (d = .55) and Affective facets (d = .24) of the PCL:YV. It also reduced overall impulsivity and improved anger suppression and treatment motivation, particularly among youth presenting with higher levels (relative to this study) of psychopathy. As a result of treatment, decreased incidents with the juvenile justice system were also observed, both during the treatment period and at six weeks follow-up. This study provides an initial empirical foundation for the ongoing development of targeted interventions for youth demonstrating psychopathic traits.

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CHAPTER 1

INTRODUCTION

The United States Surgeon General (Satcher, 2001) has identified juvenile delinquency and youth violence as a public-health issue in need of research to guide the development and implementation of prevention-oriented intervention efforts. To date, research has focused primarily on the identification of causal factors and clinical correlates of juvenile delinquency. One line of research has identified the construct of psychopathy as an important, albeit controversial, construct for the clinical evaluation and understanding of juvenile antisocial behavior. As a personality syndrome the construct of psychopathy has historically been reserved in its application to adult antisocial characteristics. However, over the last decade a downward extension of the construct to juvenile populations has occurred.

Developmental pathways of delinquency, and most certainly not psychopathy, in childhood and adolescence are not firmly established (Edens, Skeem, Cruise, & Kaufmann, 2001). However, available data (Forth & Burke, 1998; Forth & Mailloux, 2000; Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2003) suggest patterns of offending associated with dimensions of psychopathy beginning during early to late adolescence and extending into early adulthood. Recent investigations have determined that without clinical intervention features of adolescent psychopathy are associated with increased levels of conduct problems (Toupin, Mercier, Dery, Cote, & Hodgins, 1995), institutional infractions (Brandt, Kennedy, Patrick, & Curtin, 1997; Hicks, Rogers, & Cashel, 2000), and violent acts (Vitacco, Neumann, Robertson, & Durrant, 2002). Once established in early adulthood the destructive course of psychopathic behavior has been shown to persist into middle-late adulthood (Hemphill, Hare, & Wong, 1998; Salekin, Rogers, & Sewell, 1996; Hare, McPherson, & Forth, 1988). Given such a bleak

developmental trajectory, the identification of at-risk youth and development of targeted treatment interventions should be paramount.

To date, research concerning dimensions of psychopathy in child/adolescent populations has focused on (a) the development of assessment strategies, (b) the identification of causal factors and clinical correlates, and (c) its predictive utility for associated outcomes. While important, these investigations reflect the adult literatures tendency to study the psychopath while neglecting the examination of the responsivity of dimensions of psychopathy to focused therapeutic interventions. Indeed, treatment models targeting the core features of psychopathy, in both adolescent and adult populations, have been virtually ignored. While unfortunate, this situation is understandable in light of clinical lore which promotes psychopathy as a chronic and intractable personality syndrome, which is resistant to intervention.

Often-cited research (Hare, Clark, Grann, & Thornton, 2000; Rice, Harris, & Cormier, 1992; Seto & Barbaree, 1999) evaluating treatment outcomes with adult populations has reported discouraging, if not hopeless outcomes for the psychopath, further perpetuating therapeutic pessimism. Some reports are so bleak as to suggest the simple exposure of known psychopaths to treatment may result in *increased* rates of recidivism and violent behavior (Harris, Rice, & Cormier, 1991). Recent literature reviews have challenged the integrity of these studies due to methodological flaws including an exclusive focus on severe psychopathy in chronically incarcerated men in high security institutional settings. With a shaky empirical foundation and virtually absent treatment/intervention literature, the conclusion that psychopathy is an untreatable syndrome, particularly in adolescent populations, is premature.

The development of a treatment model specific to the core features of psychopathy must be informed by methodologically-sound research concerning risk factors and treatment

outcomes. This introduction begins with a review of correlates and pathways of delinquency. In transitioning from delinquency to juvenile psychopathy the chapter briefly presents modern conceptualizations of adult psychopathy. The focus then shifts to juvenile psychopathy, developmental models of psychopathy, and its correlates. The chapter concludes with a discussion of treatment and motivational issues as they relate to the amenability of core features of psychopathy to treatment.

Juvenile Delinquency

Correlates of Delinquency

The majority of research on juvenile delinquency and conduct problems has focused on the identification of dispositional and environmental correlates (Frick, 1998a). Dispositional correlates refer to factors specific to individuals that place them at risk for the development of antisocial behavior. Environmental correlates refer to factors external to the individual that interact with dispositional correlates to produce conduct problems.

The majority of research concerning the correlates of delinquent behavior has focused on environmental factors. Of these, the influence of family dysfunction has been most frequently examined (Frick, 1993; Stouthamer-Loeber, & Loeber, 1986). Different domains of family dysfunction which have been examined include parental psychopathology, impaired parental marital relationships, and maladaptive parenting styles. Regarding parental psychopathology, parental depression and substance abuse problems (West & Prinz, 1987) are related to multiple childhood problems including conduct disorder and parental antisocial behavior has been shown to have a more direct relationship with delinquency (Frick, 1994). Parental marital instability has also been related to multiple problem areas including behavioral dysfunction (Amato & Keith,

1991) and deficient parenting (e.g., low parent involvement, poor parental monitoring, and ineffective discipline) plays a prominent role in the development of childhood conduct problems (Stouthamer-Loeber, & Loeber, 1986).

Juvenile delinquency has consistently been shown to be related to other broader environmental correlates including low socioeconomic status and association with delinquent peers. Peeples and Loeber (1994) described impoverished neighborhoods as having highly concentrated rates of juvenile delinquency. These neighborhoods typically have multiple social challenges including: (a) limited access to social services, (b) poverty of community organizations, (c) weakened family structures, (d) availability of firearms, and (e) high involvement in illegal drug use and trafficking. Juveniles with conduct problems also demonstrate social deficits including the tendency to be rejected by prosocial peers (Coie, Dodge, & Kupersmidt, 1990) and develop relationships with other children who also have conduct problems (Elliott, Huizinga, & Ageton, 1985). Socialization with delinquent peers is a robust correlate with different types of behavior problems (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996) including juvenile delinquency (for a review see Dodge, Dishion, & Lansford, 2006**).**

Several internal/individual correlates have been identified as risk factors for antisocial behavior. Reviews of twin/adoption studies (Mason & Frick, 1994; Rutter, Macdonald, & le Couteur, 1990) have concluded that genetic factors account for a significant amount of variance in measures of antisocial and aggressive behavior. Neuropsychological studies suggest alterations in neurochemistry are associated with antisocial predisposition in some adult psychopaths (Blair, 2003). In adolescent populations youth with behavior problems have been shown to have lower levels of serotonin (Kreusi, Rapoport, Hamburger, Hibbs, Potter, et al.,

1990) and epinephrine (Olweus, Mattesson, Schalling, & Low, 1988), and higher levels of testosterone (Olweus, et al., 1988; Scerbo & Kolko, 1994) as compared to their non-problem peers. Additionally, differences in autonomic nervous system functioning including lower levels of skin conductance (Schmidt, Solant, & Bridger, 1985), heart rate (Raine, Venables, & Williams, 1990) and event-related electroencephalographic potentials (Raine, et al., 1990) have also been reported. It should be noted these findings are equivocal, having not been found in all samples of juveniles with behavior problems (Constantino, Grosz, & Saenger, 1993).

A second category of internal correlates identified in childhood conduct problems is deficits in social cognition or social information processing. Problems in social cognitive processing involve the misinterpretation of environmental stimuli and subsequent inappropriate behavioral responses (Crick & Dodge, 1996). Different types of processing deficits have been identified. First, aggressive children demonstrate a hostile attribution bias or a tendency to interpret other children's behavior as malicious or hostile (Dodge & Frame, 1982). Second, juveniles with conduct problems have a propensity to minimize their antisocial behavior (Lochman, 1987). Finally, these juveniles demonstrate a limited ability to identify appropriate or nonaggressive responses to situations in which they are provoked to anger (Dodge & Frame, 1982; Perry, Perry, & Rasmussen, 1986). Additionally DiLiberto, Katz, Beauchamp, and Howells (2002), reported students with a history of aggressive behavior were more likely to express an aggressive intent towards the ambiguous behavior of peers than their non-aggressive counterparts.

A third line of research concerning internal correlates involves responsiveness to rewards and punishments. A reward dominant response style is characterized by an individual's apparent over-concentration on the benefits or gain they may receive from their behavior. This reward

focus is paired with an apparent lack of consideration for the negative consequences or punishment resulting from their egocentric behavioral choices. The reward dominant response style has been shown to be present in juvenile delinquent populations (Daugherty & Quay, 1991; O'Brien, Frick, & Lyman, 1994; Shapiro, Quay, Hogan, & Schwartz, 1988) as well as adult offenders (Lykken, 1957; Newman, Patterson, & Kosson, 1987).

While the research literature concerning the dispositional and environmental correlates of delinquency is informative, correlational models do not explain how the factors result or produce antisocial behavior. A prominent model for explaining how risk factors are related to conduct problems is the cumulative risk model (Loeber, 1990). This multidimensional approach implies that each of the environmental and internal factors have an equivalent and cumulative influence on the development of delinquency. Consequently, as the number of factors present for an individual increases the risk for delinquent behavior rises correspondingly. Limitations of this model include a failure to consider underlying causal factors and that multiple causal pathways to conduct problems may exist (Frick, 1998a).

Developmental Trajectories

Efforts to identify individuals at risk for chronic antisocial behavior have utilized two primary approaches. The first has focused on identifying behavioral trends or trajectories related to serious, violent, and chronic offending (Farrington, Barnes, & Lambert, 1996; Moffitt et al., 1996). Several longitudinal studies utilizing this approach (e.g., Loeber, Farrington, Stouthamer-Loeber, Moffitt, Caspi, & Lynam, 1998; Moffitt & Caspi, 2001; Roberts, Caspi, & Moffitt, 2001) have proposed two distinct behavioral pathways. The first is associated with criminal behavior beginning during adolescence that decreases in early adulthood (i.e., adolescent-limited or late-

onset offenders). The second pathway involves a demonstration of antisocial behavior in childhood which then persists through later developmental stages (i.e., life-course persistent or early-onset offenders; see Moffitt, 1993a; Patterson, Forgatch, Yoeger, & Stoolmiller, 1998).

An example of research supporting the two behavioral pathways was the Cambridge Study of Delinquent Development (Farrington et al., 1996; West & Farrington, 1973), which followed 411 boys from childhood to age 40. While nearly 40% of these males were convicted of a criminal offense by age 32 (Farrington, 1992), just 6% of the sample were responsible for over half of officially reported crime (Farrington & West, 1993). As compared to the other 94% of the sample, these offenders evidenced criminal behavior at an earlier age and committed more diverse, frequent, and severe offenses over longer periods of time.

While the demographic analysis of delinquent/criminal behavior has identified different pathways regarding the onset of juvenile delinquency, this approach does not address underlying psychological or causal processes. Efforts to develop conceptual frameworks (Frick, 1998b; Lynam, 1996; Skilling, Harris, Rice, & Quinsey, 2002) have sought to identify characteristics of temperament or personality that are associated with more severe antisocial behavior. This approach has been influenced by research (e.g., Hemphill et al., 1998; Salekin, et al., 1996), using adult populations, that has linked psychopathy to more frequent and violent criminal behavior. Prior to discussing developmental models of psychopathy a brief review of the construct of adult psychopathy will be provided.

Adult Psychopathy

Prior to the 20th century, the discussion of psychopathy occurred primarily at a theoretical level and was without formal criteria for classification. In 1941, Cleckley outlined specific

criteria for the classification of psychopathy. In contrast to earlier conceptualizations, Cleckley's model was psychologically based and was considered as a distinct psychiatric category (Ellard, 1988). The next portion of this chapter reviews the modern theoretical conceptualization and assessment of psychopathy.

Modern Perspectives

Current conceptualizations of psychopathy are predominantly associated with Cleckley's publication, *The Mask of Sanity* (1941) and have been furthered by the work Hare (1995, 2003). Cleckley's model emphasized a hereditary emotional deficit which influences the psychopaths' ability to have emotional experiences necessary for the development of a human conscience (Cleckley, 1941/1976). Cleckley's approach differed from earlier models that identified antisocial motivation as the explanatory factor (Newman, 1988). Cleckley (1976) identified the core features of psychopathy as consisting of intrapersonal, interpersonal, and behavioral characteristics.

Intrapersonally, psychopaths within the Clecklian model demonstrate a deficit in the experience of nervousness and other major emotions, and have a particular loss of insight regarding their attitudes and behavior. Subsequently, psychopaths have a limited ability to learn from their experiences and demonstrate poor judgment in interpersonal relationships.

Interpersonally, the psychopath is pathologically egocentric and presents with superficial interactions and callousness towards others. The psychopaths' relationships are marked by a lack of sincerity and shallow interactions. Behaviorally, the psychopath is likely to engage in inadequately motivated antisocial behavior, lack long term goals, remorse, and guilt.

Cleckley's model of psychopathy focused primarily on the affective and interpersonal characteristics but did not consider criminal behavior as a defining feature. Specifically, Cleckley (1976) suggested psychopathy is associated with frequent antisocial and other undesirable behaviors; however, psychopaths usually avoid serious legal problems. In contrast, Hare's model has a more distinct focus on the criminal behavior of psychopaths.

Hare's (1995, 2003) empirically-driven model, was originally based on efforts to quantify Clecklian criteria (Hare, 1991). Hare (2003) conceptualized psychopathy as consisting of four facets: (a) interpersonal, (b) affective, (c) an impulsive and irresponsible lifestyle, and (d) antisocial behavior. A superficial charm, manipulation, grandiosity, and pathological lying characterize the interpersonal facet. The affective facet is represented by callousness towards others, a lack of remorse or guilt, shallow affect, and failure to take responsibility their actions. The third facet, characterized by impulsivity and irresponsibility, demonstrates a lack of long term goals, a parasitic lifestyle, and an unusual proneness to boredom or need for stimulation. The antisocial facet focuses on criminal behavior starting during adolescence, versatility of criminal behavior, and failure to comply with conditions or sanctions once involved with the legal system. In contrast to Cleckley, Hare and McPherson (1984) paint a more negative picture of psychopath' behavior associated with chronic offending behavior and a significant number of violent crimes.

Hare's Psychopathy Checklists (Psychopathy Checklist- Revised (PCL-R), 1991; and Psychopathy Checklist Revised Second Edition (PCL-R-2), 2003) have strong psychometric properties and have served as the foundation for the majority of empirical research of psychopathy over the last 25 years. Hare (1991) developed the PCL to provide a psychometric tool for the assessment of the clinical conception of psychopathy, exemplified by Cleckley's

(1976) *The Mask of Sanity*. However, a thorough analysis suggests the resulting conceptual models are quite different. Rogers (1995, 2001) outlined the similarities and differences between the two models (see Table 1) and found only 7 of Cleckley's (1976) 16 criteria are considered in the PCL-R, which remain unchanged for the most recent revision. With the majority of Cleckley's criteria absent from Hare's checklist, it is inaccurate to consider the checklists as representative of Clecklian psychopathy. Contrasted with Cleckley's theory, Hare's emphasis on historical information and criminal behavior, results in a dismal perspective concerning the ability to intervene and reduce traits of psychopathy (Salekin, 2002).

Table 1

Comparisons of Cleckley's Formulation of Psychopathy with the PCL/PCL-R

Source	Item Descriptor
Cleckley	Superficial charm and good intelligence
PCL	Glibness/superficial charm
PCL-R, PCL-R-2	Glibness/superficial charm
Cleckley	Untruthfulness and insincerity
PCL	Pathological lying and deception
PCL-R, PCL-R-2	Pathological lying
Cleckley	Lack of remorse or shame
PCL	Lack of remorse or guilt
PCL-R, PCL-R-2	Lack of remorse or guilt
Cleckley	General poverty of major affective reactions
PCL	Lack of affect and emotional depth
PCL-R, PCL-R-2	Shallow affect
Cleckley	Sex life impersonal, trivial and poorly integrated
PCL	Promiscuous sexual relations
PCL-R, PCL-R-2	Promiscuous sexual behavior
Cleckley	Failure to follow any life plan
PCL	Lack of realistic, long-term plans
PCL-R, PCL-R-2	Lack of realistic, long-term plans
Cleckley	Pathological egocentricity and incapacity for love
PCL	Egocentricity/grandiose sense of self-worth
PCL-R, PCL-R-2	Grandiose sense of self-worth

(table continues)

Table 1 *(continued).*

Non-overlapping Cleckley Criteria
Absence of delusions/irrational thinking
Absence of nervousness and psychoneurotic manifestation
Unreliability
Inadequately motivated antisocial behavior
Poor judgment/failure to learn by experience
Specific loss of insight
Unresponsiveness in general interpersonal relations
Fantastic and uninviting behavior with drink and sometimes without
Suicide rarely carried out
Non-overlapping Hare Criteria
Previous diagnosis of psychopath[a]
Proneness to boredom/low frustration tolerance[b]
Conning/lack of sincerity[b]
Callous/lack of empathy
Parasitic Lifestyle
Early behavior problems[b]
Short tempered/poor behavioral controls[b]
Impulsivity
Irresponsibility as a parent[b]
Frequent marital problems[b]
Juvenile delinquency
Poor probation or parole risk[b]
Failure to accept responsibility for own actions
Many types of offense[b]
Drug or alcohol abuse not direct cause of antisocial behavior[a]

Note. Table adapted from Rogers (1995, p. 303-304); Cleckley = Cleckley's (1976) criteria; PCL = Psychopathy Checklist; PCL-R = Psychopathy Checklist Revised; PCL-R-2 = Psychopathy Checklist Revised: 2nd edition. [a] Deleted in the PCL-R revision. [b]Modified in PCL-R

Several meta-analytic reviews have reported moderate support for the predictive utility of PCL measures as they relate to rates of general and violent recidivism in incarcerated men (Hemphill, et al., 1998; Salekin et al., 1996). Hare (2003) reviewed an extensive literature supporting the utility of the PCL-R in predicting recidivism in adult offenders, forensic psychiatric patients, intimate partner violence, sex offenders, and civil psychiatric inpatients. While extensive research has been conducted concerning the predictive utility of psychopathy, little progress has been made towards the development of explanatory models for the relationship

between psychopathy and these variables. Additionally, Hare's focus on antisocial behavior has been criticized as falsely inflating his measures ability to predict future violent behavior in less severe populations (Farrington, 2005). The majority of research with the PCL measures has focused on chronic and severe offenders. Limited research has been conducted with less severe criminal and normal populations.

Juvenile Psychopathy

Several authors have suggested the traits and behaviors associated with adult psychopathy are manifest in childhood and persist throughout the lifespan (Frick & Hare, 2001; Lahey, Hart, & Pliszka, 1993; Lynam, 1996; Moffit, 1993a; Robins, 1966, 1978). Recent efforts have sought to examine the validity of the construct of psychopathy in youth (Forth & Burke, 1998; Frick, 1998b; Frick, O'Brien, Wootton, & McBurnett, 1994; Lynam, 1996). Forth, Kosson, and Hare (2003) suggest these efforts are due to (a) a strong relationship between psychopathy and adult criminal behavior, (b) an apparent lack of responsiveness of adult psychopaths to treatment, and (c) a need to distinguish different types of juvenile offenders. Other authors (Frick, 2002; Forth et al., 2003; Lynam, 1998) have suggested researching dimensions of psychopathy in juvenile populations will result in the development of appropriate interventions to lessen the persistence of antisocial behavior. Despite the potential benefits, ongoing debate (for a review see Petrila & Skeem, 2003) centers on fundamental questions concerning the validity of the construct of psychopathy in youthful populations and whether the construct *should* be applied to youth.

Juvenile Psychopathy: Validity and Debate

Critics argue issues concerning personality development have not been adequately addressed in the juvenile psychopathy research. Hart, Watt, and Vincent (2002) questioned the stability of personality traits during adolescence. If stable personality features are not evident in adolescence then juvenile personality syndromes or disorders, by definition, cannot be valid. Seagrave and Grisso (2002) outlined concerns that transient behaviors and attitudes across domains of normative adolescent development may resemble, and be mistaken for traditional features of psychopathy (see Table 2).

Proponents of this vein of research (Frick 2002; Lynam, 2002) make counter arguments, drawing on general findings from research on general personality functioning and developmental psychopathology. Concerning the argument that personality traits are unstable during adolescence, Block (1993) provided evidence that personality traits are relatively stable from adolescence into adulthood. Similarly, Roberts and DelVecchio (2000) and Lynam (2002) argue that while adolescent personality may be variable, the stability of personality traits across the developmental stage of adolescence is not dissimilar from the stability of personality traits from early adulthood to mid-adulthood. In response to the argument that normative developmental processes during adolescence may mimic the features of psychopathy, Frick (2002) argued that psychopathy is no different from any other psychological construct, in that normal and pathological processes may share similarities in presentation.

Recent special issues of *Behavioral Sciences and the Law* (2003, 2004) and the *Journal of Abnormal Child Psychology* (2005), outline concerns regarding the assessment of psychopathy and its application to child/adolescent populations. While significant advances have been made, major concerns remain regarding the ability to differentiate psychopathy from normal adolescent

Table 2

Developmental Issues Related to the Interpersonal and Affective and Unstable/Antisocial Features of Psychopathy

	Developmental Issues			
Interpersonal/ Affective Features	Cognitive	Social	Moral	Biological
Glibness/ Superficial Charm		Identity (Trying on personalities), peer influences		
Grandiosity	Egocentricity	Identity, autonomy		
Pathological lying		Autonomy (oppositionality), peer influences		
Conning/Manipulative	Egocentricity, sensation-seeking	Peer influences		
Lack of remorse or guilt	Egocentricity, present-oriented social perspective	Peer influences		
Shallow Affect	Egocentricity family influences	Identity, peer influences,		Mood swings
Callous/lack of empathy	Egocentricity, social perspective		Immature morals (rewards/punishments)	
Failure to accept responsibility for own actions	Egocentricity, social perspective		Immature morals (rewards/punishments)	

(table continues)

Table 2 *(continued).*

Unstable & Antisocial Lifestyle Features	Developmental Issues			
	Cognitive	Social	Moral	Biological
Need for stimulation & proneness to boredom	Risk-taking, sensation-seeking	Peer Influences		
Poor anger control		Identity, peer influences, family influences		Mood swings
Lacks goals	Hypothetical thinking, abstraction, present-oriented	Peer influences		
Impulsivity	Hypothetical thinking, risk-taking, sensation-seeking perceived invulnerability	Peer influences		
Irresponsibility	Egocentricity, risk-taking, sensation-seeking, perceived invulnerability			
Juvenile delinquency		Peer influences, family influences	Peer influences, family influences	
Serious violations of conditional release	Hypothetical thinking multidimensional, risk-taking, sensation-seeking present-oriented, perceived invulnerability	Peer influences, family influences,		

Note. Table adapted from Seagrave and Grisso (2002).

personality development (Seagrave & Grisso, 2002; Farrington, 2005), establish the stability of psychopathic personality traits from adolescence into adulthood (Edens et al., 2001; Hart et al., 2002; Seagrave & Grisso, 2002), generalize finding for support of developmental models, and it's application to female (Edens, Campbell, & Weir, 2007; Nichols & Petrila, 2005) and ethnic minority populations (Edens et al., 2007; Edens, Petrila, & Buffington-Vollum, 2001; Hicks, Rogers, & Cashel, 2000).

Perhaps the most important argument against juvenile psychopathy research concerns the consequences of applying the pejorative label of psychopath to a specific juvenile in criminal justice settings (Edens et al., 2001). Juvenile psychopathy researchers (e.g., Andershed, Kerr, & Stattin, 2001; Forth & Mailloux, 2000; Frick, 2002; Lynam, 2002) lean on the hope of identifying an important subgroup of adolescents for early intervention as justification for their efforts in this domain. Critics (Edens et al., 2001; Zinger & Forth, 1998) suggest measures of juvenile psychopathy are apt to be used in the juvenile justice system to exclude juveniles from treatment due to poor reported outcomes in adult populations (Ogloff, et al., 1990; O'Neill, Lidz, & Heilbrun, 2003; Rice, Harris, & Cormier, 1992).

Moreover, Seagrave and Grisso (2002) outline the shortcomings of measures of juvenile psychopathy and assert that significant research needs establish psychopathy as a reliable and valid construct in child and adolescent populations. In addition to age, noticeably absent from the research literature are studies demonstrating the validity of psychopathy across gender and ethnic groups as well. To date only six studies using the PCL:YV have included adolescent females (for a review see Forth et al., 2003). Sample sizes in these studies have been small, limiting separate analyses by gender. Authors have also examined ethnic differences using the PCL:YV. The normative sample (Forth et al., 2003) identified that African American males had higher scores

the European American males. Despite the lack of substantive research literature regarding females and potential ethnic differences concerning levels of psychopathy, the PCL:YV manual states, "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). However, a substantive research literature is not available to support similarities in the manifestation of psychopathy between genders or the equivalency of psychopathy scores, across ethnicity. Subsequently, juvenile psychopathy researchers appropriately qualify the measurement of psychopathy with terms such as psychopathic-like traits, dimensions, or features of psychopathy. A similar approach should also be taken concerning the treatability of psychopathic traits in juveniles. Recent research (Salekin, 2002; Salekin, Rogers, & Machin, 2001; Skeem, Monahan, & Mulvey, 2002) suggests results for treatment outcomes are more positive than historically perceived. These studies, while needing further support, indicate a lack of support for therapeutic pessimism concerning the treatability of psychopathic traits in juvenile populations.

Developmental Correlates of Psychopathy

As assessment strategies and developmental models of juvenile psychopathy have evolved researchers have tried to identify developmental correlates specific to psychopathy. The identification of these factors will provide critical information to inform etiological models of psychopathic behavior. A limited number of studies (for a review, see Forth et al., 2003) have examined the developmental correlates of psychopathy. All of these studies utilized retrospective research designs and focused predominantly on family background variables (e.g., SES, parent characteristics, and abuse and neglect).

An early study (Forth & Burke, 1998) investigated the relationship between several family factors and psychopathy in juvenile community and offender populations. An overall

score reflected family background problems based on child abuse (physical, sexual and emotional abuse, neglect), parental (marital discord, antisocial parents, alcohol history), and family characteristics (lack of supervision, inconsistent discipline, separation from parents during childhood). A poor family background was associated with overall psychopathy scores only in the community population. In the offender population family background was only correlated with PCL: YV Factor 2 (i.e., impulsivity, irresponsibility, and antisocial lifestyle) scores on the PCL: YV.

More focused investigations have evaluated the relationship between specific family background variables (e.g., history of abuse and neglect) and juvenile psychopathy. O'Neill et al. (2003) found the severity of childhood abuse/neglect to be predictive of psychopathic characteristics in juveniles. This finding is consistent with other studies (Marshall & Cooke, 1999; Porter, 1996; Robins, 1966; Weiler & Widom, 1996). In contrast, Gretton, Hare, and Catchpole (2004) did not find a significant relationship between these two variables in a population of adolescent offenders. The operationalization of family variables has varied widely across these studies. While intuitively related, the relationship between physical abuse/neglect and juvenile psychopathy has yet to be empirically established.

Regarding familial correlates, researchers have evaluated the relationship between level of parental involvement and psychopathy. Gretton et al. (2004) found psychopathic offenders were separated from their biological parents at an earlier age than their nonpsychopathic counterparts. Laroche and Toupin (1996; as cited in Forth & Burke, 1998) also evaluated the relationship between parental characteristics, parent-child relationships, and psychopathy using a sample of adolescent male offenders. Youth identified as having high levels of psychopathic

traits were less likely to be supervised closely by their parents or to participate in family activities, as compared to other delinquents.

Other family of origin variables including: (a) parental deviance and drug use, (b) parental psychopathy, and (c) socioeconomic status have been evaluated. Watt, Ma, Lewis, Willoughby, and O'Shaughnessy (1997) reported a positive relationship between juvenile psychopathy and biological parent antisocial behavior. They also found a positive relationship between psychopathy and paternal deviance with maternal and paternal criminality more strongly related with Factor 2 scores than Factor 1 PCL: YV scores. In a related area, severity of parental drug use and dependence has been positively correlated with juvenile psychopathy (Christian, Frick, Hill, Tyler, & Frazier, 1997; Lahey, Loeber, Hart, Frick, Applegate, Zhang, Green, & Russo, 1995; O'Neill et al., 2003). Two studies (Rowe, 2002; & Ridenour, Marchant, & Dean, 2001) reported a positive relationship between psychopathy and socioeconomic status; however this finding was not consistent with Stafford and Cornell (2003).

In summary, several family background variables have been associated with psychopathy. The strongest familial correlates include parental deviance, parental psychopathy, and level of parental involvement. Results relating to juveniles with psychopathic traits and their experience of parental physical abuse and neglect have been equivocal. However, variations in research methodology and the operationalization of familial background variables may account for the discrepancy in results. While developmental correlates are important, by definition they cannot address causal factors concerning the etiology of juvenile psychopathy. It is only when developmental correlates are tested within the context of theoretical models that progress can be made in validating causal pathways to psychopathy.

Developmental Models of Psychopathy

Very little is currently known regarding the etiology of psychopathy. Salekin's (2002) meta-analysis reviews twelve theoretical models for the development of psychopathic traits. For the purpose of this study, Lynam's (2002) model of psychopathic constraint and Frick's (1998a) temperamental pathway model will be reviewed. Both models have developed methods for the assessment of psychopathic traits in juvenile populations and have been subjected to systematic research programs. This section of the introduction briefly introduces and reviews the research literature for each model.

Psychopathic Constraint

Lynam (1996) proposed that juveniles with conduct problems and hyperactivity-impulsivity-attention problems (HIA-CP) are most likely to demonstrate the core features of psychopathy in adulthood. This theoretical model referenced Tellegen's (1985) concept of a higher order personality factor of constraint. Lynam proposed that the features of psychopathy are associated with a specific deficit in psychopathic constraint. This deficit limits the integration of environmental cues and interferes with subsequent modulation of goal-oriented behavior. It is because of this deficit that individual children develop hyperactivity, impulsivity, and attention (HIA) problems. Impaired psychopathic constraint results in socialization deficits such as difficulty in monitoring the environment which reduces the ability to experience empathy. As the child develops and is able to engage in more complex goal directed behavior he or she experiences increased frustration with parents and develops conduct problems (CP). This model is also partially informed by research with adult psychopaths concerning deficits in the ability to inhibit goal-directed behavior as the result of problems in attention (Newman & Wallace, 1993).

Hyperactivity, Impulsivity, Attention, and Conduct Problems

Several studies have utilized diverse research designs including longitudinal, retrospective, and family-studies methods have supported a significant relationship between HIA and CP. Longitudinal studies (Ackerman, Dykman, & Peters, 1977; Farrington, Loeber, & Van Kammen, 1990; Hinshaw, 1994; Lilienfeld & Waldman, 1990; Loeber, Brinthaupt, & Green, 1990; Robins, 1978) have shown HIA-CP to be predictive of chronic and severe antisocial behavior in adulthood. Prior to the development of Lynam's (1996) psychopathic constraint model, Loeber and colleagues (1990) evaluated the relationship between childhood conduct problems, hyperactivity, and impulsivity using four comparison groups: (a) Hyperactivity, impulsivity, and conduct problems (HI-CP), (b) impulsivity and conduct problems (I-CP), (c) hyperactivity and conduct problems (H-CP), (d) only conduct problems (CP). Loeber and colleagues also reported juveniles in the HI-CP group had more contacts with police, were more likely to commit multiple offenses, and had higher levels of self-reported delinquency, aggression, and theft, than students in the other comparison groups.

Farrington et al. (1990) demonstrated a link between childhood and adult HI-CP using a data set from adult men who had been studied extensively during their childhood. HI-CP offenders had higher percentages of juvenile and adult convictions (46% and 32%) than CP-Only (13% and 14%), and HI-Only (35% and 25%) respectively. Using a similar research design, Moffit (1990) observed that the presence of HI-CP by the age of 13 was associated with lower IQ, SES, reading achievement, verbal ability, and memory, in comparison to HI-only, CP-only, and controls.

Additional evidence suggests a significant relationship between genetics and hyperactivity, impulsivity, attention problems and conduct problems. Lahey, Schaughency, and

Hynd (1987) compared the psychiatric history of the parents of probands using the previously described comparison-group design. Fathers of HI-CP children demonstrated more antisocial behavior including higher levels of physical fighting, arrest, conviction, and imprisonment. Interestingly, 50% of the fathers of HI-CP children were imprisoned by the time the average HI-CP child reached 9 years old. In contrast, fathers of the CP-only group (8%) and HI only (4%) had much lower rates of incarceration and later ages of onset (i.e., 13 years-old).

In summary, this literature suggests a strong relationship between HIA-CP and adult antisocial behavior. Children with HIA-CP demonstrate an earlier onset of CP and engage in chronic and severe antisocial behavior that occurs across multiple situations and contexts. In the current diagnostic nomenclature, children with HIA-CP are likely to exhibit criteria associated with conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder. However, Lynam's model suggests juveniles who evince both HIA and CP, represent a distinct subtype reflecting the early characteristics of adult psychopathy.

HIA-CP and Psychopathy

The research presented up to this point presents an indirect link between Lynam's conceptualization of HIA-CP and psychopathy in its examination of frequent, severe, and diverse types of antisocial behavior. Several studies suggest that children with HIA have the following characteristics similar to adult psychopaths: (a) deficiencies in their ability to learn from negative punishment cues (Freeman, 1978 as cited by Lynam, 1996), (b) biological characteristics (Satterfield, Satterfield, & Cantwell, 1979), and (c) response modulation (Daugherty & Quay, 1991; Tremblay, 1992). While making a strong argument, prospective research is necessary to establish a direct relationship between the two constructs.

In an early longitudinal study, Lynam (1997) evaluated the relationship between psychopathy and impulsivity with a population of at-risk male youth. Using regression analysis Lynam found psychopathy scores added predictive utility beyond other well-known predictors of delinquency (i.e., SES, IQ, cognitive impulsivity, behavioral impulsivity, aggressive behavior, and early age of onset). Juveniles scoring high on psychopathy also engaged in more types, and more serious types of crimes, than those scoring lower on psychopathy. Lynam also organized the sample into subtypes based on the stability and severity of delinquent behavior: (a) Stable Non-delinquent boys (SN), (b) Stable, Seriously-delinquent boys (SS), and (c) All-Other delinquents (AO). The SS group had higher scores on PCL: YV Factor and Total scores than AO and SN boys.

To further support his developmental model Lynam (1998) has used data from the Pittsburgh Youth Study, a longitudinal survey with high-risk youth, in efforts to identify of the causes and correlates of early forms of delinquency. Among the variables included in this study are impulsivity and psychopathy. Loeber, Burke, and Lahey (2002) summarize the first 14 years of the study stating, "Children who scored high on [psychopathy], like their psychopathic adult counterparts, were the most frequent, severe, aggressive, and temporally stable delinquent offenders (p. 287)." Evidence for the convergent validity of HIA-CP and psychopathy was found as juveniles scoring high on psychopathy were found to also score higher on multiple measures of impulsivity.

An important finding of Lynam's work is the construct of psychopathy has demonstrated incremental validity in the prediction of serious and chronic antisocial behavior beyond previously identified predictive factors. A strength of Lynam's model lies in its ability to quantify juvenile psychopathy and to test the model empirically. While Lynam has demonstrated

similarities between adult and juvenile psychopathy, especially in the behavioral dimension, his model has not demonstrated an empirical relationship between HIA-CP and other characteristics of psychopathy (e.g., interpersonal and affective features). Specifically, adult psychopathy is characterized by affective and interpersonal deficits which Hare (1998a) asserts are a necessary component for the classification of psychopathy.

Affective Deficits and Psychopathy

Frick (1998a) presented a model of psychopathy in which a child with a temperamental style, characterized by callous-unemotional (CU) traits and low behavioral inhibition, becomes difficult to socialize. As the child develops and CU traits become more prominent, the child increasingly rejects parental and societal norms and violates the rights of others. Reporting on data from multiple samples of juveniles assessed with the PCL: YV, Forth et al. (2003) have also identified affective deficits as a central component in the assessment of psychopathy. Affective deficits have consistently been associated with adult psychopathy (Hare, 1998a; Hart & Hare, 1997; Lykken, 1995). Adult psychopaths have been shown to engage in more instrumental antisocial behavior (Cornell, Warren, Hawk, Stafford, Oram, & Pine, 1996; Woodworth & Porter, 2002), show deficits in response to punishment cues (Newman et al., 1987), and demonstrate heightened reactivity to threatening environmental stimuli (Levenston, Patrick, Bradley, & Lang, 2000).

Frick and his colleagues (for a review see Frick & Morris, 2004) have conducted programmatic research to examine the validity and utility of CU traits for the identification of juveniles who engage in chronic and severe antisocial behavior. Research with children and adolescents has identified this subtype in samples of forensic and clinic referred youth (for

reviews, see Frick, Bodin, & Barry, 2000; and Frick & Morris, 2004). CU traits have been associated with severe conduct problems and aggression in populations of clinical and delinquent youth (Barry, Frick, DeShazo, McCoy, Ellis, & Loney, 2000; Caputo, Frick, & Brodsky, 1999; Christian et al., 1997; Frick, Cornell, Bodin, Dane, Barry & Loney, 2003; Loeber et al., 2002; Vitacco, Rogers, & Neumann, 2003). Frick et al. (2003) also reported high levels of callous unemotional traits were associated with increased levels of antisocial behavior in a non-referred community population.

Further evidence for Frick's (1998a) model has been found in the examination of CU traits and other constructs related to the affective deficits associated with psychopathy. Youth with CU traits tend to experience less anxiety about committing deviant behavior (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Pardini, Lochman, & Frick, 2003) and show a reward dominant pattern of responding (Frick et al., 2003). Additionally, a high level of CU traits has been associated with a decreased awareness and responsivity to punishment cues (Barry et al., 2000; Fisher & Blair, 1998; Frick et al., 2003; O'Brien & Frick, 1996).

Other key components of affective deficits associated with psychopathy include a lack of empathy and remorse. Youth with CU traits have been shown to have lower levels of empathy and moral reasoning ability (Blair, 1999; Fisher & Blair, 1998; Pardini, Lochman, & Frick, 2003). The influence of CU traits also appears to influence their ability to perceive emotionally-valenced environmental stimuli. Juveniles with CU traits have difficulty interpreting the emotions of others, specifically facial and verbal expressions of sadness (Blair, 1999; Blair, Colledge, Murray, & Mitchell, 2001; Stevens, Charman, & Blair, 2001). High levels of CU traits have also been associated with a decreased reactivity to negative-emotion words in a lexical

decision task (Loney, Frick, Clements, Ellis, & Kerlin, 2003). This finding has also been replicated with non-referred youth (Frick et al., 2003).

Recent investigations have attempted to determine which constructs are the most useful for the identification of antisocial behavior. Developmental models of psychopathy suggest that high levels of HIA and CU traits are associated with chronic and severe antisocial behavior in juvenile populations. Frick's model (1998a) has not only demonstrated a relationship between CU traits and conduct problems, but also between CU traits and other constructs associated with psychopathy. This temperamental model provides a comprehensive approach that has been successful in incorporating prior etiological research.

Treatment of Psychopathy

This section focuses on the psychological treatment of psychopathy. Specifically, it reviews treatment outcome research for adult and juveniles with psychopathic features. This is followed by a discussion of the Transtheoretical Model of behavior change focusing on the relationship between psychopathy and motivation for treatment.

Adult Psychopathy and Treatment

There is a noticeable strain when the words treatment and psychopathy are presented adjacently and it has been commonplace for authors to suggest dimensions of psychopathy are untreatable or at best resistant to intervention (e.g., Cleckley, 1941; Hare, 1991; McCord & McCord, 1964). Few studies have effectively examined the empirical validity of these claims. Several studies have reported poor treatment outcomes and have contributed to the pessimistic view of the treatment of psychopathy. A critical review of the research methods employed in this

research literature suggests definitive conclusions are premature. Additionally, recent empirical investigations lend support to a perspective of cautious optimism about the future of psychopathy outcomes research.

Therapeutic Pessimism

Based on results reported from the Penetanguishene Study (Harris, Rice, & Cormier, 1991, 1994; Rice et al., 1992), Hare (1993, p. 198) suggested "…therapy may make [psychopaths] worse." Other researchers have made similar claims about psychopathy treatment outcomes. Seto and Barbaree's (1999) work with sex offenders, and Hare et al.'s (2000) report on male inmates, suggests exposing a psychopath to treatment teaches them ways to more effectively manipulate and take advantage of victims. Results from the Saskatoon study (Ogloff, et al., 1990) have also been interpreted to suggest psychopathic forensic inpatients demonstrate less motivation and improvement in response to treatment.

Certain aspects of these studies and subsequent conclusions based on their results are concerning. Psychopathy treatment outcome studies have primarily investigated the most chronic and severe populations. It is unlikely that standard therapeutic intervention will effect significant change in such a population. The type of treatment involved is also of critical importance when considering the treatability of psychopathy. For example, the Penetanguishene Study (Harris, et al., 1991, 1994; Rice et al., 1992) reported negative treatment outcomes based on a treatment program that (a) had limited input from treatment staff, (b) included the administration of drugs and alcohol, and (c) employed forced nudity for periods as long as two weeks. Clearly the qualities of the treatment utilized in this study provides little substance or basis for the evaluation of psychopathy treatment outcomes.

Other studies (Hare et al., 2000; Hobson, Shine, & Russell, 2000; Ogloff et al., 1990) have evaluated therapeutic treatment communities (TC) as the means of intervention. Salekin's (2002) empirical review of psychopathy treatment outcomes found TC's to be the least effective method of treatment. While studies have suggested psychopaths are nonresponsive to traditional treatments, Skeem, Poythress, Edens, Lillienfeld, and Cale (2003) state, "Existing research indicates not whether psychopaths are treatable, but how responsive select groups of psychopaths have been to the treatments we have studied" (p.581).

The critical evaluation of other psychopathy treatment outcomes suggests the statement that psychopaths are resistant to treatment is unwarranted. However, there is considerable research suggesting psychopaths are slow to respond and difficult to manage during treatment. Psychopaths, as compared to other offenders have been shown to: (a) Engage in more disruptive behavior during treatment (Hicks et al., 2000), (b) exit treatment prematurely (Hare et al., 2000; Hill, Rogers, & Bickford, 1996: Mulloy, Smiley, & Mawson, 1996), and (c) recidivate at a higher and faster rate (Hemphill et al., 1998). While all of the studies evaluated the impact of psychopathy on antisocial behavior as a treatment outcome none of the interventions used in these studies directly target the core features of psychopathy. Indeed this approach is akin to offering cognitive behavioral treatment to an individual with schizophrenia, while ignoring the administration of anti-psychotic medication. It is unlikely this type of intervention would demonstrate a positive treatment outcome and is likely to result in decreased levels of functioning.

Cautious Optimism

Concerning the current status of the treatment of psychopathy Hemphill and Hart (2002)

state, "Unfortunately, far more has been written about the subject than is known about it…Although scores of potentially relevant articles have been published in the past 50 years there is no body of scientifically sound research on the treatment of psychopathic offenders (p. 198)." Salekin (2002) conducted the first comprehensive empirical review of first generation research concerning the treatment of psychopathy. Salekin's review identified only 42 studies, spanning 68 years, that were suitable for meta-analysis. While the research designs of many of the studies leave much to be desired (e.g., lack of control groups, small sample size, broad operationalization of treatment outcome variables) a comprehensive synthesis of their results provides important information to guide future research.

Overall, Salekin (2002) reported a moderate mean effect size ($d = 0.62$) suggesting that psychopathic traits and behaviors were moderately and meaningfully responsive to treatment interventions. Interestingly, Salekin reported 20% of the control group (a combination of control groups from 8 studies, N = 287) demonstrated improvement over time without intervention. Along with Salekin's review, Skeem et al. (2002) completed a prospective research study evaluating the treatment of psychopathy in a civil psychiatric population. Contrary to studies reviewed in the previous section, Skeem and colleagues reported the exposure of individuals with high levels of psychopathy to increased doses of treatment was associated with decreased levels of violent behavior. While many of the studies included in Salekin's (2002) review have methodological limitations, and Skeem and colleagues findings are yet to be replicated, it is still conservative to conclude that the pessimism towards the treatability of adult psychopathy is unwarranted.

Juvenile Psychopathy and Treatment

Clinical perspectives concerning the treatment of juvenile psychopathy appear to be far more optimistic than for adult populations. Salekin, Rogers, and Machin (2001) surveyed psychologists' prototypical ratings of a psychopathic youth. A significant majority (72%) reported juveniles presenting with features of psychopathy would be responsive to treatment. Additionally, clinicians observed significant improvement in the treatment of both male and female psychopathic youth. This section will review the literature concerning juvenile psychopathy and treatment outcomes and responsiveness.

Recent studies have examined the relationship between psychopathy and treatment outcomes using several populations ranging from forensic/dually diagnosed inpatients (Rogers, Jackson, Sewell, & Johansen, 2004) and sex offenders (Gretton et al., 2001), to high school community populations (Ridenour, Marchant, & Dean, 2001). Forth and Mailloux (2000) reviewed several unpublished studies and reported that juvenile psychopathy is associated with poor outcomes after participating in standard treatment interventions. In contrast, Rogers et al. (2004) and Spain, Douglas, Poythress, and Epstein (2004) have reported positive, albeit modest, results concerning the treatment of juvenile psychopathy.

Salekin's (2002), previously discussed meta-analysis reported interventions with psychopathic youth under the age of 18 (see Table 3) demonstrated improvement in 96% of the treatment population, as compared to 63% in adult populations. While these numbers suggest remarkable success it should be noted that none of the studies incorporated a control or comparison group. Additionally, all the studies had a small sample size ($n \leq 6$) except for Ingram, Gerard, Quay, and Levison (1970) who reported a sample size of $n = 20$. Ingram et al.'s study is of particular interest as it utilized an action-oriented program designed specifically for

the treatment of youth with psychopathic features. Salekin reported 75% of this sample evidenced a reduction in institutional infractions and 100% demonstrated increased institutional adjustment.

Table 3

Treatment Effectiveness with Juvenile Populations

Author	Orientation	*d*	N	Age	Outcome
Corsini (1958)	Psychodrama	.80	1	15	Less destructive; increased respect for others; fewer behavioral infractions; increased prosocial behavior; improvement in school
Ingram et al. (1970)	Action-Oriented	.55	20	Y	Decreased institutional aggression; improved community adjustment
Korey (1944)	Pharmacotherapy	.37	6	16	Work and school improvement; increased prosocial behavior; improved institutional behavior; better temperament
Noshpitz (1984)	Psychoanalytic	.80	5	14	Increased empathy, guilt and anxiety; decreased aggressive behavior
Savitt (1940)	Psychoanalytic	.80	2	15	Moderate improvement
Schmideberg (1978)	Psychoanalytic	.80	1	16.5	Increase in ability to experience guilt; started work; developing career plans; improved social relationships
Szurek	Psychoanalytic	.80	1	8	Increase concern for others; increased attention span; interest in school work; decreased destructive, hyperactive, and erratic behavior

Note. Table adapted from Salekin (2002).

Several studies since Salekin's review have evaluated the relationship between juvenile psychopathic traits and a variety of treatment outcomes. In the only published study using pre-test and post-test measures of dimensions of psychopathy in youth, Rogers et al. (2004) examined treatment effectiveness with a population of dually-diagnosed juvenile inpatients.

While not including a control or comparison group they found a 25% reduction of psychopathic traits. Catchpole, Gretton, and Hemphill (2003) also reported overall positive treatment outcomes for violent juveniles in response to a cognitive- behavioral treatment program. Using a within-group comparison, juveniles with high psychopathy scores demonstrated the same improvement in treatment outcome as compared to those with low psychopathy scores. In another extensive study, Caldwell and van Rybroek (2001) demonstrated the efficacy of a specially developed treatment program for the reduction of recidivism rates in a population of chronic and serious juvenile offenders. A comparison of reconviction rates were 10% for those treated with a targeted and highly structured behavioral treatment, 20% for those who completed a CBT group, and 70% for the usual-care comparison group. While the sample size was too small to make strong conclusions these findings suggest treatment may significantly reduce the antisocial behavior associated with juveniles with features of psychopathy.

Seagrave and Grisso (2002) outlined concerns regarding the implications of juvenile psychopathy research. Specifically, they suggested the assessment of juveniles with features of psychopathy is more likely to be used as an exclusionary, as opposed to an inclusionary, criterion for involvement in treatment intervention. Studies reviewed in this section have examined the relationship between juvenile psychopathy and treatment outcomes and reported surprisingly positive results. In light of this trend, Rogers et al. (2004) have called for the development and evaluation of interventions that systematically target the reduction of psychopathic characteristics using cognitive-behavioral treatment methods. Unfortunately, advances in juvenile psychopathy assessment are outpacing the development of appropriate interventions for this population. Given the *absence* of research concerning the utility of psychological

interventions targeting the reduction of features of psychopathy, Seagrave and Grisso's concerns appear to be warranted.

Treatment Models

Several meta-analyses of controlled treatment studies have shown positive treatment effects with both adult and juvenile offender populations (Andrews, Bonta, & Hoge, 1990; Lipsey, 1995; Lipsey & Wilson, 1998; Losel, 1995; Salekin, 2002). While the overall effect size tends to be small ($r = 0.10$) success has been demonstrated across a large number of studies. Social-cognitive skills training and cognitive behavioral programs are among the intervention strategies that have been most successful (e.g., Kazdin, 1997; Salekin, 2002). Salekin (2002) reported cognitive-behavioral approaches demonstrated 62% improvement in juvenile samples characterized by psychopathic traits (k = 5, $N = 246$). Based on these reports, and other research findings, Rogers et al. (2004) called for the systematic evaluation of cognitive behavioral treatment strategies designed to target features of psychopathy in appropriate juvenile populations.

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) was initially developed for the treatment of depressed patients. Specifically, this treatment sought to reduce the depressed person's tendency to internalize problems and to take unwarranted responsibility for them (Beck, Rush, Shaw, & Emery, 1979). Psychopaths present with an opposite mindset, tending to externalize problems and blame individuals or circumstances around them. This results in the perspective that they are victims of society and interpersonal relationships. Within a CBT paradigm, Liau, Barriga, and

Gibbs (1998) proposed different types of cognitive distortions are associated with externalizing and internalizing psychopathology (i.e., self-serving, and self-debasing, respectively). The focus of CBT for the treatment of cognitive distortions would focus on reframing the self-serving distortions associated with externalizing behavior problems.

Cognitive Distortions

Gibbs and Potter (1992) identified four categories of self-serving cognitive distortions: (a) Self-Centered, (b) Blaming Others, (c) Minimizing/Mislabeling, and (d) Assuming the Worst. Self-Centered distortions refer to the antisocial youth's tendency to be egocentric, grandiose, and reward focused. These distortions are associated with a lack of empathy towards other people and their needs. The category of Blaming Others refers to the misattribution of blame for one's own (antisocial) actions to other people or situational circumstances (e.g., peer pressure or bad mood). Blaming Others also involves misattributing blame for one's own undesirable circumstances on the behavior or attitudes of other people. Minimizing/Mislabeling distortions refer to the tendency to dismiss the consequences of antisocial behavior as non-harmful or even to view these types of behavior positively. This category also involves the tendency to belittle or dehumanize others. The final category of Assuming the Worst refers to hostile attribution biases, and catastrophization.

Further differentiation of externalizing cognitive distortions was proposed by Liau, et al. (1998). In this model Liau et al. suggested overt and covert antisocial behaviors are associated with different types of self-serving cognitive distortions within the Gibbs and Potter's (1992) categorization. Using a sample of high school students and adjudicated juveniles, Liau et al. (1998) found overt antisocial behaviors (e.g., aggressive behavior) were associated with overt

cognitive distortions (e.g., People need to be roughed up every once in awhile) and covert antisocial behaviors (e.g., stealing) were associated with covert cognitive distortions (e.g., If someone is careless enough to lose a wallet, they deserve to have it stolen).

Pollock and Hashmall (1991) established a cognitive distortions hierarchy based on the identification of 250 statements used by child molesters to rationalize or justify their criminal behavior. These statements were reduced to 21 excuses subsumed under six themes: (a) Mitigating situational factors, (b) sex with children is not wrong, (c) the incident was nonsexual, (d) mitigating psychological factors, (e) blaming the victim, and (f) denial. While specific to sex offenders, many of the themes can be related to other forms of antisocial behavior. Other theorists (Yochelson & Samenow, 1977) have proposed alternative conceptualizations of cognitive distortions associated with antisocial behavior. Specifically, they outlined three types of thinking errors: (a) Criminal Thinking Errors, (b) Automatic Errors of Thinking, and (c) From Idea Through Execution Errors. Criminal Errors refer to patterns of thought concerning the criminal lifestyle. Automatic Errors of Thinking refer to automatic thought processes that occur which are inaccurate or distorted. From Idea Through Execution errors refer to distorted thinking processes that occur immediately before, during, and after committing a criminal act. In general, cognitive distortions typically result in the rationalizing of criminal activities and the minimization their negative impact on victims.

Cognitive Reframing

Denial and cognitive distortions appear to be amenable to treatment (Marshall, 1999) with the utilization of cognitive reframing interventions to alter distorted perceptions (Bandler & Grinder, 1982). Cognitively based treatment programs (Lochman & Wells, 1996; Beirman &

Greenberg, 1996) have been developed for children with conduct disordered behaviors. For example, the Coping Power Program (Lochman, Fitzgerald, & Whidby, 1999) is a unique approach based on Crick and Dodge's (1994) model of social information processing. This program addresses several different components, and is considered unique as it incorporates perspective taking treatment components designed to minimize hostile attribution biases. Another example is the Paths Program (Bierman & Greenberg, 1996) which utilizes cognitive reframing strategies for the recognition of affect and empathy for others and the development of problem solving skills.

In summary, established treatment programs have identified the importance of training juveniles to identify and reframe distorted cognitive processes. Ideally, a cognitive-behavioral treatment program for juvenile populations would include multiple approaches as other CBT programs have also demonstrated utility with juvenile populations.

Stress Inoculation Training

Stress inoculation training (SIT; Meichenbaum, 1986) was originally developed for the cognitive-behavioral treatment of anxiety problems. Novaco (1975) adapted SIT for the management of problematic anger and variants of SIT (Feindler, Marriott, & Iwata, 1984; Schlichter & Horan, 1981) have been adapted for juvenile offender populations. Meichenbaum's (1986) conceptualization of SIT incorporates three phases necessary for the systematic development of skills to manage anger problems: (a) Cognitive Preparation, (b) Skill Acquisition, and (c) Application Practice. During the Cognitive Preparation phase individuals identify situational triggers of anger and related self statements associated with the experience of anger in response to specific situations. The Skill Acquisition phase introduces relaxation

training and identifies alternative self-statements that are helpful in reducing anger. The final phase, Application Practice, incorporates mental imagery and role-playing as means of exposure to anger-provoking situations. Exposure is then paired with relaxation skills and practiced until these alternative mental and physical responses until they become cognitively automatic. Ultimately, this process works towards the replacement of angry thoughts and feelings with a more relaxed and theoretically incompatible response (Tyson, 1998).

SIT for Aggression and Criminality

The efficacy of SIT for the reduction of aggressive behavior with juveniles has been demonstrated in studies using incarcerated (Schlichter & Horan, 1981), delinquent (Feindler, Marriott, & Iwata, 1984), and psychiatric (Feindler, Ecton, & Kingsley, 1986) populations. Reactive aggression has been associated with distorted cognitive processes that justify hostile and aggressive behavior as an appropriate form of retaliation (Holbrook, 1997). Juvenile psychopathy is characterized by both reactive and instrumental forms of aggression (Cornell et al., 1996). SIT should be effective in modulating aggressive reactions which occur in response to situations perceived as hostile or threatening (Sterling & Edelmann, 1988). In addition, Liau et al. (1998) proposed instrumental aggression is a function of externalizing cognitive distortions. These types of distortions may also be amenable to treatment via SIT and cognitive reframing interventions.

Juvenile psychopathy is also characterized by emotional arousal in response to criminal activity (EA-CA; Blackburn, 1978). While related to sensation-seeking in juvenile psychopathy (Vitacco et al., 2002), EA-CA is conceptualized as an affective component associated with instrumental criminal behavior. Having demonstrated utility for the management of affective

responses associated with anger and anxiety, SIT is also likely to be effective in modulating EA-CA and subsequent behaviors.

SIT and other CBT methods have been established as effective interventions for the treatment of variety of clinical problems (for a review see Beck & Fernandez, 1998). CBT strategies have been developed specifically for the treatment of cognitive distortions and anger/aggression problems in juvenile populations. Several traits, cognitive patterns, and behaviors associated with juvenile psychopathy appear amenable to CBT interventions. Other important factors, like motivation for treatment, have also been shown to influence treatment responsiveness and should be considered in the development of interventions for juvenile populations with psychopathic characteristics.

The Transtheoretical Model of Behavior Change (TTM)

The TTM was proposed by Prochaska (1979) to understand how individuals change their problematic behaviors. Given that treatment efficacy has been demonstrated across a range of theoretical orientations and for a broad scope of clinical problems, Prochaska proposed different theoretical models utilized similar processes to effect change. Along with these processes, Prochaska proposed individuals with similar problems are likely to vary in their readiness or willingness to change their problem behavior. For example, youth who experience significant emotional, academic, social, or health problems due to substance abuse and violent behavior may deny having a problem. These adolescents have no intention of making behavioral changes and would likely be in the Precontemplative stage of change. In contrast, other youth may recognize their behavior as problematic and stop using drugs. These adolescents would likely be in the

Action stage of change as they accept that they have a problem and are actively engaged in making behavioral changes.

The five stages of behavior change are: (a) *Precontemplation,* describes a person who has no intention to change the behavior; (b) *Contemplation,* in which one is thinking about making behavioral changes, but has made no commitment to take specific action; (c) *Preparation,* indicates someone who is committed to behavior change, and is deciding how to facilitate the change process; (d) *Action,* involves active efforts to modify behavior, personal experiences, or environmental factors in order to manage problems, and lastly (e) *Maintenance*, describes an individual that has been successful in changing unwanted behavior(s) and is actively utilizing relapse prevention strategies. Movement through these stages has predicted positive treatment outcomes with a variety of behavior problems (for a review see Prochaska, DiClemente, & Norcross, 1992).

One of the strengths of this theoretical model has been its use for the assessment of treatment outcomes. Measures were initially developed for populations struggling with substance addictions, but have been expended to other public health problems, and behaviors (e.g., domestic violence) typically considered resistant to psychological intervention (Levesque, Gelles, & Velicer, 2000; Murphy & Baxter, 1997). The TTM and its corresponding assessment instruments have been successful in predicting treatment dropout. Prochaska and colleagues' (1992) assessment of substance abusing clients' stages and processes of change in a psychotherapy setting was associated with 93% accuracy in predicting who would leave treatment prematurely. Researchers (O'Hare, 1996; Smith, Subich, & Kalodner, 1995) have also found clients who terminate therapy prematurely are more likely to be in the precontemplative stage of change and to utilize fewer processes of change, relative to non-terminating clients.

Application to Offender and Juvenile Populations

Recent efforts have applied the TTM to violent populations, specifically perpetrators of intimate partner violence (IPV; Begun, Murphy, Weinstein, & Shelley, 2003; Eckhardt, Holtzworth-Munroe, & Homack, 2004; Eckhardt, Holtzworth-Munroe, Norlander, Sibley, & Togun, in press; Levesque et al., 2000). Validation studies of stages of change measures modified for use with domestic violence perpetrators have consistently identified the precontemplation stage, combinations of the contemplation and action stages, and the maintenance stage.

The TTM has also been used for the assessment of readiness to change with juvenile populations regarding several public health issues including sexual behavior (e.g., Hulton, 2001). Additionally, the model has been utilized in the treatment of adolescents with tobacco addiction (Price, Yingling, & Dake, 2003), substance abuse problems (Cady, Winters, & Jordan, 1996), and eating disorders (e.g., Colton & Pistrang, 2004). Hemphill and Howell (2000) investigated the factor structure of the TTM in juvenile offenders by administering a measure of the stages of change. Similar to domestic violence perpetrators they found three stages including the precontemplative, action, and maintenance stages. Recently, the TTM has also been applied in the treatment of adolescent sex offenders (O'Reilly, Morrison, Sheerin, Carr, & Alan, 2001).

In summary, the TTM has demonstrated utility for the measurement of treatment progress. The model has been effectively applied to different clinical populations including domestic violence perpetrators. Two studies have demonstrated support for use of the TTM with juvenile offenders; however, no empirical studies have examined the relationship between the TTM and juvenile psychopathy.

Psychopathy and Motivation for Treatment

The TTM provides a framework for the examination of readiness to change and motivation for treatment. Research with adult offenders has demonstrated men who present for treatment in the precontemplation stage are more likely to leave treatment early. People in the precontemplation stage tend to deny or minimize their problems or blame others for their problematic behavior. Hemphill and Hart (2002) proposed particular motivational deficits specific to psychopaths and that an offender must utilize a series of processes in order to change their behavior. Hemphill and Hart's offender specific change processes can be applied within the stages of change (see Table 4).

Hemphill and Hart also shifted the therapeutic pessimism paradigm when they proposed psychopaths may have specific strengths which should be considered in the development of a treatment program. They suggested appealing to an offenders need to feel important or superior, while avoiding interventions that are highly-confrontational and provoke feelings of low-status, will increase therapeutic engagement. Given the psychopaths' attraction to novel situations and activities, interventions should be novel and varied within a treatment module in order to maintain treatment involvement. Additionally, tapping into the offender's interpersonal skills may increase their level of participation. Incorporating these strengths and into the treatment process may have a positive impact on treatment outcomes. No studies have reported concerning the empirical relationship between psychopathy and the TTM.

Overview of the Current Study

Research on adolescent offenders traditionally has produced several divergent conclusions ranging from: (a) CBT treatment is effective with delinquent populations in treating

Table 4

Integration of Hemphill and Hart's (2002) Offender-Specific Change Processes and the Stages of Change

	Stages of Change				
Offender Change Process	Precontemplation	Contemplation	Preparation	Action	Maintenance
Acknowledge problem	x				
Express interest in changing		x			
View problems as psychological		x			
Believe intervention is possible		x			
Recognize personal contribution to problem			x		
Establish positive relationship with therapist			x		
Be willing to accept help				x	
Develop clear treatment goals				x	
Experience guilt and shame regarding problems				x	
Exert effort to maintain changes					x
Strive for autonomy					x
Develop reflection skills for insight into behavior.					x

clinical conditions related to antisocial conduct (e.g., anger management and impulsivity); and (b) psychopathy, including juvenile psychopathy, is not amenable to treatment. More recently authors (e.g., Salekin, 2002) have demonstrated a movement towards cautious optimism concerning the amenability of psychopathic traits in juveniles. To date, no published studies have examined the influence of targeted and systematic CBT treatment for the reduction of psychopathic traits in either adult or juvenile populations. The purpose of this study was the development and examination of the efficacy of a CBT treatment program that systematically targeted psychopathic traits in an *at-risk* juvenile population.

The specific CBT methods utilized by this study included cognitive reframing and restructuring of cognitive distortions associated with juvenile psychopathy and SIT for the modulation of antisocial behavior. Specifically, the study applied these proven treatments for the modulation of aggressive behavior and emotional arousal to criminal activity (EA-CA) associated with juvenile psychopathy. Additionally, Cognitive Reframing and Restructuring have been shown to reduce negative/symptom reinforcing patterns of thinking associated with anxiety, depression, and anger problems. CBT interventions designed specifically for the adjustment of cognitive patterns associated with psychopathy may also yield positive treatment effects. In summary, a methodological strength of the current study was the systematic application of CBT interventions to specific facets of psychopathy. An additional strength of the current proposal was its attention to assessment methods. Psychopathy was assessed by both interviewed-based (PCL: YV) and self-report (APSD and SALE) measures. Few studies have utilized multiple measurement strategies for the assessment of juvenile psychopathy.

Hypotheses

Hypothesis 1: At-risk adolescents should evidence a decrease in features of psychopathy as a result of their successful completion of the CBT program. The CBT program was specifically designed for the treatment of the four facets of juvenile psychopathic traits (Interpersonal, Affective, Behavioral, and Antisocial) as described by Forth et al. (2003).

Hypothesis 2: The CBT program will have a positive effect on anger expression. A primary focuses of the treatment program concerned the modulation of anger and aggressive behavior.

Hypothesis 3: The CBT program will have a positive effect on impulsive behavior. Specifically, the program was designed for the modulation of excitement/physiological arousal associated with conning, manipulative, and criminal behavior (e.g., EA-CA), as well as, reframing cognitive distortions associated with impulsivity.

Hypothesis 4: The fourth hypothesis is the CBT program will have a positive effect on motivation to change problematic behavior. More specifically, students in the CBT treatment program will evidence more progress through the stages of change than the usual care comparison group.

Hypothesis 5: The CBT program will have a positive effect on students' institutional behavior. During the last half of treatment, and 4 weeks post-treatment, students in the CBT program will earn more points, obtain quicker level increases, and receive fewer incident reports than the usual care comparison group.

Hypothesis 6: It is expected that higher levels of psychopathy will be associated with less progress in treatment as demonstrated by lack of improvement on the stages of change.

Hypothesis 7: The CBT program will have a positive impact on the student's ability to employ problem solving skills. At post-testing students in the CBT program will report fewer behavior and relationship problems than the usual-care comparison group.

CHAPTER 2

METHOD

Design

The research protocol received full board review and was approved by the Institutional Review Board (IRB) at the University of North Texas (UNT) on 9/2001 and again on 12/2003. This study employed a multi trial, mixed between/within group comparison design, and utilized a matched random group assignment procedure (Kazdin, 2002) to establish relative comparison group equivalency. Data for comparisons between groups was collected through five separate trials.

Research Setting

Institutional Description

The treatment program was designed to provide a clinical intervention for at-risk adolescents placed in an alternative education environment because of their misconduct. Adolescents are placed under the purview of the juvenile justice system following their expulsion for serious rule violations within a secondary school setting or criminal violations. As mandated by Texas state law, most adolescents expelled from public school must attend an alternative education program, such as the Denton County Juvenile Justice Alternative Education Program (JJAEP), administered by the juvenile justice system. Denton County JJAEP accepts students for both mandatory (defined by the state of Texas statutes) and discretionary placement, as required by an independent school district or juvenile magistrate A collaborative relationship with the Denton County JJAEP (JJAEP) was developed in order to identify and solicit participation from adolescents in the target population. The census of the Denton County JJAEP

fluctuates predictably with the school year with approximately 80 students by mid-fall and 100-150 students in the spring semester.

The Denton County JJAEP was designed to improve the academic, physical, and psychosocial skills of its students. Certified teachers in small classrooms provide academic instruction. Physical education is a venue for promoting physical well-being and instilling discipline and respect for authority. Civilian drill instructors are responsible for the physical education program and assist campus-wide with minimizing disciplinary problems. Psychosocial needs are addressed via Social Skills Counseling that utilizes Boys Town Social Skills Curriculum. This program will be described in greater detail within the Usual-Care Control section.

Participants

The treatment and comparison group samples were each targeted to consist of 32 students. A particular goal was to have an ethnically diverse sample. However, JJAEP demographics are approximately 75% European American, 15% Hispanic American and 10% African American. Given these disparate percentages the objective was to recruit a sample that was at least 25% African American and 25% Hispanic, with the remainder being European American. Another goal was to have an equal representation of gender; however, the vast majority of their students are male (approximately 85%). Over-sampling of female students and youth from ethnic minority populations was required to achieve the goal of a diverse sample.

Measures and Materials

Demographic Information

Several different types of data were retrieved from student records. JJAEP intake records

contain information concerning academic achievement (i.e., The Kaufmann Tests of Educational Achievement) and socio-demographic data including participant age and ethnicity. Participants' school histories, including date of expulsion from public school, date of enrollment at JJAEP, and prior JJAEP enrollments were obtained. Participants' legal history, including number of prior offenses, current juvenile probation status, and juvenile probation history were also recorded.

Psychopathy Measures

Psychopathy Checklist-Youth Version (PCL-YV). The PCL: YV (Forth, Kosson, & Hare, 2003) combines data from a semi-structured interview with file information to rate 20 criteria associated with dimensions of psychopathy in adolescence. The PCL: YV scoring criteria were adapted from the PCL-R (Hare, 1991) with three modifications to reflect the limited life experiences of juveniles as compared to adults. First, the scoring guidelines were adapted to greater reflect involvement with peers, family, and school related situations and relationships. Second, PCL:R items 9 (Parasitic Lifestyle) and 17 (Many-short Marital Relationships) were modified to more accurately reflect adolescent experiences as most adolescents are still dependents and have rarely been involved marital-like relationships. Item 9 was changed to "Parasitic Orientation" and item 17 to "Unstable Interpersonal Relationships." Most juveniles have had less contact with the judicial system than adult offenders. As a result item 18 ("Juvenile Delinquency") was changed to assess serious involvement in criminal behavior. Third, instructions were changed to emphasize the importance of developmental factors and consideration of normative adolescent behavior.

Each item is rated on a three-point scale concerning the degree to which the scoring

criteria appear to be present. The PCL: YV has demonstrated strong Inter-rater reliability for both the total ($\underline{r}s \geq 0.85$) and factor scores ($\underline{r}s \geq .86$ and .91: Brandt, Kennedy, Patrick, & Curtin, 1997) and strong internal consistency (alphas from .82 to .94; Forth & Burke, 1998) using juvenile populations. Evidence of moderate inter-rater reliability is also found at the item level (median $\underline{r} = .69$; Forth & Burke, 1998). Specific PCL: YV cut scores for the classification of psychopathy have yet to be established (Forth et al., 2003). Using the PCL-R-2 with adults, a cut score of ≥ 30 is required for a classification of psychopathy. Applying this cut score, Forth and Burke (1998) reported base rates of juvenile psychopathy for incarcerated (28.3%), probation (12.0%), and community (3.5%) populations.

Antisocial Process Screening Device-Youth Version (APSD). The APSD (Caputo, Frick, & Brodsky, 1999), formerly titled the Psychopathy Screening Device (PSD; Frick, O'Brien, Wootton, & McBurnett, 1994), is a 20-item self-report measure of psychopathic personality features in youth ages 6-13. The APSD was rationally derived and proposed to consist of two factors; Factor 1 (Callous Unemotional Traits; CU) and Factor 2 (Impulsivity-Conduct Problems; I/CP). Recent studies using factor analytic methods of parent/teacher ratings (Frick, Bodin, & Barry, 2000) and youth self-report (Vitacco, Rogers, & Neumann, 2003) propose a three factor structure consisting of Narcissism (NAR), Callous/Unemotional (CU), and Impulsivity (IMP), however subsequent studies have demonstrated low measure reliability. Spain, Douglas, Poythress, and Epstein (2004), studied a sample of adolescent male offenders recruited from a residential treatment program and reported the APSD Total, NAR, and IMP scores were significantly correlated with treatment progress.

The Survey of Attitudes and Life Experiences (SALE). The SALE (Rogers, Vitacco, & Cruise, Sewell, & Neumann, 2002) is an 80-item self-report measure, empirically derived to

screen for the presence of psychopathy in juveniles. SALE items have a 4th grade reading comprehension level and are rated on a four-point Likert scale (1=Agree Completely, 2 = Agree Somewhat, 3 = Disagree Somewhat, and 4 = Disagree Completely). The 24-item Psychopathy Screen (PS-24) has moderate internal consistency of .79 and is an effectively screen for levels of psychopathy, successfully differentiating youthful offenders with mixed/high and low levels of psychopathy (Cohen's *d* = 1.02; Rogers, et al., 2002). Additionally, Rogers and colleagues (2002) evaluated the influence of response styles on SALE scales and reported that utility estimates actually increased when juvenile offenders attempted to use a socially desirable response style.

Measures Related to CBT Treatment

The State-Trait Anger Expression Inventory-2 (STAXI-2). The STAXI-2 (Spielberger, 1999) is a 57-item self-report measure comprised of two scales for the stat-trait experience of anger (STAS) and expression of anger (AX). The STAXI-2 was designed to assess anger in accordance with state–trait personality theory. The STAS is composed of the State Anger Scale (SAS) and Trait Anger Scale (TAS), which have internal reliability coefficients that range from .84 - .93 (Spielberger, 1999). The TAS consists of two subscales, Angry Temperament and Angry Reaction, with alpha coefficients of .85 and .73, respectively (Fuqua, Leonard, Masters, Smith, Campbell, & Fischer, 1991). The theorized independence of state and trait anger has received empirical support as evidenced by a moderately low correlation between the SAS and TAS (*r* = .27; Fuqua et al., 1991). Among college students, high trait anger individuals have been found to experience anger more frequently and more intensely than low trait anger individuals, and to utilize more dysfunctional anger expression strategies and experienced more negative

consequences than low trait anger individuals (Deffenbacher, Oetting, Thwaites, Lynch, Baker, Thacker, et al., 1996). The Anger Expression Scales consists of four subscales: (a) Anger Expression/Out (verbal and physical aggressive behavior directed toward other persons or objects), (b) Anger Expression/In (Inward anger expression, anger suppression), (c) Anger Control/Out (attempts to monitor and prevent the outward expression of anger), and (d) Anger Control/In (active attempts to calm down and reduce angry feelings). STAXI-2 subscales have alpha coefficients ranging from .74 - .93 (Spielberger, 1999).

The Barratt Impulsivity Scale-11 (BIS-11). The BIS-11 (Patton, Stanford, & Barratt, 1995) is a 30-item self-report questionnaire designed to measure three dimensions of impulsiveness: (a) Attentional Impulsiviness measures the ability to focus on the task at hand and maintain cognitive stability or lack of thought insertions and racing thoughts, (b) Motor impulsiveness refers to acting on the spur of the moment and living a consistent life style, and (c) Non-planning impulsiveness references planning and thinking carefully or a present orientation and enjoying challenging mental tasks. These factors, organized into scales, have moderately high internal consistency (i.e., alphas range from .79 to .83). The BIS-11 has recently been used with adolescent populations (e.g., Vitacco, et al., 2002) and was shown to discrimination between participants with high and low levels of psychopathic traits. The relationship between measures and facets of psychopathy is presented in Table 5.

Stages of Change Scale (SOCS). The SOCS (McConnaughy, Prochaska, & Velicer, 1983) is a 32 item self-report measure assesses four of the stages of change: Precontemplation, Contemplation, Action, and Maintenance. The SOCS originally developed for use with psychotherapy clients (McConnaughy et al., 1983; McConnaughy, DiClemente, Prochaska, & Velicer, 1989), and has also been used with a variety of clinical populations (for a review see

O'Hare, 1996; Sullivan & Terris, 2001), and juvenile offenders (Hemphill & Howell, 2000). SOCS scores have also been shown to indicators of treatment completion and treatment success (Prochaska, Norcross, Fowler, & Follick, 1992). The SOCS includes 32 items, each on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) and has a Flesch-Kincaide reading level of 3.6. Seven items measure each stage and summing scores from the Contemplation, Action, and Maintenance scales and subtracting the Precontemplation scale score calculates the Readiness to Change Index score. Reliability was assessed using Cronbach's coefficient alphas for the four scales range from .88 to .89.

Table 5

Measure Subscales for the Assessment of Facets of Psychopathy

	Facets of Psychopathy			
Measure	Interpersonal	Affective	Behavioral	Antisocial
PCL: YV	Facet 1	Facet 2	Facet 3	Facet 4
APSD	Factor 1	Factor 1	Factor 2	Factor 2
STAXI-2		TAS		
				ACO
				AXI
BIS-11			Non-Planning	
			Motor	
			Attentional	

PCL: YV = Psychopathy Checklist: Youth Version; APSD = Antisocial Processes Screening Device, NAR = APSD Narcissism subscale, CU = APSD Callous Unemotional Subscale, IMP = APSD Impulsivity subscale; SALE = Survey of Attitudes and Life Experiences; STAXI-2 = State Trait Anger Expression Inventory – 2, TAS = STAXI-2 Trait Anger Scale, ACO = STAXI-2 Anger Control/Out subscale, AXI = STAXI-2 Anger Expression/In subscale; BIS-11 = Barratt Impulsivity Scales -11.

Outcome Variables

File reviews provided the following types of information for each participant: (a) Institutional point system, (b) incident reports, (c) juvenile detention placements, (d) days absent from school, and (e) arrests and criminal charges received during the study.

Procedure

Informed Consent

Prior to measure administration the UNT IRB approved the consent and assent forms. The consent form (see Appendix A), as required by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research standards, addressed the following six components: (a) The purpose of the study and how long it would last, (b) a description of the study including the procedures to be used, (c) a description of procedures/elements that may result in discomfort or inconvenience, (d) a description of the procedures/elements that were associated with foreseeable risks, (e) benefits to the subjects or others, and (f) the confidentiality of research records. JJAEP intake staff obtained consent for participation in the study. Prior to completing questionnaires, students were required to provide informed assent. A trained graduate student obtained consent in student classrooms. Students who did not provide consent/assent were not included for study.

Selection Criteria

No exclusions were made based on ethnicity or gender. Sampling efforts attempted to achieve adequate representation based on gender ($\geq$ 40% female) and ethnicity ($\geq$ 25% Hispanic Americans and $\geq$ 25% African Americans). The goal of recruiting a female sample that adequately represents ethnic minorities was difficult due limitations in the number of females enrolled at JJAEP at any given time.

Inclusion Criteria

The suitability of participants was determined by standardized inclusion and exclusion

criteria. The following inclusion criteria were utilized

- *A minimum reading level of 5th grade*. Available measures and materials required a minimum reading comprehension level of the 5th grade.
- *Features of psychopathy*. Because of restricted range and possible floor effect, treatment effectiveness cannot be demonstrated in participants with very low levels of psychopathic traits. As operationalized, participants must have received a positive rating (i.e., 1 or 2) on at least three items.
- *Length of placement*. Participant assignment to the program had to be in the JJAEP program for a sufficient amount of time to complete the treatment protocol and follow up assessment.
- *Age*. As required by the UNT Institutional Review Board students were at least 14 years of age to participate in this study.
- *Fluency in English*. Students had the ability to speak English fluently enough to actively participate in and benefit from the treatment protocols and read English well enough to complete research measures.

Exclusion Criteria

The following exclusion criteria were employed:

- Positive diagnosis of schizophrenia, pervasive developmental disorder, mental retardation, or current suicidal ideation.
- Refusal of adolescent to accept the random assignment to treatment condition.
- Students were under the age of 18 at the start of the study.

Power Analysis

Given that no previous studies have targeted CBT interventions of the features of psychopathy, precise effect size estimates were not available. Among at-risk juveniles, effect sizes moderate in magnitude are likely needed to demonstrate reductions in problematic behavior. Therefore, a moderate effect size (Cohen, 1992) was used as the parameter estimate for a power calculation. A total of 32 CBT and 32 usual-care control participants, would achieve a minimum estimated power of .80 (cf. Kraemer & Theimann, 1987).

Sample Attrition

The rate of sample attrition was expected to be small. Historical data indicated that few students (15 of 218 or 6.9%) are expelled from Denton County JJAEP. Treatment group drop-out rates due to dissatisfaction or interest with the treatment protocol were also expected to be minimal as the treatment protocol emphasized the use of treatment techniques and material that would increase participant interest and involvement. The targeted sample size was 64 participants (32 treatment and 32 usual-care control). The study utilized 5 trials for a maximum possible sample size of 80 participants (40 treatment, 40 usual-care control). A 20% attrition rate would still result in the targeted sample size of 64 participants.

Program Evaluation Development

Measures

Problems Worksheet

Participants review a list of potentially problematic behaviors (see Appendix B). The list consists of three general categories of problematic behavior including interpersonal conflict,

substance abuse, and impulsive/risky behaviors. Students select at least three of the listed behaviors they feel cause them problems and rank them in order from the most to the least problematic. After participants rank the problems they used a 4-point Likert scale to identify how problematic they perceive each problem to be. The Likert ratings range from Not Problematic to Frequently Problematic. This worksheet was administered to both treatment and control groups at the pre-test and post-test administrations. The Problems Worksheet has a Flesch-Kincaide reading level of 4.6.

Supplementary Ratings of the Psychopathy Checklist: Youth Version (PCL: YV)

The PCL: YV is routinely used for the assessment of facets of psychopathy in juvenile offender populations. PCL: YV scores are comprised of ratings made on 20 items using a 3-point Likert scale. The utility of the PCL: YV as a measure of treatment outcome has received little attention in the research literature. With a limited range of possible scores and the inclusion of static (i.e., unchanging) factors, the PCL: YV has restricted sensitivity for the assessment of change in levels of psychopathy. Two modifications of the PCL: YV were utilized to address these issues.

First, using Rogers, Salekin, Hill, Sewell, Murdock, and Neumann's (2000) model, PCL: YV scoring criteria were also applied to the subcriteria so as to increase the possible range of psychopathy ratings. Rogers et al. (2000) treated individual standard item ratings on the PCL: SV as scales and subcriteria ratings as items. They reported adequate levels of construct validity and internal consistency with high mean alpha coefficients for both adult (.86) and juvenile (.80) samples. In their study, the expansion of individual items into scales demonstrated the ability to increase the sensitivity or range of scores on the PCL: SV without sacrificing construct validity.

Consistent with Rogers and colleagues, the subcriteria ratings were rated on a 5-point Likert scale (0 = *Absent*, 1 = *More absent than present*, 2 = *Present/Partial*, 3 = *More present than absent*, 4 = *Definitely present*).

Second, treatment change can only be measured with dynamic variables. Static variables (e.g., gender and past crime) are not amenable to change. Increasing the sensitivity of the PCL: YV to changes in psychopathic features was accomplished by eliminating static subcriteria from analyses. Professionals and graduate students (n = 16), familiar with the construct of psychopathy were asked to make ratings of the static or dynamic nature of PCL: YV subcriteria. The ordering of subcriteria were modified so that the first subcriteria for each were presented sequentially, followed by the 2nd subcriterion, etc., in an effort to reduce bias based on preexisting knowledge of PCL: YV items. Ratings were made using a 4-point Likert scale (0 = Not possible to change; 1 = Possible but not likely to change; 2 = Moderately changeable; 3 = Very changeable).

Participant Involvement Form (PIF)

This measure was developed for the evaluation of potential treatment outcomes by providing systematic feedback on individual sessions. The form asks the students to make ratings of their perceived involvement concerning three areas: (a) level of involvement in the therapeutic activity, (b) level of enjoyment or investment in the activity, and (c) level of information learned from each sessions activity (See Appendix C). Additionally, the PIF requests qualitative information concerning what each student thought they learned during each session.

Pilot Testing

This phase focused on the development of specific treatment modules relevant to the problems of students at JJAEP, which are also amenable to interventions related to the features of psychopathy. The pilot phase required four components: (a) Preliminary assessment, (b) focus groups, (c) treatment protocol development, and (d) pilot groups.

Preliminary Assessment

A random sample of 20 JJAEP students was administered the PCL: YV to determine if the site had participants with sufficient levels of psychopathic traits to be included.

Focus Groups

A series of four focus groups with JJAEP students were conducted to identify their specific problems and concerns. Each focus group consisted of eights students for a total of 32 students. The focus groups took place over a month's time and included a systematic evaluation of rationalizations and justifications for student conduct resulting in placement at JJAEP. This phase also served for the observation of idiosyncratic cultural issues which may be relevant to treatment.

Treatment Protocol Development

The treatment protocol consisted of SIT and cognitive distortions/cognitive reframing components, which target the facets of psychopathy (see Table 6). Individual modules were designed for the identification and modification of facets of psychopathy (e.g., maladaptive thoughts and behaviors, skills training, anger/aggression management, behavior modification,

perspective taking, and contingency management). A research team consisting of two clinical psychology faculty members and several psychology graduate students developed ideas for treatment modules and incorporated information obtained from focus groups. Routine research team meetings were utilized to practice and evaluate the use of role-play activities concerning substance abuse, stealing, and aggressive behavior. Similarly, material for treatment sessions (e.g., videotapes) were also identified and evaluated. Care was taken to identify strategies appropriate for the targeted population, using experiential techniques attempting to ensure appropriate levels of participant interest.

Table 6

Facets of Psychopathy, Cognitive Distortions, and CBT Intervention

Psychopathy Facet	Self-Serving Distortion	CBT Intervention
Interpersonal (F_1)		
Impression management	Self-Centered	CD/CR
Grandiose sense of self worth	Self-Centered	CD/CR
Pathological lying	Self-Centered Minimizing/Mislabeling Blaming Others	CD/CR, SIT
Manipulation for personal gain	Self-Centered	CD/CR
Affective (F_2)		
Lack of remorse	Minimizing/Mislabeling Blaming Others	CD/CR
Shallow affect	Self-Centered Blaming Others	CD/CR, SIT
Callous/lack of empathy	Minimizing/Mislabeling, Blaming Others	CD/CR
Fails to accept responsibility	Blaming others	CD/CR, SIT
Behavioral (F_3)		
Stimulation seeking	Self-Centered	CD/CR, SIT
Impulsive	Self-Centered	CD/CR, SIT
Irresponsible	Blaming Others	CD/CR, SIT
Parasitic orientation	Self-Centered, Minimizing/Mislabeling	CD/CR, SIT

(table continues)

Table 6 *(continued).*

Psychopathy Facet	Self-Serving Distortion	CBT Intervention
Behavioral (F_3)		
Lacks Realistic goals	Assuming the Worst Self-Centered Blaming Others Minimizing/Mislabeling Assuming the Worst	CD/CR, SIT
Antisocial (F_4)		
Poor anger control	Self-Centered Blaming Others Minimizing/Mislabeling Assuming the Worst	CD/CR, SIT
Early behavior problems	N/A	
Serious criminal behavior	Self-Centered Minimizing/Mislabeling Assuming the Worst	CD/CR, SIT
Violations of conditional release	N/A	
Criminal versatility	Self-Centered Blaming Others Minimizing/Mislabeling Assuming the Worst	CD/CR, SIT

Note. Facets of psychopathy based on Forth et al. (2003). Self-Serving Cognitive Distortions. Typology based on Gibbs and Potter (1992). CD/CR = Cognitive Distortions/Cognitive Reframing; SIT = Stress Inoculation Training.

Pilot Groups

Preliminary groups were utilized for pilot testing specific modules and interventions developed for the CBT program. This portion of pilot testing provided the opportunity for the refinement of interventions and subsequent reevaluation. Each pilot group obtained student ratings concerning their level of involvement, enjoyment, and learning. After each module was piloted, revised, and re-tested it was outlined in the treatment manual.

Therapist Training

Group leaders were advanced doctoral students with therapy practica experience from the

clinical and counseling psychology programs at UNT with adequate clinical skills and knowledge of the CBT program. Each group leader was familiar with the treatment protocol and interviewed by the research coordinator prior to leading groups. To ensure a cohesive presentation each treatment session was facilitated by two group leaders. Additionally, each session had at least one group leader who participated in the development of the treatment protocol. Additionally, group leaders consulted with each other prior to each session to discuss the implementation of the treatment protocol. The therapists also discussed their experience in prior sessions to identify strengths and weaknesses of prior sessions and facilitation. Additionally, group leaders were trained in the use of skin conductance monitors.

A second component of the training for group leaders involved the effective management of disruptive behavior. Students at JJAEP are required to comply with strict/boot camp style rules while in classes and other program activities. Their involvement in our treatment program temporarily relaxed these rules; however, students were asked to establish limits for appropriate discussion and behavior at the initial treatment session. The role-playing of potential conflicts ensured that group leaders were competent and comfortable to intervene in such a way to maximize positive participation.

Evaluator Training

The training phase was a critical step in ensuring high-quality evaluations and treatment. Training was conducted separately for evaluators and therapists. For evaluators, the crucial issues were (a) standardized administrations and (b) highly reliable assessment data. Evaluators had completed an advanced course in diagnostic and structured interviewing and completed graduate level assessment practica. Ratings of the PCL:YV require an integration of

administration and scoring. Each Evaluators' competence at administration and scoring of the PCL:YV was assessed systematically. Evaluators read the PCL:YV manual, participated in training sessions with the research coordinator, and observed previously trained evaluators. Evaluators were then expected to achieve high Inter-rater reliabilities ($\underline{r}s \geq .80$) on samples of 3 cases. Students assessed for the purposes of Inter-rater reliability met the program inclusion criteria and were included randomly in both treatment and comparison groups.

Assessment Phases

Self-Report Screening Measures

Data were collected in student classrooms during a time usually scheduled for physical education training exercises. Administration of the measures during this time was expected to increase participation levels. In addition, JJAEP staff members were present to enforce JJAEP student conduct regulations. Prior to each phase of administering screening measures a UNT psychology graduate student explained the assent form and answered JJAEP student's questions concerning the provision of informed consent. Students were also asked to document their informed assent by signing the UNT IRB-approved consent form.

Students then completed a registration form containing an ID number corresponding to their assessment protocols. Participant names were not recorded on assessment protocols. The forms containing participant names and corresponding ID numbers were secured by researchers and used only for the identification of students appropriate for program inclusion. For this phase of assessment participants completed the measures in the following order: STAXI-2, Problems Worksheet, SOCS, APSD-Y, BIS-11, and SALE. A uniform presentation was utilized to facilitate group instruction and ease of completion. The STAXI-2 was presented first due to ease

of administration and familiar, non-threatening subject matter. The Problems Worksheet was presented next and was followed by the SOCS due to their parallel content. The Problems Worksheet required detailed instruction; placing it second in the assessment protocol facilitated an accurate and more time effective administration. The APSD was next to ensure the two psychopathy measures were separated by the BIS-11.

Group Assignment

The assignment of participants to the treatment and comparison groups was a multi-step process. First, participants not expected to be enrolled for the period of time needed to complete the treatment and post-treatment assessment protocols were excluded. The remaining participants were rank ordered according to scores produced on the APSD total score, SALE PS-11 score, and STAXI-2 trait anger score. Students were then matched on gender and ethnicity to equivalent pairs as frequently as was possible. Due to the limited access to female and ethnic minority populations and varying lengths of time of potential participants in the JJAEP program, this ideal was not always attainable. Participants from each pair were randomly assigned to the treatment and comparison group. In each trial 6-8 participants were assigned to the treatment group, and five separate trials were completed.

Pre-Test PCL: YV Assessment

Prior to starting a treatment trial participants assigned to treatment and comparison groups were administered the PCL: YV. Interviewers were provided relevant file information required for PCL: YV administration and interviews were conducted privately in a JJAEP conference room and available offices. Prior to the administration, evaluators reminded JJAEP

students of the voluntary nature of their agreed participation, reviewed issues related to confidentiality, and obtained the participant's verbal agreement to complete the assessment. After completing the standard interview administration and item ratings the evaluator also complete the supplemental PCL: YV subcriteria ratings.

A methodological limitation was anticipated due to limited resources. Unfortunately some evaluators also functioned as group leaders. This practice was avoided to as large a degree as possible. To reduce the influences of this confound, the evaluators/group leaders would not assess participants assigned to the treatment condition at post treatment. In this sense, the evaluator/group leader will not be masked to the participant's group assignment. All other evaluators will be masked to the participant's treatment condition.

Treatment Phase Assessment

Assessment during the treatment phase focused on engagement of treatment (i.e., involvement, enjoyment, amount of learning). Level of participation was a critical component of CBT treatment. The Participant Involvement Form (PIF) was completed at the end of each session. Adolescents were asked to record in a sentence or two what they learned from the session and to rate their level of participation.

Post-Treatment PCL: YV Assessment

Following the treatment trial participants assigned to treatment and comparison groups were administered the PCL: YV. The procedure reflected that described in the Pre-Treatment PCL: YV assessment section. In general, different raters were assigned to each participant at pre and post treatment interviews. Unexpected and uncontrollable circumstances required data to be

collected by the same evaluator so as not to lose data. Additionally, 8 treatment group participants were evaluated at post-test by a treatment group facilitator. A comparison of difference scores between treatment group and comparison group PCL:YV Total Score difference scores, produced from ratings made by group therapists at post-test, was not significant ($F(1,24) = .675$, $p = .42$).

Post-Treatment Questionnaire Assessment

After the completion of the treatment protocol, students in the treatment and comparison groups were re-administered the same questionnaires completed during Pre-test Questionnaire Assessment. This phase of assessment also reflected the procedure described in the Pre-Test Questionnaire Screening section. An outline of phases of assessment is presented in Table 7.

Table 7

An Overview of Assessment Measures Across Study Phases

	Screening[a]	Pre-Testing	Treatment	Post-testing
1. *Participants*				
	STAXI-2	PCL: YV[a]	PIF	PCL: YV[a]
	PW			STAXI-2
	SOCS			SOCS
	APSD-Y			APSD-Y
	SALE			SALE
	BIS-11			BIS-11
2. *Records*				
	K-TEA			

Note. PCL: YV = Psychopathy Checklist-Youth Version; APSD-Y = Antisocial Process; Screening Device-Youth Version; PIF = Participant Involvement Form; KTEA = Kaufman Test of Educational Achievement; STAXI-2 = State-Trait Anger Inventory; PW = Problems Worksheet; SOCS = Stages of Change Scales; BIS-11 = Barratt Impulsivity Scale-11; SALE = Survey of Attitudes and Life Experiences. [a] Standard and Supplementary Ratings.

Treatment Protocol

Treatment Setting

The treatment sessions were held in a large multipurpose room in the JJAEP

administration building. Students were familiar with this room as other programming with students occurred there. Sessions were scheduled during JJAEP's physical training component from 3:30 - 5:00 p.m.

Treatment Program

The CBT program was an 18-session intervention designed to conform to typical alternative school scheduling. Due to school holidays and other scheduling conflicts treatment occurred over 8 weeks. The CBT program was group-focused emphasizing interpersonal skill development via focused activities (e.g., role playing and SIT; See Appendix D). This targeted CBT program sought to balance the sustained focus required for skill acquisition with the need for variety among at-risk adolescents who frequently become bored and disinterested in school-related activities. To achieve this balance, CBT modules were presented intensively, three days a week, alternating between SIT modules and Cognitive Distortions/Reframing modules.

Cognitive distortions and SIT interventions targeted the facets of psychopathy. Targeted CBT interventions were integrated into a time-limited, group-treatment program. SIT was used to modify contextual cues of threat (e.g., anger management) and criminal opportunity (i.e., EA-CA) in retraining emotional response and acceptance of responsibility for actions and reactions. Cognitive distortions and reframing modules address each of the psychopathy facets via self-attributions overvaluing the self at the expense of others.

Data Analyses

Data Screening and Statistical Computation

In order to test hypotheses empirically, all data were entered into databases at the item

level. The accuracy of data entry was examined through the identification of out of range values in frequency distributions of database variables. When out of range values were identified, original data sources were referenced and database values were corrected accordingly. Statistical analyses were computed with the Statistical Package for the Social Sciences, v. 14.0 (*SPSS*) software, with the exception of independent group comparison effect sizes which were calculated with the following formula in an electronic database program:

$$d_{\text{Independent Group Comparison}} = \frac{(M_{\text{Treatment group}} - M_{\text{Comparison Group}})}{SD_{\text{pooled}}}$$

Effect sizes for independent-groups pretest–posttest design comparisons were also calculated, in an electronic database program, with the following formula:

$$d_{\text{Independent Groups Pretest Posttest Design}} = \frac{(M_{\text{posttest}} - M_{\text{pretest}})_{\text{Treatment group}}}{SD_{\text{pretest}}} - \frac{(M_{\text{posttest}} - M_{\text{pretest}})_{\text{Comparison Group}}}{SD_{\text{pretest}}}$$

Preliminary Analyses

Measure Reliability and Validity

Internal consistency and homogeneity were evaluated for each measure as well as the subcriteria and modified scales of the PCL: YV. The internal reliabilities of assessment measures were examined via measures of internal consistency (α). Nunnally and Bernstein (1994) suggested α = .80 as the standard for sound internal consistency for research measures. Scale reliability was also evaluated through inter-item correlations (IIC; See Table 8). Clark and Watson (1995) stated good scale homogeneity is indicated when inter-item correlations range from .15 to .50. In order to assess inter-rater reliability, intra-class correlation coefficients (ICC) were calculated in a two-way random effects model as raters and participants were randomly selected, The ICC is interpreted as the proportion of participant plus rater variance that is

associated with differences among the scores of the participants. Evaluation of absolute agreement of single measures was necessary as rater variance was considered an important aspect of measure reliability.

PCL: YV Modified Scales

Subcriteria for items 12, 18, 19, 20 were excluded from these ratings because by definition, they are historical and unchangeable. Items which produced a mean score rating below 1.25 ($N = 16$) were considered static and excluded from calculations of modified scales in subsequent analyses.

Measure Validity and Relationship with Psychopathy

In order to examine construct validity, correlations between psychopathy measures were calculated. Additionally, correlations between psychopathy measures and other clinical correlates on the STAXI, BIS-11, and SOCS, were calculated. Correlational analyses also examined the relationship between scales of psychopathy and pre-treatment contacts with juvenile probation, placements in juvenile detention and self-reported problems and problem severity.

Hypothesis 1

The primary analysis evaluated pre-test/post-test differences in psychopathy scores of the between CBT treatment and usual-care controls via a repeated-measures MANOVA. Treatment condition served as the independent variable with psychopathy measures, pre-treatment and post-treatment, as the dependent variables. In addition, PCL: YV supplementary ratings (see Rogers et

al., 2000) were examined with treatment condition as the independent variable and the PCL: YV supplementary total scores, pre-treatment and post-treatment, as dependent variables.

Hypothesis 2

The primary analysis evaluated pre-test/post-test differences in self-reported anger via a repeated-measures MANOVA. Treatment condition served as the independent variable with the five subscales of the STAXI-2 (i.e., State Anger, Trait Anger, Anger Out, Anger In, and Anger Control), pre-treatment and post-treatment, as dependent variables.

Hypothesis 3

The primary analysis evaluated pre-test/post-test differences in impulsivity via a repeated-measures MANOVA. Treatment condition served as the independent variable with the three subscales of the BIS-11 (i.e., Attentional, Motor, and Non-planning), pre-treatment and post-treatment, as dependent variables.

Hypothesis 4

The primary analysis evaluated pre-test/post test differences in motivation for change via a repeated-measures ANOVA. Treatment condition served as the dependent variable with the four subscales of the SOCS (Precontemplation, Contemplation, Action, and Maintenance), pre-treatment and post-treatment, as dependent variables.

Hypothesis 5

The primary analysis evaluated institutional and problem behavior via a repeated-

measures MANOVA. Treatment condition served as the independent variable, with an index of points earned, days to level increase, and number of incident reports, post-treatment and at 4-week follow up as dependent variables.

Hypothesis 6

A two-factor mixed design repeated measures ANOVA will be conducted to examine whether pre-treatment levels of psychopathy and treatment condition influence treatment outcomes. Pre-treatment and post-treatment SOCS Readiness to Change Index scores served as the within subjects factor. Pre-treatment levels of psychopathy (high or low based on a median split) and treatment condition served as the between subjects factors.

Hypothesis 7

The primary analysis was a repeated-measures MANOVA. Treatment condition served as the independent variable with the Problems Worksheet total problems, and frequency of problems indices as dependent variables.

Supplementary Analyses

Participant Involvement

To predict participant involvement, a stepwise multiple regression was used to identify possible predictors of greater involvement. PIF scores averaged across the treatment trial served as the independent variable with the four factor scores of the pre-treatment PCL: YV and the four scales from the SOCS as dependent variables.

Pretest Motivation for Change, Juvenile Justice System Involvement, and Self Reported Problems

Correlations were calculated to examine relationships between pretest Stages of Change Scale Readiness to Change Index Scores and records of juvenile justice system involvement (i.e. number of offenses and placements in detention). Additionally, correlations were calculated between the Readiness to Change Index Score and self-reported problems as identified by participants on the Problems Worksheet.

Impulsivity, Anger, Juvenile Justice System Involvement, and Self-Reported Problems

Correlations were also calculated to examine relationships between impulsivity (BIS-11) and anger and histories of juvenile justice system involvement and self-reported problems.

CHAPTER 3

RESULTS

Sample Characteristics

Across data collection trials, a total of 263 participants completed the screening questionnaires. This overall sample ranged in age from 14 to 18 years (M = 15.44, SD = 1.29), and at the time of initial assessment, the mean age was 15.50 years for males and 15.30 years for females ($t(261) = 1.11$, $p = .27$). The sample was largely male (70.0 percent) with an ethnic composition that was 70.0 percent European American, 18.0 percent Hispanic American, and 12.0 percent African American. Based on scores from screening measures (see Chapter 3), participants (n = 92) were then selected for administration of the PCL:YV. These participants had the same age range, and a similar mean age (M = 15.20, SD = 0.97), as the overall sample.

Treatment Subgroups

A total of 5 different trials of the treatment program were completed with one treatment group participating for each trial (i.e., treatment subgroup). Comparisons of treatment subgroups' attendance, pretest PCL:YV Total Score, and pretest SOCS Readiness to Change Index scores were examined (see Appendix E). The range of attendance for the subgroups was 15.38 to 17.13 sessions, out of 18 total sessions, indicating an average of .87 (5%) to 2.62 (15%) unattended sessions. The differences in scores between treatment subgroups were significant and examination of effect size comparison identified some very large differences (d range = .05 to 2.13). Treatment subgroups' participant ratings, pretreatment PCL:YV total scores or the SOCS Readiness to Change Index scores were not statistically different.

Retention of Participants

The study itself consisted of 72 participants assigned to either the treatment (n = 38) or comparison groups (n = 34). Data for two participants assigned to the treatment group were dropped from all treatment/comparison group analyses as it was discovered that one of the participants was incorrectly assigned to the treatment condition due to an error in the computation of the PCL: YV total score. Rescoring resulted in her not meeting criteria for selection due to a low score. The second participant was excluded due to problems with attendance, as she was present for less than 75% of the treatment sessions. Both subjects were female and of Hispanic American descent. Additionally, four of the initially assigned control group participants were unable to complete the second phase of the data collection process due to early/unanticipated discharge from the JJAEP program. After accounting for these withdrawals, data for 36 participants assigned to the treatment group and 30 assigned to the comparison group were available.

These participants also ranged in age from 14 to 18 years (M = 15.18, SD = 1.03) and at the time of initial assessment were slightly younger than the overall sample (mean age was 15.25 for males and 15.11 for females). The research design sought to over sample ethnic minority participants due to limited information regarding these populations in the research literature. These efforts were reasonably successful with 40.0 percent of the population comprised of ethnic minorities and 25.0 percent of the population being female (see Appendix D). Ethnic minority and female representation was higher in the treatment group. One limitation is that no Hispanic American female participants were assigned to the comparison group. The lower numbers of females and ethnic minority youth in the comparison group resulted from limited numbers of

youth in the JJAEP population remaining in the program for a sufficient period of time to participate in the research program.

Of the remaining 36 treatment group participants, two were unable to complete the follow-up PCL: YV interview. Both participants were of African American descent and completed the administration of the posttest self report questionnaires. The first participant, a 14 year old female, was released from the JJAEP program a week prior to her expected discharge date. The second, a 16 year old male, was truant and unsuccessfully discharged from the JJAEP program.

Retention for the post-treatment follow up period was much more difficult than anticipated. Analyses for this aspect of the study were conducted with a much smaller sample size than previous analyses (Treatment group participants $n = 15$ and comparison group participants $n = 8$). Several factors contributed to participant attrition including JJAEP population trends (e.g. few students in the beginning of the school year and limited number of total days required to attend for most students) and time limitations for data collection. The average length of the post treatment period was 4 weeks.

Measure Characteristics

Self Report Measure Reliabilities

Prior to conducting analyses of research hypotheses, it was important to examine the reliability of measures to ensure the meaningfulness of empirical results (see Table 8). The STAXI-2 demonstrated good reliability for four of its seven scales. Specifically, the Trait Anger Scale, Trait Anger-Angry Temperament subscale, Anger Control In subscale, and Anger Control Out subscale had strong internal consistency. Adequate internal consistency was identified for

the Trait Anger-Angry Reaction, Anger Expression In, and Anger Expression Out subscales (α = .71 to .77). Mean inter-item correlations for the STAXI-2 were generally in the optimal range (.15 to .50). The one exception was the Angry Temperament Subscale (r = .64) which may have been limited by the brevity of the scale. Overall the STAXI-2 demonstrated very good reliability.

Table 8

Reliability of Self-Report Measures

Scale	α	Items	*n*	M_{IIC}
STAXI				
Trait Anger	.89	10	256	.45
Angry Temperament	.88	4	262	.64
Angry Reaction	.76	4	259	.44
Anger Control In	.87	8	257	.46
Anger Control Out	.87	8	259	.45
Anger Expression In	.71	8	255	.23
Anger Expression Out	.77	8	262	.29
SOCS				
Precontemplation	.72	8	195	.25
Contemplation	.85	8	198	.41
Action	.84	8	198	.40
Maintenance	.85	8	197	.41
BIS-11				
Total Score	.82	30	189	.14
Non-Planning	.71	11	196	.18
Attention	.65	8	191	.19
Motor	.67	11	197	.15
APSD				
Total Score	.77	20	259	.14
Factor 1	.47	6	262	.13
Factor 2	.65	10	261	.16
Narcissism	.38	6	261	.09
Callous Unemotional	.46	8	262	.10
Impulsivity	.67	7	260	.23
SALE				
11 item	.68	11	255	.16
24 item	.71	24	253	.10

State Trait Anger Expression Inventory-2nd Edition (STAXI-2); Stages of Change Scales (SOCS); Antisocial Process Screening Device (APSD); Barratt Impulsivity Scales-11 (BIS-11); Survey of Attitudes and Life Experiences (SALE); M_{IIC} = Mean Inter-Item Correlation.

The SOCS generally demonstrated good reliability coefficients for its scales. Specifically, the Contemplation, Maintenance, and Action scales had very good internal consistencies (α = .84 to .85), whereas alpha for Precontemplation was adequate (α = .78). Mean inter-item correlations for the SOCS ranged from .25 to .41, also indicated good scale homogeneity.

The BIS-11 scales demonstrated marginal to adequate internal consistency with alpha coefficients ranging from .66 to .82. The SALE 11 item (α = .68) and 24 item (α = .71) scales also demonstrated marginal to adequate internal consistency with mean inter-item correlations ranging from .14 to .19.

The internal consistency of the APSD scales was much more variable. The APSD total score (α = .77) was adequate, Factor 2 (α = .65) was marginal, and Factor 1 (α = .47) was poor. Inter-item correlations were also marginal ranging from .13 to .16. Alpha coefficients for the on 3-factor solution (Frick et al., 2000; Vitacco et al., 2003) indicated overall poor reliability. While the Narcissism factor demonstrated a marginal alpha coefficient (α = .67) and acceptable mean inter-item correlation of .23 both the Callousness/ Unemotional and Impulsivity factors were inadequate with alphas of .38 and .46, and low mean inter-item correlations of .09 and .10, respectively. Efforts to improve alphas by removing items were unsuccessful. While internal consistency was poor, the Factor 2 scale was retained in subsequent analyses in order to be able to compare results with previous research.

PCL:YV Reliability, Subcriteria Ratings, and Modified Scales

Overall, the PCL:YV demonstrated sound psychometric properties (see Table 9) with generally strong measure characteristics and high levels of inter-rater agreement. The Lifestyle Features facet was the only scale to have marginal scale consistency (α = .57), despite having

slightly higher than preferred inter-item correlation (r = .53). While high levels of inter-rater agreement were identified for the Total Score and Factor Scores, ratings of the four facet model were more variable with ICCs ranging from .63 to .94. Again, the Lifestyle Features facet produced the lowest correlation.

Table 9

Reliability of the PCL:YV

Scale	α	Items	M_{IIC}	$ICC_{I\text{-}R}$
Total Score	.90	20	.31	.97
Factor 1 Interpersonal/Affective Features	.82	8	.36	.92
Factor 2 Socially Deviant Lifestyle	.77	9	.28	.90
Facet 1 Interpersonal Features	.80	4	.42	.74
Facet 2 Affective Features	.70	4	.24	.82
Facet 3 Lifestyle Features	.57	5	.53	.63
Facet 4 Antisocial Features	.78	5	.41	.94

M_{IIC} = Mean Inter-Item Correlation; N = 90 for α and M_{IIC}; $ICC_{I\text{-}R}$ = Intra-Class Correlation Coefficient for Inter-Rater Reliability (n = 20; k of raters = 8).

This study was the first to examine the reliability of PCL:YV subcriteria through supplemental ratings (as described in the methods section) and the extent which they comprised homogenous scales. While PCL:YV subcriteria item scales had strong alphas they may have been inflated due to higher than desirable inter-item correlations. These high correlations (rs >.60) were found on 8 of the 19 scales (see Table 10). Particular problems were observed for item 19, which produced a low alpha coefficient of .32. This item consisted of two subcriteria ratings of a participant's history of committing violations of probation or conditional release and history of escaping from a secure institution. The base rate for the latter behavior was extremely low in this study's population, possibly contributing to the sub-standard reliability coefficient.

The primary focus of this study was to evaluate the utility of a short-term treatment program targeting facets of psychopathy. However, the PCL:YV scales contain many static factors which are impossible or unlikely to change. In order to enhance the ability of the

Table 10

Reliability Coefficients of PCL:YV Subcriteria Item Scales

Scale		α	Items	M_{IIC}
Item 1	Impression Management	.84	5	.52
Item 2	Grandiose Sense of Self Worth	.90	5	.65
Item 3	Stimulation Seeking	.88	6	.54
Item 4	Pathological Lying	.95	8	.69
Item 5	Manipulation for Personal Gain	.93	4	.77
Item 6	Lack of Remorse	.88	6	.56
Item 7	Shallow Affect	.81	5	.45
Item 8	Callous/Lack of Empathy	.96	6	.78
Item 9	Parasitic Orientation	.90	5	.65
Item 10	Poor Anger Control	.89	5	.63
Item 11	Impersonal Sexual Behavior	.77	6	.35
Item 12	Early Behavior Problems	.77	7	.33
Item 13	Lacks Goals	.88	6	.56
Item 14	Impulsivity	.87	4	.62
Item 15	Irresponsibility	.87	8	.45
Item 16	Failure to Accept Responsibility	.82	4	.53
Item 17	Unstable Interpersonal Relationships	.87	4	.63
Item 18	Serious Criminal Behavior	**	2	.56
Item 19	Serious Violations of Conditional Release	**	2	.24

n = 83; M_{IIC} = Mean Inter-Item Correlation. ** Alpha not an appropriate statistic for a two-item scale.

PCL:YV to assess changes in levels of psychopathy, the PCL:YV scales were recalculated using only those subcriteria considered to be dynamic or modifiable. Measures of internal consistency computed for the PCL:YV-Modified scales (PCL:YV-M) yielded high internal consistencies with alphas ranging from .82 to .95 (See Table 11). These alphas may have been inflated by higher than desirable IICs, which ranged from .45 to .71.

Table 11

Reliability Coefficients of PCL:YV Modified Subcriteria Scales

Scale	α	Items	M_{IIC}
Total Score	.95	20	.47
Factor One Interpersonal/Affective Features	.92	8	.60
Factor Two Socially Deviant Lifestyle	.88	9	.45
Hare Facet 1 Interpersonal Features	.91	4	.71
Hare Facet 2 Affective Features	.85	4	.59
Hare Facet 3 Lifestyle Features	.82	5	.48
Hare Facet 4 Antisocial Features	.85	5	.52

n = 83; M_{IIC}= Mean Inter-Item Correlation.

Construct Validity

The current research literature has questioned the validity of the application of the construct of psychopathy to child/adolescent populations and few studies have examined this construct in at-risk or non-incarcerated samples. Examination of relationships between psychopathy measures (i.e. self-report and structured interview) and clinical correlates (i.e. impulsivity, anger, motivation for treatment) administered in this study will broaden the understanding of the manifestation of dimensions of psychopathy among these populations.

To begin, correlations between psychopathy scales, both within and between measures, were examined (see Table 12). Conceptually, the correlation between facets comprising Factor 1 (Interpersonal and Affective Features) should have been higher than correlations with Facets comprising Factor 2 (Lifestyle and Antisocial Features). In this study all facets demonstrated the strongest relationship with the Antisocial Features Facet, which was highly correlated with the Total Score (r = .90). Results for the APSD were remarkably similar with a large correlation between Factor 2 (r = .89) and the Total Score.

The relationships between scales of multiple psychopathy measures were also reviewed. Unexpectedly, the APSD Factor 1 scale was not meaningfully related with scales of any other

Table 12

Correlations between Psychopathy Measures Administered For Screening Procedures

	Measures							
	PCL:YV [a]					Sale 11 [b]	APSD [c]	
Scale	Total	Interpersonal	Affective	Lifestyle	Antisocial		Total	Factor 1
PCL:YV								
Interpersonal Features	.80**							
Affective Features	.78**	**.52****						
Lifestyle Feature	.79**	.53**	.47**					
Antisocial Features	.90**	.60**	.62**	**.67****				
SALE 11	.02	.07	.02	-.16	.05			
APSD								
Total Score	**.38****	.40**	.36**	.23*	.26*	.29**		
Factor 1 (CU)	.04	**.11**	**.05**	.03	-.05	-.02	.54**	
Factor 2 (I/CP)	.47**	.44**	.44**	**.30****	**.36****	.32**	.89**	.18**

[a] *n* varies from 85 to 89. [b] *n* varies from 251 to 254. [c] *n* varies from 258 to 260. * $p < 0.05$. ** $p < 0.01$.

psychopathy measure, including the Affective and Interpersonal features facets of the PCL:YV. Also, the SALE 11 item scale was not significantly correlated with any PCL:YV scales but was significantly and positively related to the APSD Total score and Factor 2 scales. Finally, PCL:YV scales consistently showed the strongest relationships with Factor 2 of the APSD. Interestingly, the Interpersonal and Affective features facets, and not the Lifestyle and Antisocial features facets, of the PCL:YV showed stronger relationships with Factor 2 of the APSD.

Correlations between psychopathy measures and self-reported anger (Trait Anger and Anger Expression) were also examined (see Appendix F). Overall, higher levels of psychopathy were associated with increased scores on the Trait Anger Scale and Angry Temperament subscales. The lone exception was a small correlation with the Interpersonal Features facet of the PCL:YV. Concerning the relationship between anger and self-report measures of psychopathy, the APSD demonstrated significantly higher correlations as compared to the SALE. Overall these findings indicate stronger relationship between anger and psychopathy as measured by the APSD, rather than the PCL:YV. However, this may be the result of a measurement effect, as the STAXI-2 and APSD are both self-report measures.

Concerning anger expression, all psychopathy measures and subscales were positively associated with increased levels of the maladaptive expression of anger (Anger Expression Index). A strong relationship was identified between higher levels of psychopathy and decreased efforts to manage angry feelings (Anger Control-In), and to prevent anger expression toward other persons or objects in the environment (Anger Control-Out). Interestingly, the Trait Anger-Angry Reaction subscale was significantly associated with only the PCL:YV Affective Features facet.

As with anger, strong relationships were identified between self-report measures of psychopathy and impulsivity. All BIS-11 scales were shown to be significantly and positively correlated with all scales of self-reported measures of psychopathy (see Appendix G). The SALE-11 item scale also demonstrated significant correlations with all BIS-11 scales, however not to the degree of the APSD. Relationships between impulsivity and psychopathy, as assessed by the PCL:YV, were generally small and nonsignificant. The only significant correlations were between the Affective Features facet and the BIS-11 Total Score and Non-Planning subscale.

Relationships between SOCS scales and psychopathy measures were less consistent than anticipated (see Appendix H). The SALE 11 item scale was the only scale significantly correlated with the Precontemplation scale of the SOCS. Conversely, the pattern of correlations with the APSD indicated a positive relationship between psychopathy and motivation to change behavior. The only significant correlation between scales of the SOCS and PCL:YV was the negative relationship between the SOCS Action scale and the Antisocial Features facet of the PCL:YV, suggesting that higher antisocial features are associated with lower efforts (i.e., actions or behaviors) to change problematic behavior.

Examination of relationships between psychopathy measures and external correlates (e.g. history of involvement with the juvenile justice system and self reported problems/problem severity) identified large gender differences (see Table 13). Female participants demonstrated significant and positive relationships between all PCL:YV scales and increased number of placements in the juvenile detention center, while for males these correlations were small and nonsignificant. PCL:YV scales also demonstrated strong relationships with number of prior

charged offenses across genders, but again were smaller and less consistent for the male population.

Table 13

Correlations Between Pretest Psychopathy Measures and History of Offending, Detention Placements, and the Number and Severity of Self-Reported Problems by Gender

	Juvenile Justice Involvement		Self Reported Problems	
Gender/Measure	Offenses	Detention	Number	Severity
Females				
PCL:YV				
Total Score	.65**	.65**	.59**	.42*
Interpersonal Features	.44**	.55**	.38*	.37*
Affective Features	.47**	.53**	.59**	.33*
Lifestyle Features	.35*	.36*	.27	.26
Antisocial Features	.67**	.61**	.63**	.37*
Sale 11	.07	.06	.46**	.41**
APSD				
Total Score	.27*	.24*	.74**	.62**
APSD Factor 1	.28*	.20	.54**	.43**
APSD Factor 2	.24*	.23	.74**	.56**
Males				
PCL:YV				
Total Score	.44**	.23	.18	.16
Interpersonal Features	.40**	.15	.11	.13
Affective Features	.16	.13	.23	.07
Lifestyle Features	.48**	.25	.16	.08
Antisocial Features	.40**	.20	.13	.21
Sale 11	-.06	-.07	.28**	.34**
APSD				
Total Score	.08	.09	.49**	.55**
Factor 1	.16*	.18*	.37**	.40**
Factor 2	-.01	-.01	.43**	.53**

Note. *n*s for male population on PCL:YV, SALE, and APSD were 47, 144-184, and 145-186 respectively. *n*s for female participants on PCL:YV, SALE, and APSD were 36, 50-67, and 53-70 respectively. * $p < .05$. ** $p < .01$.

These dramatic gender differences were also observed when examining relationships between psychopathy and self-reported problems. For female participants, PCL:YV scales were positively associated with self-reported problems and problem severity, however, these variables

were not meaningfully associated for male participants. Using self-report measures, all psychopathy scales were also significantly and positively related to self-reported problems variables for both genders. However, correlations were again observed to be larger for female participants.

Gender and Ethnicity

Research suggests that aspects of gender and ethnicity may influence the manner in which features of psychopathy are presented, particularly among adolescent populations (Nichols & Petrila, 2005). Relatively few studies, using a community based population of youth at risk for delinquency, have reported data concerning the psychological constructs (i.e., facets of psychopathy, anger, impulsivity, and motivation to change behavior) examined here, and a thorough presentation of the data and analysis was considered necessary. The effects of gender and ethnicity on scale total or index scores of self-report measures and the PCL:YV were examined via MANOVAs and group comparison effect sizes (Cohen's *d*).

Concerning gender, a significant main effect was observed ($F(5,82) = 4.69$, $p = .001$; see Table 14) with males consistently scoring significantly higher than females on all scales of the PCL:YV. The main effect for ethnicity approached significance for the overall model as well as the PCL:YV Total Score. Further examination identified significant main effects for ethnicity on the Lifestyle Features and Antisocial Features Facets. Concerning the interaction between ethnicity and gender, the test of the overall model was significant ($F(5,83) = 2.58$, $p = .03$). Means for the PCL:YV Total Score, are displayed, by gender and ethnic group, in Figure 1. This interaction effect was observed to be significant only on the Lifestyle Features facet (See Figure 2). Hispanic males were observed to have markedly higher scores on all scales than males from

Table 14

Differences on PCL:YV Scales Administered For Screening Procedures by Gender and Ethnicity

	Means and Standard Deviations			Effect Size (*d*) Comparisons				Anova		
Measure	Total	Male	Female	Gender	Groups	Male	Female	Effect	*F*	*p*
Total Score										
EA	9.90 (5.94)	11.89 (6.01)	6.55 (4.11)	**1.01**	E-A	0.04	**0.65**	Ethn.	2.84	**.06**
AA	10.56 (7.09)	11.63 (8.18)	9.50 (6.19)	**0.31**	EA-HA	**1.00**	**0.41**	Gen.	14.22	**.00**
HA	14.06 (8.26)	18.00 (7.09)	8.43 (6.63)	**1.47**	AA-HA	**0.89**	0.18	Inter.	1.58	.21
Total	10.78 (6.73)	12.96 (6.84)	7.54 (5.12)	**0.88**						
Interpersonal Features										
EA	1.42 (1.76)	1.70 (1.94)	0.95 (1.33)	**0.44**	EA-AA	0.16	**0.54**	Ethn.	1.24	.30
AA	1.69 (1.70)	2.00 (1.69)	1.69 (1.70)	0.20	EA-HA	**0.84**	0.07	Gen.	8.41	**.01**
HA	2.29 (2.14)	3.30 (1.95)	0.86 (1.57)	**1.44**	AA-HA	**0.75**	**0.54**	Inter.	1.63	.20
Total	1.63 (1.84)	2.04 (1.97)	1.03 (1.44)	**0.57**						
Affective Features										
EA	1.56 (1.48)	2.03 (1.61)	0.77 (0.75)	**0.94**	EA-AA	0.17	**0.50**	Ethn.	1.34	.27
AA	1.50 (1.63)	1.75 (1.83)	1.25 (1.49)	**0.32**	EA-HA	**0.68**	0.25	Gen.	11.81	**.00**
HA	2.29 (2.20)	3.20 (2.25)	1.00 (1.41)	**1.20**	AA-HA	**0.74**	0.18	Inter.	1.26	.29
Total	1.68 (1.66)	2.20 (1.80)	0.92 (1.06)	**0.84**						
Lifestyle Features										
EA	3.81 (1.50)	4.32 (1.31)	2.95 (1.43)	**1.03**	EA-AA	**0.72**	**0.49**	Ethn.	3.80	**.03**
AA	3.50 (1.37)	3.38 (1.41)	3.63 (1.41)	0.19	EA-HA	**0.81**	**0.67**	Gen.	11.44	**.00**
HA	4.88 (2.00)	5.90 (1.45)	3.43 (1.81)	**1.64**	AA-HA	**1.87**	0.13	Inter.	3.84	**.03**
Total	3.96 (1.63)	4.47 (1.53)	3.19 (1.49)	**0.85**						

(table continues)

Table 14 *(continued).*

	Means and Standard Deviations			Effect Size (*d*) Comparisons				Anova		
Measure	Total	Male	Female	Gender	Groups	Male	Female	Effect	*F*	*p*
Antisocial Features										
EA	2.47 (2.09)	3.11 (2.11)	1.41 (1.56)	**0.90**	EA-AA	**0.34**	**0.70**	Ethn.	3.47	**.04**
AA	3.19 (2.51)	3.88 (3.04)	2.50 (1.77)	**0.59**	EA-HA	**0.81**	**0.67**	Gen.	11.28	**.00**
HA	3.88 (2.50)	4.80 (2.20)	2.57 (2.44)	**1.01**	AA-HA	**0.38**	0.04	Inter.	0.18	.84
Total	2.86 (2.29)	3.53 (2.33)	1.86 (1.83)	**0.79**						

Note. EA = European American; AA = African American; HA = Hispanic American. Ethn. = Ethnicity; Gen. = Gender; Inter. = Interaction. Sample size for EA males = 37 and EA females = 22; Sample size for AA males and females = 8; Sample size for HA males = 10 and HA females = 7. The overall model for interaction effects was F (5,83) = 2.58, p = .03; for Gender was F (5,82) = 4.70, p = .001; and for Ethnicity was F (5,83) = 2.06, p = .08.

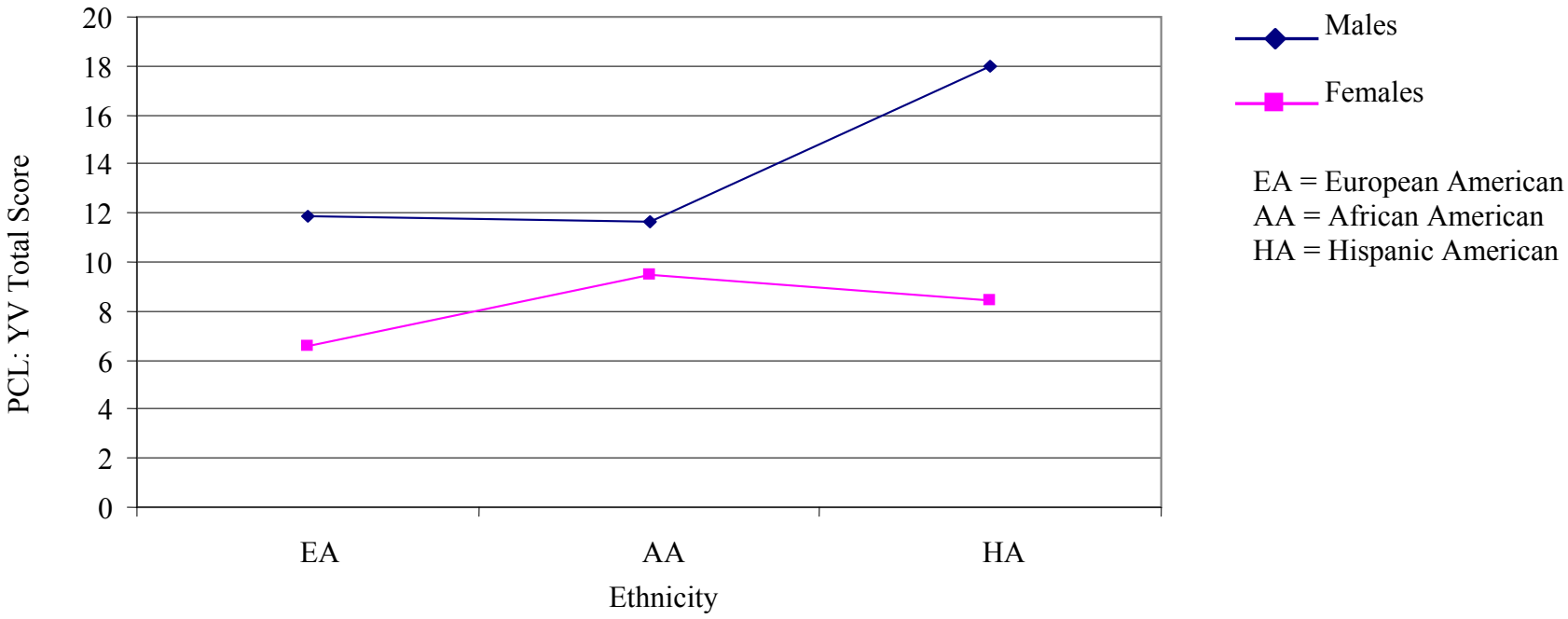

Figure 1. PCL: YV total mean scores by ethnicity and gender.

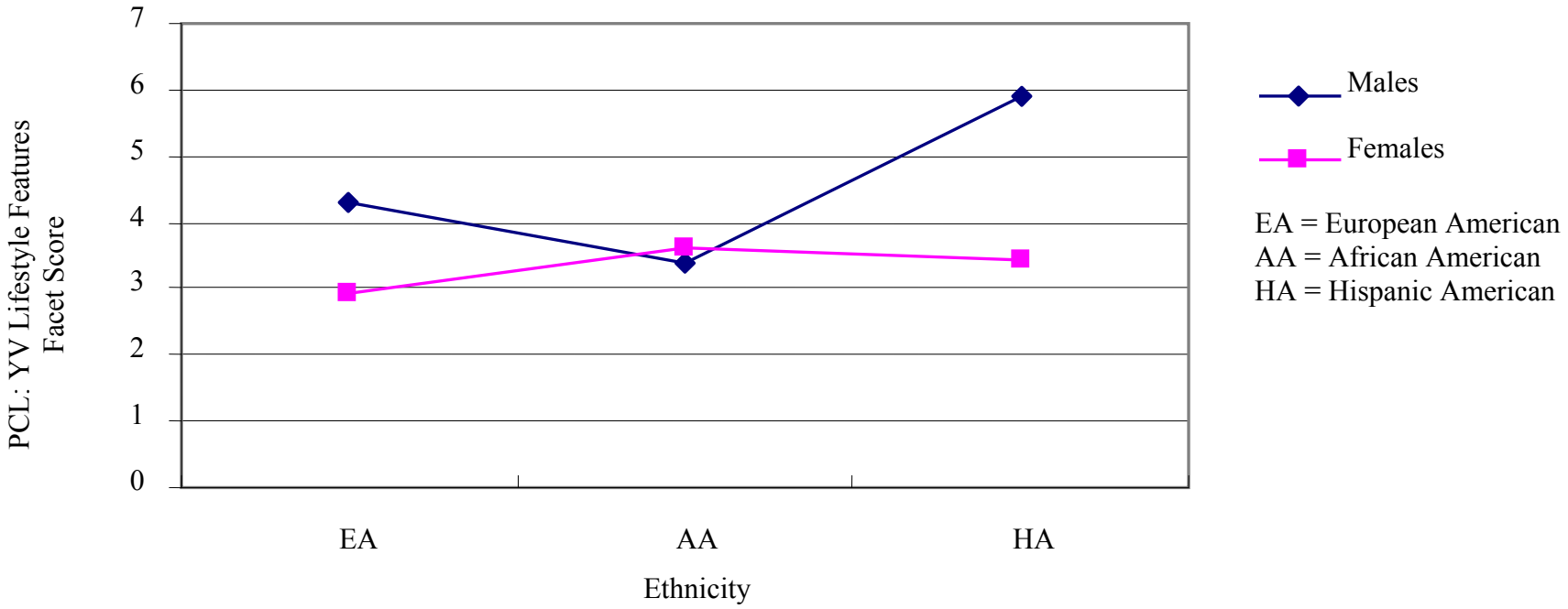

Figure 2. PCL:YV lifestyle features facet mean scores by ethnicity and gender.

other ethnic groups and all females. In addition, European American females exhibited significantly lower scores on all scales than (a) all males and (b) females from other ethnic groups with the exception of the Interpersonal Features Facet where Hispanic American females had a similar but slightly lower score.

Other notable group differences were observed on self-report measures (see Table 15). On psychopathy measures, Hispanic American females reported the highest scores on the APSD, producing a small effect size as compared to the African American female population. African American females were also found to score moderately higher than females from other ethnic groups on the SALE. Concerning impulsivity, a small effect size was also observed for gender comparisons on the BIS-11 Total Score as females scored higher than males (d = .34) and this trend was consistent across ethnicities. African American females were also observed to report moderately higher levels of anger expression (STAXI-2 Anger Expression Index) than all other gender/ethnic groups.

Hypotheses

Hypothesis 1

To examine the effects of treatment on psychopathy, a repeated-measures MANOVA was calculated, evaluating pretest and posttest differences between treatment and comparison group participants' psychopathy scores. Group assignment served as the independent variable, with psychopathy measures, pretest and posttest, as dependent variables. Due to theorized limitations of the PCL:YV as a useful measure of treatment change, supplementary ratings were also examined via a MANOVA with group assignment as the independent variable and pretest and posttest PCL:YV supplementary total scores as dependent variables.

Table 15

Differences on Self-Report Measures Administered For Screening Procedures by Gender and Ethnicity

	Means and Standard Deviations			Effect Size (*d*) Comparisons				Anova		
Measure	Total	Male	Female	Gender	Groups	Male	Female	Effect	*F*	*p*
STAXI										
Trait Anger Scale[1]										
EA	21.03 (7.48)	21.19 (7.54)	20.56 (7.36)	0.08	EA-AA	0.20	0.24	Ethnicity	0.03	.97
AA	20.71 (6.52)	19.74 (6.80)	22.25 (6.00)	**0.40**	EA-HA	0.10	0.01	Gender	0.26	.61
HA	20.51 (6.86)	20.49 (6.79)	20.60 (7.47)	0.20	AA-HA	0.11	0.26	Interaction	0.57	.57
Total	20.89 (7.23)	20.90 (7.30)	20.87 (7.08)	0.00						
Anger Expression Index[2]										
EA	44.44 (16.18)	44.34 (16.61)	44.73 (14.99)	0.02	EA-AA	0.04	0.50	Ethnicity	0.65	.52
AA	47.31 (12.39)	43.75 (12.48)	51.69 (11.21)	**0.69**	EA-HA	0.05	0.19	Gender	0.37	.54
HA	44.31 (13.51)	45.06 (13.39)	41.90 (14.33)	0.24	AA-HA	0.10	**0.81**	Interaction	1.03	.36
Total	44.75 (15.33)	44.42 (15.69)	45.66 (14.39)	0.08						
BIS-11 Total Score[5]										
EA	74.27 (12.71)	72.82 (12.27)	79.07 (13.17)	**0.50**	EA-AA	0.20	**0.49**	Ethnicity	2.35	**.10**
AA	71.67 (12.51)	70.42 (13.11)	72.92 (12.32)	0.21	EA-HA	0.20	**0.63**	Gender	1.88	.17
HA	70.69 (10.74)	70.35 (11.80)	71.67 (7.30)	0.12	AA-HA	0.01	0.13	Interaction	0.54	.59
Total	73.27 (12.37)	72.14 (12.21)	76.31 (12.40)	**0.34**						
SOCS Change Index Score[3]										
EA	54.43 (20.20)	53.88 (20.11)	56.37 (20.73)	0.12	EA-AA	0.11	0.03	Ethnicity	0.15	.86
AA	56.50 (18.91)	56.15 (20.15)	56.91 (18.29)	0.04	EA-HA	0.21	0.04	Gender	0.77	.38
HA	51.49 (23.76)	49.50 (23.81)	57.22 (24.02)	**0.33**	AA-HA	**0.30**	0.02	Interaction	0.21	.81
Total	54.16 (20.68)	53.29 (20.77)	56.64 (20.42)	0.16						

(table continues)

Table 15 *(continued).*

	Means and Standard Deviations			Effect Size (*d*) Comparisons				Anova		
Measure	Total	Male	Female	Gender	Groups	Male	Female	Effect	*F*	*p*
APSD Total Score[4]										
EA	16.69 (5.64)	16.79 (5.71)	16.39 (5.49)	0.07	EA-AA	0.20	0.24	Ethnicity	0.70	.50
AA	15.38 (6.60)	15.63 (6.51)	15.00 (6.99)	0.10	EA-HA	0.06	0.15	Gender	0.01	.93
HA	16.62 (5.63)	16.46 (5.79)	17.20 (5.27)	0.13	AA-HA	0.14	**0.36**	Interaction	0.14	.87
Total	16.52 (5.76)	16.61 (5.79)	16.25 (5.71)	0.06						
SALE 11 Item Scale[6]										
EA	26.22 (5.48)	26.42 (5.60)	25.64 (5.15)	0.14	EA-AA	0.14	**0.33**	Ethnicity	1.55	.21
AA	27.23 (5.16)	27.21 (5.72)	27.25 (4.35)	0.01	EA-HA	0.28	0.07	Gender	2.78	.06
HA	27.35 (5.45)	27.97 (5.33)	25.30 (5.60)	**0.51**	AA-HA	0.14	**0.38**	Interaction	0.60	.55
Total	26.54 (5.44)	26.78 (5.56)	25.88 (5.06)	0.17						

Note. EA = European American; AA = African American; HA = Hispanic American. STAXI-2 = State Trait Anger Expression Inventory -2; SOCS = Stages of Change Scales; APSD = Antisocial Process Screening Device; BIS-11 = Barratt Impulsivity Scale – 11; SALE = Survey of Attitudes and Life Experiences.

[1] Sample size for males and females for EA = 132, 45; AA = 19, 12; and HA = 37, 10, respectively.

[2] Sample size for males and females for EA = 132, 44; AA = 16, 13; and HA = 32, 10, respectively.

[3] Sample size for males and females for EA = 135, 46; AA = 19, 13; and HA = 35, 10, respectively.

[4] Sample size for males and females for EA = 99, 30; AA = 12, 12; and HA = 26, 9, respectively.

[5] Sample size for males and females for EA = 104, 30; AA = 13, 11; and HA = 26, 9, respectively.

[6] Sample size for males and females for EA = 129, 44; AA = 19, 12; and HA = 33, 10, respectively.

Equivalency of Groups

Prior to conducting these analyses, the equivalency of groups on pretest dependent measures was examined via a MANOVA. The effect for group membership ($F(3,59) = 2.26$, $p = .09$) indicated relative equivalency of psychopathy scores between groups, however the probability of differences approached statistical significance. In order to further examine potential pretest differences in scores, between-groups comparison effect sizes (Cohen's *d*) were calculated for all psychopathy measures and scales. Additionally, due to previously identified differences in gender among the larger participant sample, between groups comparisons were calculated separately for the male and female populations across measures. There were no sizeable differences between groups on the PCL:YV, however treatment group participants scored higher than the comparison group on self-report measures of psychopathy, with effect sizes in the small to moderate range (*d*s = 0.39 to 0.55). These pretreatment differences were observed for both genders, but were much more pronounced for female participants (*d*s = .62 to 1.01) as compared to their male counterparts (*d*s = .42 to .48). While not ideal, these patterns of scores should not have a significant impact on the ability to draw meaningful conclusions when analyzing group comparisons, given the variability in scores across psychopathy measures.

Evaluation of Treatment

Overall, participants in the treatment program demonstrated lower PCL:YV scores at posttest, while comparison group participants mean scores increased (with the exception of the Antisocial Features subscale). Statistical analyses failed to reach significance, perhaps as the result of insufficient power related to a smaller than anticipated sample size, mean score comparisons identified small effect sizes for the Total Score ($d = 0.26$), Interpersonal Features *(d*

= 0.24), Affective Features (d = 0.37), and Lifestyle (d = 0.34) Features facets. On self report measures, psychopathy scores were observed to decrease for both groups, but with greater reductions for treatment group participants. Comparisons of mean scores identified negligible to small effect sizes (d range = 0.05 - 0.29). The largest difference was observed on the APSD total score, where the treatment group demonstrated a greater reduction in levels of psychopathy (d = .29; see Table 16).

Table 16

Means (Standard Deviations) and Group Comparisons of Pretest and Posttest Differences on PCL:YV Scales

	Pretest	Posttest	d^1	F	p
PCL:YV					
Total Score			.26	1.94	.17
Treatment group	11.35 (7.08)	9.71 (6.13)	.23		
Comparison Group	12.20 (7.36)	12.30 (5.71)	-.01		
Interpersonal Features			.24	1.12	.29
Treatment group	1.71 (1.85)	1.35 (1.54)	.19		
Comparison Group	1.87 (1.81)	1.93 (2.10)	-.03		
Affective Features			**.37**	2.43	.13
Treatment group	1.91 (1.98)	1.47 (1.63)	.22		
Comparison Group	1.73 (1.65)	1.93 (1.53)	-.12		
Lifestyle Features			**.34**	1.50	.23
Treatment group	4.06 (1.70)	3.67 (1.75)	.23		
Comparison Group	4.33 (1.68)	4.50 (1.38)	-.10		
Antisocial Features			.10	0.28	.60
Treatment group	2.97 (2.34)	2.59 (2.25)	.16		
Comparison Group	3.47 (2.62)	3.30 (2.32)	.06		
APSD					
Total Score			.29	1.07	.30
Treatment group	19.27 (4.88)	17.53 (5.11)	**.35**		
Comparison Group	16.73 (5.76)	16.20 (5.15)	.09		
Factor 1			.25	0.99	.32
Treatment group	5.39 (1.84)	4.86 (1.69)	.29		
Comparison Group	4.33 (2.09)	4.23 (1.57)	.05		

(table continues)

Table 16 *(continued).*

	Pretest	Posttest	d^1	*F*	*p*
Factor 2			.11	0.22	.65
Treatment group	10.36 (2.65)	9.58 (3.18)	.27		
Comparison Group	9.20 (2.70)	8.73 (3.16)	.16		
SALE 11 Item Scale			.05	0.06	.81
Treatment group	28.34 (4.78)	26.29 (5.78)	**.38**		
Comparison Group	28.11 (5.69)	26.35 (4.63)	**.34**		

Note. PCL:YV: Treatment group $n = 34$, Comparison Group $n = 30$. APSD Scales: Treatment group $n = 35$, Comparison Group $n = 28$. SALE: Treatment group $n = 33$, Comparison Group $n = 28$. d^1= the difference between the standardized mean change of the treatment and control groups. The formula for calculation provided for calculation of *d* can be referenced on p. 68. Overall MANOVA $F(3,57) = .72$, $p = .54$; two tailed.

The impact of treatment on dimensions of psychopathy was also examined by gender. Overall, male treatment group participants demonstrated small to moderate reductions in psychopathy as compared to the comparison group on all PCL:YV scales (*d*s = .38 to .54, see Table 17) with the exception of the Antisocial features scale which demonstrated a marginal effect (*d* = .17). Less support for the hypothesis was observed among the female population, where the treatment group demonstrated a small increase on the Interpersonal Features facet (*d* = -.34). All other effect size comparisons on the PCL:YV were negligible to marginal in magnitude, but at least in the hypothesized direction.

Table 17

Means (Standard Deviations) and Group Comparisons of Pretest and Posttest Differences on the PCL:YV by Gender

Scale	Pretest	Posttest	*d*	*F*	*p*
Male					
Total Score			**.38**	3.23	**.08**
Treatment Group	13.53 (7.88)	10.05 (5.26)	**.44**		
Comparison Group	14.45 (6.90)	14.05 (4.26)	.06		
Interpersonal Features			**.54**	4.28	**.05**
Treatment Group	2.16 (2.03)	1.21 (1.44)	**.47**		
Comparison Group	2.25 (1.80)	2.40 (2.21)	-.06		

(table continues)

Table 17 *(continued).*

Scale	Pretest	Posttest	*d*	*F*	*p*
Affective Features			**.47**	2.69	.11
Treatment Group	2.47 (2.37)	1.63 (1.77)	**.35**		
Comparison Group	2.15 (1.69)	2.35 (1.50)	-.12		
Lifestyle Features			**.47**	2.36	.13
Treatment Group	4.74 (1.79)	3.89 (1.59)	**.47**		
Comparison Group	4.85 (1.53)	4.85 (.93)	.00		
Antisocial Features			.17	.30	.59
Treatment Group	3.53 (2.46)	2.89 (1.91)	.26		
Comparison Group	4.25 (2.65)	4.00 (2.10)	.09		
Female					
Total Score			.03	.07	.78
Treatment Group	8.60 (4.88)	9.27 (7.26)	-.13		
Comparison Group	7.70 (6.36)	8.80 (6.83)	-.17		
Interpersonal Features			**-.34**	.90	.35
Treatment Group	1.13 (1.46)	1.53 (1.68)	-.27		
Comparison Group	1.10 (1.66)	1.00 (1.56)	.06		
Affective Features			.16	.18	.68
Treatment Group	1.27 (1.10)	1.27 (1.49)	.00		
Comparison Group	.90 (1.29)	1.10 (1.29)	-.15		
Lifestyle Features			.14	.16	.70
Treatment Group	3.20 (1.15)	3.40 (2.00)	-.17		
Comparison Group	3.30 (1.57)	3.80 (1.87)	**-.32**		
Antisocial Features			.07	.07	.80
Treatment Group	2.27 (2.05)	2.13 (2.61)	.07		
Comparison Group	1.90 (1.79)	1.90 (2.18)	.00		

Note. *n* for both male treatment and comparison group = 20. Female treatment group *n* = 16, comparison group = 10.

The relationship between gender and treatment effectiveness was also examined using self-report psychopathy measures (see Table 18). On the APSD, changes in scores were supportive of the hypothesis for females with between group differences which were small in magnitude for each scale (*d*s = .26 to .44). Treatment group males also showed greater reductions in scores than the comparison group, but differences were less pronounced than for females, particularly on Factor 2. On the SALE, the comparison group demonstrated a larger decrease in

scores (d = .39) than the treatment group (d = .21) and the resulting between groups effect size was marginal in magnitude (d = -.18).

Table 18

Means (Standard Deviations) and Group Comparisons of Female and Male Participants Pretest and Posttest Differences on Self-Report Psychopathy Measures

Scale	Pretest	Posttest	*d*	*F*	*p*
Male					
APSD					
Total Score			.22	0.43	.52
Treatment Group	20.55 (4.86)	18.60 (5.06)	**.40**		
Comparison Group	18.20 (5.09)	17.30 (4.19)	.18		
Factor I			.28	0.52	.48
Treatment Group	5.70 (1.69)	5.00 (1.59)	**.41**		
Comparison Group	4.95 (1.93)	4.70 (1.26)	.13		
Factor 2			.03	0.03	.87
Treatment Group	10.90 (2.71)	10.15 (3.01)	.28		
Comparison Group	9.75 (2.49)	9.15 (2.89)	.24		
SALE 11 Item Scale			.13	0.52	.48
Treatment Group	28.26 (5.67)	28.53 (5.70)	-.04		
Comparison Group	26.35 (5.79)	27.40 (4.69)	-.18		
Female					
APSD					
Total Score			**.36**	0.93	.35
Treatment Group	17.69 (4.56)	16.19 (5.00)	**.32**		
Comparison Group	13.80 (6.14)	14.00 (6.34)	-.03		
Factor I			.26	0.90	.35
Treatment Group	5.00 (2.00)	4.69 (1.85)	.16		
Comparison Group	3.10 (1.91)	3.30 (1.77)	-.10		
Factor 2			**.44**	0.33	.57
Treatment Group	9.69 (2.50)	8.88 (3.34)	**.32**		
Comparison Group	8.10 (2.88)	7.90 (3.67)	-.11		
SALE 11 Item Scale			-.18	0.52	.48
Treatment Group	28.44 (3.65)	27.67 (5.83)	.21		
Comparison Group	26.13 (6.15)	23.75 (5.41)	**.39**		

Note. n for both male treatment and comparison group = 20. Female treatment group n = 16, comparison group = 10.

Finally, in an effort to maximize the utility of the PCL:YV as a measure of change for features of psychopathy, a repeated measures MANOVA was calculated to examine differences

between groups on subscales using modified PCL:YV subcriteria ratings. In conducting this analysis, treatment condition was designated as the between-groups factor, or independent variable, with overall scores from the modified subscales of the PCL:YV as within subjects factors, or dependent variables. The overall effect was not significant (F (5,54) = .67, p = 0.65). Treatment group participants demonstrated lower scores on each modified PCL:YV scale with the exception of the modified antisocial features scale which produced a minimally higher score (see Appendix I).

Hypothesis 2

Hypothesis 2, stated the treatment program would decrease the severity of the participants' experiences and expressions of anger. Prior to examining this hypothesis, an examination of pretest scores was undertaken to identify potential differences between groups on pretest levels of dependent variables. Given the earlier identified gender differences on psychopathy measures, STAXI-2 scores will also be compared between groups and by gender. To accomplish this, a MANOVA was calculated with STAXI-2 Trait Anger Scale and subscales as dependent variables and group assignment and gender as independent variables. In addition, comparison of mean scores, via effect sizes were also calculated (see Appendix J). The stated hypothesis was then evaluated via repeated-measures MANOVA's, with treatment condition designated as the independent variable and pretest and posttest scores on the STAXI-2 subscales as the dependent variables.

Overall, the treatment and comparison groups presented with similar pretreatment levels of the experience and expression of anger. A small difference was observed on the Angry Reaction subscale as treatment group participants scored higher than comparison group (d = .32)

with this effect more pronounced for the male population (d = .45). Comparisons between group mean scores approached a small effect on the Anger Expression Index (d = .29) and this difference in scores was larger for male participants (d = .40). Male participants in the treatment group also had significantly higher pretest scores on the Anger Expression In (AX-In) subscale ($F(1,60) = 4.27$, $p = 0.05$) than their comparison group counterparts (d = .69).

Overall the treatment program demonstrated limited results in decreasing trait anger. Concerning anger expression, treatment group participants demonstrated a significant reduction in the inward expression of anger (AX-In) at posttest as compared to the comparison group whose scores on this scale increased (d = .50; see Table 19). Comparisons of other subscales were not significant and produced negligible effect sizes.

Table 19

Means (Standard Deviations) and Group Comparisons on STAXI-2 Scales

Scale	Pretest	Posttest	*d*	*F*	*p*
Trait Anger Scale			.16	0.10	.76
Treatment group	22.44 (6.36)	21.76 (7.75)	.10		
Comparison Group	20.82 (7.32)	21.29 (6.51)	-.07		
Angry Temperament			.03	0.02	.88
Treatment group	8.72 (2.96)	8.42 (3.68)	.09		
Comparison Group	8.53 (3.55)	8.33 (3.39)	.06		
Angry Reaction			.15	0.33	.57
Treatment group	9.17 (2.76)	9.22 (3.34)	-.02		
Comparison Group	8.27 (2.97)	8.73 (2.68)	-.16		
Anger Expression Index			.23	0.81	.37
Treatment group Total	49.97 (10.90)	47.18 (11.02)	.25		
Comparison Group Total	46.64 (13.73)	46.39 (11.33)	.02		
Anger Expression In			**.50**	4.25	**.04**
Treatment group	17.65 (3.86)	16.50 (3.95)	.29		
Comparison Group	15.71 (4.74)	16.61 (3.94)	-.21		

(table continues)

Table 19 *(continued).*

Scale	Pretest	Posttest	*d*	*F*	*p*
Anger Expression Out			.16	0.38	.54
Treatment group	18.97 (4.15)	18.50 (4.78)	.10		
Comparison Group	19.00 (5.08)	19.25 (4.72)	-.05		
Anger Control In			.06	0.08	.78
Treatment group	16.56 (4.49)	17.03 (3.79)	-.11		
Comparison Group	17.14 (4.64)	17.89 (4.00)	-.17		
Anger Control Out			-.03	0.00	.95
Treatment group	18.09 (4.32)	18.79 (4.42)	-.16		
Comparison Group	18.93 (4.96)	19.57 (4.54)	-.13		

Trait Anger Scales $F(3,62) = .18$, $p = 0.91$; Anger Expression Scales $F(4,57) = 1.02$, $p = 0.41$. Treatment Group $n = 28$, Comparison Group $n = 34$.

Hypothesis 3

The purpose of this analysis was to examine the hypothesis that treatment program participants would demonstrate decreases in levels of different aspects of impulsivity (i.e., maintaining attention, acting on the spur of the moment, and planning). Prior to examining the hypothesis, comparisons of group differences on pretest levels of impulsivity were examined via a MANOVA. BIS-11 scales served as dependent variables and group assignment and gender were independent variables and group differences were also examined via mean score effect size comparisons. Next, the analysis of Hypothesis 3, stating treatment group participants would demonstrate a decrease in levels of impulsivity, as compared to comparison group participants, was evaluated via a repeated-measures MANOVA. Treatment condition was again designated as the independent variable with pretest/posttest scores on the BIS-11 Total Score as the dependent variable. Accompanying this analysis was the calculation of mean score effect size comparisons for all impulsivity scales.

Beginning with pretreatment comparisons of impulsivity, large differences were observed between groups for female participants, with treatment group participants scoring much higher on the Attention scale (d = 1.51) and Total Score (d = .98), and moderately higher on the Motor scale (d = .70). Small to moderate differences were also observed for male participants with treatment group participants scoring higher than the comparison group across scales (ds = .45 to .66). No differences were observed based on ethnicity ($F(2,61) = 0.36$, p = .70). Overall, the treatment group participants demonstrated higher scores across BIS-11 scales (see Table 20). These pretest differences in scores are not ideal, and present a small limitation on the ability to draw conclusions about the utility of the treatment program in reducing levels of impulsivity.

Table 20

Pretest Means (Standard Deviations) and Group Comparisons of BIS-11 Scales by Gender

Scale	Treatment Group	Comparison Group	*d*	*F*	*p*
Total Score[1]	79.09 (9.23)	72.61 (8.13)	**.75**	9.02	**.004**
Male	79.39 (10.09)	73.63 (7.51)	**.66**	4.39	**.04**
Female	78.73 (8.42)	70.44 (9.38)	**.98**	4.80	**.04**
Non-Planning[2]	31.70 (4.24)	30.04 (5.04)	**.37**	2.12	.15
Male	31.61 (4.53)	29.58 (4.95)	**.45**	1.32	.26
Female	31.80 (4.02)	31.00 (5.41)	.18	0.56	.46
Attention[1]	21.73 (3.37)	19.11 (3.50)	**.78**	9.06	**.004**
Male	21.72 (3.63)	20.05 (3.29)	**.49**	4.57	**.04**
Female	21.73 (3.15)	17.11 (3.22)	**1.51**	4.70	**.04**
Motor[3]	25.67 (4.63)	23.46 (3.32)	**.55**	5.62	**.02**
Male	26.06 (4.92)	24.00 (2.81)	**.52**	2.42	.13
Female	25.20 (4.38)	22.33 (4.15)	**.70**	4.06	**.06**

[1] *n* for males = 20, 18 (df = 1,36); females = 16, 10 (df = 1,24); Overall df = 1,62.
[2] *n* for males = 20, 20 (df = 1, 38); females = 16, 10 (df = 1,24); Overall df = 1,64.
[3] *n* for males = 20, 19 (df = 1, 37); females = 16, 10 (df = 1,24); Overall df = 1,63.

Examination of the hypothesis indicates that the treatment program had a significant impact in reducing overall levels of impulsivity for treatment group participants, while

comparison group scores tended to increase (d = .47, see Table 21). Examination of impulsivity subscales also identified similar results, with a statistically significant change on the Motor scale (p = .04, d = .53) scale. A smaller, but still clinically meaningful effect was also observed on the Non-Planning (d = .37) subscale.

Table 21

Means (Standard Deviations) and Group Comparisons of BIS-11 Scales

BIS-11 Scale	Pretest	Posttest	*d*	*F*	*p*
Total Score			**.47**	3.79	**.06**
Treatment group	79.09 (9.23)	77.39 (11.05)	.17		
Comparison Group	72.61 (8.13)	75.36 (9.72)	**-.31**		
Attention			.10	0.14	.71
Treatment group	21.73 (3.37)	21.64 (4.04)	.02		
Comparison Group	19.11 (3.50)	19.39 (4.32)	-.07		
Motor			**.53**	4.55	**.04**
Treatment group	25.67 (4.63)	24.88 (5.30)	.16		
Comparison Group	23.46 (3.32)	25.04 (5.10)	**-.37**		
Non-Planning			**.37**	2.11	.15
Treatment group	31.70 (4.24)	30.88 (4.07)	.20		
Comparison Group	30.04 (5.04)	30.93 (5.03)	-.17		

Treatment group n = 33; Comparison Group n = 28.

Hypothesis 4

As with the previous hypothesis, examination of pretest differences between groups, based on gender and group assignment was accomplished via a MANOVA and mean score effect size comparisons. The comparison of pretest scores based on gender or group assignment was not significant (F(4,59) = .23, p = .92) and the treatment and comparison groups presented with similar scores on Stages of Change scales (see Appendix K).

The stated hypothesis that the treatment program would have a positive impact on participant attitudes and behaviors toward change, was evaluated via a repeated-measures MANOVA, and by calculating independent group effects size comparisons for each measure.

Overall, treatment group participants reported small, but meaningful, increases in attitudes and behaviors supportive behavior change, as compared to comparison group participants. At posttest, treatment group participants demonstrated increased readiness to change across SOCS scales, as compared to the comparison group. However, the test of the hypothesized model was not significant ($F(4,61) = 1.35$, $p = 0.26$). When comparing differences in mean scores, the treatment group demonstrated a larger overall increase on the Readiness to Change Index Score ($d = .29$; see Table 22). Examination of SOCS scales indicated that the treatment group demonstrated increases on the Contemplation ($d = .43$), Maintenance ($d = .41$), and Action ($d = .24$) scales.

Table 22

Means (Standard Deviations) and Group Comparisons of Stages of Change Scales

	Pretest	Posttest	*d*	*F*	*p*
Change Score			.29	1.27	.26
Treatment group	53.64 (23.04)	60.03 (23.54)	.27		
Comparison Group	58.90 (19.56)	58.63 (21.28)	-.01		
Precontemplation			.01	0.01	.91
Treatment group	22.36 (6.26)	21.70 (6.57)	.10		
Comparison Group	22.03 (6.14)	21.53 (5.12)	.09		
Contemplation			**.43**	2.33	.13
Treatment group	26.79 (7.88)	28.30 (6.55)	.21		
Comparison Group	28.83 (6.81)	27.43 (5.84)	-.22		
Action			.24	0.82	.37
Treatment group	25.76 (7.31)	27.52 (7.14)	.24		
Comparison Group	27.03 (5.79)	27.03 (7.03)	.00		
Maintenance			**.31**	1.00	.32
Treatment group	23.45 (6.48)	25.91 (5.76)	**.40**		
Comparison Group	25.07 (6.96)	25.70 (6.29)	.10		

Treatment group $n = 34$, Comparison Group $n = 28$.

Hypothesis 5

A critically important issue is whether treatment gains can be measured directly on

external indices. This hypothesis examined differences between groups on JJAEP program performance (e.g., points earned, incident reports, and days in disciplinary program) and involvement with the juvenile probation department (i.e. referrals to detention and new delinquency charges) as compared to comparison group participants. These variables were examined both during the treatment period and at 6 weeks follow up.

During the treatment program, treatment group participants had virtually no new charges ($F(1,64) = 4.08$, $p = .05$, $d = .51$) and fewer referrals to detention ($d = .30$; see Table 23), relative to comparison group participants. However, an opposite trend was observed for JJAEP program performance. Treatment group participants spent more days on the disciplinary program ($d = -.20$) and received more incident reports ($d = -.26$). While limited due to a small sample size, these latter findings may be an indication that treatment program participants were better able to manage their behavior in the community, avoiding further offense charges, but demonstrated some behavioral difficulties in the JJAEP program.

Table 23

Means (Standard Deviations) and Group Comparisons of Behavioral Variables During Treatment Period

	Treatment Group	Comparison Group	*d*	*F*	*p*
Average Points Earned	57.65 (14.23)	57.92 (15.86)	-.10	0.16	.69
Days in Disciplinary Program	0.67 (2.95)	0.47 (1.48)	-.20	0.64	.43
Incident Reports	0.25 (0.55)	0.17 (0.53)	-.26	1.07	.31
Detention Referrals	0.11 (0.32)	0.17 (0.53)	**.30**	1.44	.23
New Offense Charges	0.03 (0.17)	0.10 (0.40)	**.51**	4.08	**.05**

Treatment group $n = 36$, Comparison Group $n = 30$. Degrees of Freedom (1,64)

Examination of these variables at 6 weeks follow up, found that treatment group participants had no new charges, while comparison group participants were charged with more new offenses ($d = 3.60$). Improvement was made for treatment program participants concerning JJAEP program performance as they spent fewer days on the JJAEP disciplinary program

($F(1,21) = 8.87$, $p = 0.01$, $d = .75$). Treatment group participants were still more likely to receive more incident reports ($d = -.39$). but demonstrated improved overall program performance (Average Points Earned; $d = .19$; see Table 24).

Table 24

Means (Standard Deviations) and Group Comparisons of Behavioral Variables During Post Treatment Period

	Treatment Group	Comparison Group	*d*	*F*	*p*
Average Points Earned	63.18 (5.48)	60.68 (3.69)	.19	0.57	.46
Incident Reports	0.07 (0.26)	0.00 (0.00)	-.39	--	
Days in Disciplinary Program	0.13 (0.52)	1.88 (5.30)	**.75**	8.87	**.01**
New Offense Charges	0.00 (0.00)	0.38 (0.52)	**3.60**	--	

Treatment group $n = 15$, Comparison Group $n = 8$.

Hypothesis 6

Historically, psychopathy has been related to difficulty progressing or engaging in treatment; however, few studies have examined their responsiveness to a treatment program focused on reducing the core features of psychopathy. Given the relatively low levels of psychopathy for this community sample, a median split (i.e., ≤ 10 vs ≥ 10) was utilized in order to more effectively evaluate the influence of higher levels of psychopathy on treatment responsivity (i.e., SOCS Scales). Participants scoring higher than the population PCL:YV Total Score median of 10 were designated as the Higher Psychopathy group, and those with scores equal or lower than the median of 10 were designated as the Lower Psychopathy group.

A two-factor mixed design repeated measures ANOVA was calculated to examine the effect of treatment procedures on the SOCS Readiness to Change Index Scores and participants with different levels of psychopathy at pretest. A significant interaction between time of administration, group assignment, and pretest level of psychopathy on the SOCS Readiness to

Change Index Score ($F(1,62) = 5.40$, $p = 0.02$) was observed. Further examination of the Readiness to Change Index Score identified a significant effect for differences between groups among the higher psychopathy participants but not the lower psychopathy participants.

Among youth with higher levels of psychopathy, the treatment program was observed to have a positive impact on participant's attitudes toward treatment. The treatment group demonstrated moderate increases on the Readiness to Change Index Score ($d = .67$) while the comparison group demonstrated a marginal decrease ($d = -.20$), with the overall difference resulting in a large effect ($d = .87$). Moderate to large effects (ds = .69 to 1.07; see Table 25) were also observed on the Contemplation, Action, and Maintenance scales. Overall the differences in change for SOCS scales, among youth with lower levels of psychopathy, were similar with slightly more negative outcomes for the treatment group.

Table 25

Means (Standard Deviations) and Group Comparisons of SOCS Scales by Level of Psychopathy

Scale	Pretest	Posttest	*d*	*F*	*p*
Index Score				5.40	**.02**
Lower Psychopathy			-.16	0.18	.68
Treatment group	60.21 (15.47)	57.05 (18.65)	-.18		
Comparison Group	56.00 (19.22)	55.47 (22.86)	-.03		
Higher Psychopathy			**.87**	6.30	**.02**
Treatment group	47.82 (27.07)	66.00 (27.16)	**.67**		
Comparison Group	58.53 (21.07)	54.33 (21.65)	-.20		
Precontemplation				2.44	.12
Lower Psychopathy			.11	0.22	.64
Treatment group	22.53 (5.63)	22.47 (5.35)	.01		
Comparison Group	23.47 (6.33)	22.67 (6.75)	.12		
Higher Psychopathy			**.58**	2.37	.13
Treatment group	22.59 (6.66)	20.12 (7.43)	**.34**		
Comparison Group	20.73 (6.92)	22.07 (4.73)	-.23		

(table continues)

Table 25 *(continued).*

Scale	Pretest		Posttest		*d*	*F*	*p*
Contemplation						7.42	**.01**
Lower Psychopathy					-.25	0.30	.59
Treatment group	29.37	(5.26)	27.26	(5.30)	**-.39**		
Comparison Group	27.47	(7.21)	26.47	(6.53)	-.15		
Higher Psychopathy					**1.07**	8.62	**.01**
Treatment group	24.41	(9.11)	30.00	(7.20)	**.68**		
Comparison Group	29.27	(7.01)	26.67	(6.39)	**-.38**		
Action						2.71	.11
Lower Psychopathy					-.07	0.02	.88
Treatment group	28.21	(5.15)	27.21	(5.92)	-.18		
Comparison Group	28.40	(5.57)	27.73	(6.57)	-.11		
Higher Psychopathy					**.69**	3.66	**.07**
Treatment group	23.65	(8.28)	28.76	(8.16)	**.62**		
Comparison Group	25.60	(5.75)	25.13	(7.04)	-.07		
Maintenance						2.27	.14
Lower Psychopathy					.06	0.04	.85
Treatment group	25.16	(5.63)	25.05	(5.42)	-.02		
Comparison Group	23.60	(8.00)	23.93	(7.70)	.04		
Higher Psychopathy					**.69**	3.52	**.07**
Treatment group	22.35	(7.43)	27.35	(6.30)	**.73**		
Comparison Group	24.40	(6.32)	24.60	(6.56)	.03		

Overall Univariate Degrees of Freedom $F(1,64)$; Lower Psychopathy $n = 34$ (Treatment group $n = 19$, Comparison Group $n = 15$), Univariate degrees of freedom $F(1,32)$. Higher Psychopathy $n = 32$ (Treatment group $n = 17$, Comparison Group $n = 15$), Univariate degrees of freedom $F(1,30)$.

Given the positive results regarding self-reported readiness to change for youth with higher levels of psychopathy, an exploratory analysis (MANOVA) was conducted to examine the impact of the treatment program on reducing psychopathy scores, based on different pretreatment levels of psychopathy. Group assignment and level of psychopathy were between group or independent variables, with pretest/posttest subscale scores of the PCL:YV as dependent variables. The overall model was not significant ($F(5,56) = 1.06$, $p = .39$).

The treatment program was found to reduce levels of psychopathy among the higher psychopathy youth. Examination of mean score comparisons found that treatment group participants demonstrated small to moderate reductions in scores on all PCL:YV scales (*d*s = .35 to .69; see Table 26), while comparison group participants' difference in scores were more variable (*d*s = -.49 to .45). On subscales, the most pronounced difference between the groups was observed on the Interpersonal Features facet (*d* = .55). Other smaller but meaningful differences where treatment group participants demonstrated greater reductions were observed on the Total Score (*d* = .25), and Affective Features facet (*d* = .24), producing small effects.

Table 26

Means (Standard Deviations) and Group Comparisons of PCL:YV Scales by Level of Psychopathy

Scale	Pretest		Posttest		*d*	*F*	*p*
Total Score						0.09	.77
Lower Psychopathy					**.68**	2.80	**.10**
Treatment group	6.17	(2.50)	6.33	(4.97)	-.04		
Comparison Group	6.13	(2.45)	8.53	(4.00)	**-.72**		
Higher Psychopathy					.25	0.67	.42
Treatment group	17.25	(5.71)	13.50	(5.07)	**.69**		
Comparison Group	18.27	(5.24)	16.07	(4.62)	**.45**		
Interpersonal Features						1.96	.17
Lower Psychopathy					-.02	0.02	.89
Treatment group	0.56	(0.78)	0.94	(1.16)	**-.38**		
Comparison Group	0.53	(0.74)	0.87	(0.92)	**-.41**		
Higher Psychopathy					**.55**	2.46	.13
Treatment group	3.00	(1.86)	1.81	(1.80)	**.65**		
Comparison Group	3.20	(1.57)	3.00	(2.42)	.10		
Affective Features						0.05	.83
Lower Psychopathy					**.75**	2.83	.10
Treatment group	0.78	(0.65)	0.72	(0.89)	.07		
Comparison Group	0.60	(0.74)	1.33	(1.35)	**-.67**		
Higher Psychopathy					.24	0.73	.40
Treatment group	3.25	(2.18)	2.31	(1.89)	**.46**		
Comparison Group	2.87	(1.55)	2.53	(1.51)	.22		

(table continues)

Table 26 *(continued).*

Scale	Pretest	Posttest	*d*	*F*	*p*
Lifestyle Features				0.55	.46
Lower Psychopathy			**.63**	2.04	.16
Treatment group	3.11 (1.13)	2.89 (1.81)	.15		
Comparison Group	3.20 (1.21)	3.87 (1.51)	**-.49**		
Higher Psychopathy			.09	0.13	.72
Treatment group	5.13 (1.63)	4.56 (1.21)	**.40**		
Comparison Group	5.47 (1.30)	5.13 (0.92)	**.30**		
Antisocial Features				0.67	.42
Lower Psychopathy			**.33**	1.75	.20
Treatment group	1.39 (1.24)	1.22 (1.48)	.12		
Comparison Group	1.53 (1.51)	2.00 (1.89)	-.21		
Higher Psychopathy			-.06	0.02	.89
Treatment group	4.75 (1.98)	4.06 (2.02)	**.35**		
Comparison Group	5.40 (1.99)	4.60 (1.99)	**.40**		

Overall Univariate degrees of freedom $F(1,62)$; Lower Psychopathy $n = 33$ (Treatment group $n = 18$, Comparison Group $n = 15$), Univariate degrees of freedom $F(1,31)$; Higher Psychopathy $n = 31$ (Treatment group $n = 16$, Comparison Group $n = 15$), Univariate degrees of freedom $F(1,29)$.

Among participants with lower levels of psychopathy, the overall PCL:YV score was observed to *increase*. However, the treatment program positively impacted treatment group participants as they demonstrated a smaller increase on the PCL:YV Total Score, as compared to comparison group participants ($d = .68$; see also Table 26). Similarly, treatment group participants demonstrated a negligible decrease while the comparison group scores increased, on the Affective features ($d = .75$), Lifestyle features ($d = .63$), and Antisocial features ($d = .33$) facets. This pattern of scores indicated that participation in the treatment group may have served as a protective factor for youth with lower levels of psychopathy that had been referred to a Juvenile Justice Alternative Education Program.

Hypothesis 7

Another important issue is whether youth perceive treatment as having a positive impact on their lives and self-identified/reported problems. To examine this, a repeated-measures MANOVA was calculated with treatment condition as the independent variable and Problems Worksheet total problems and frequency of problems indices, as dependent variables. The statistical test of this model was not significant ($F(3,59) = 1.03$, $p = 0.39$), however treatment group participants reported a decrease in problems at posttest ($d = .18$) while comparison group participants reported an increase ($d = -.23$), producing a small effect ($d = .41$). Both treatment and comparison group participants reported reductions in problem frequency and severity at the posttest assessment (see Table 27).

Table 27

Means (Standard Deviations) and Group Comparison of Number, Frequency, and Severity of Self-Reported Problems

Scale	Pretest	Posttest	*d*	*F*	*p*
Number of Problems			**.41**	3.19	**.08**
Treatment group	6.91 (3.97)	6.23 (3.54)	.18		
Comparison Group	5.61 (3.72)	6.57 (4.54)	-.23		
Problem Frequency			.10	0.15	.70
Treatment group	8.94 (1.71)	8.34 (2.29)	**.30**		
Comparison Group	8.39 (1.59)	8.00 (2.26)	.20		
Problems Severity			.07	0.07	.79
Treatment group	5.37 (1.44)	5.11 (1.13)	.20		
Comparison Group	5.36 (1.19)	5.21 (1.03)	.14		

Treatment group $n = 34$; Comparison Group $n = 28$.

Supplementary Analyses

Participant Involvement

Psychopathy and negative attitudes toward treatment have been identified as potential

factors related to a lack of engagement, participation, and unsuccessful completion of treatment. A multiple regression was used to identify possible predictors of increased treatment group involvement. Participant Involvement Form scores, averaged across the treatment trial, served as the independent variable with the four factor scores of the pretest PCL:YV and the four scales from the SOCS as dependent variables. The test of the overall model was not significant and none of the scales were significant predictors (see Table 28).

Table 28

Regression Analyses of Participant Involvement as Predicted by PCL:YV Facets and Stages of Change Scales

	B	*t*	*p*
Constant	11.94	5.57	.00
Interpersonal Features	0.18	0.71	.48
Affective Features	0.23	1.13	.27
Lifestyle Features	-0.02	-0.08	.94
Antisocial Features	-0.31	-1.39	.18
Precontemplation	-0.04	-0.68	.50
Contemplation	-0.06	-0.61	.54
Action	0.05	0.51	.61
Maintenance	0.02	0.24	.81

$n = 36$.

Impulsivity, Anger, Juvenile Justice System Involvement, and Self-Reported Problems

The purpose of this section was to examine relationships between clinical correlates of psychopathy (i.e., impulsivity and anger) and problems in social adjustment (i.e., history of juvenile justice system involvement and pretest self-reported problems) in a community based sample. Regarding impulsivity and history of juvenile justice system involvement, only the correlation between the Attention scale of the BIS-11 and number of placements in detention was significant. All BIS-11 scales were significantly and positively related to self-reported problems and problems severity. The Motor Scale demonstrated the largest correlation in relationship to

problem severity (see Table 29).

Table 29

Correlations between Pretest Impulsivity and Anger and History of Juvenile Justice System Involvement, and Pretest Self-Reported Problems

	History of Juvenile Justice Involvement		Problems Worksheet Self Reported Problems	
Measure	Offenses	Detention	Number	Severity
BIS-11				
Total Score	.12	.14	.48***	.52***
Non-Planning	.09	.06	.32***	.31**
Attention	.12	.16*	.40***	.43***
Motor	.07	.11	.39***	.49***
STAXI-2				
Trait Anger Scale	.08	.05	.46***	.51***
Angry Temperament	.11	.08	.40***	.49***
Angry Reaction	.02	-.00	.40***	.37***
Anger Expression Index	.14*	.12	.43***	.56***
Anger Control In	-.14*	-.16*	-.32***	-.44***
Anger Control Out	-.17**	-.14*	-.36***	-.47***
Anger Expression In	.01	.01	.11	.21**
Anger Expression Out	.04	-.01	.47***	.52***

*n*s range from 190-257. *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). ***. Correlation is significant at the 0.001 level (2-tailed).

Correlations between dimensions of anger and juvenile justice system involvement and self reported problems were also examined (see Table 29). Decreased control was the only aspect of anger to be meaningfully related with problems of social adjustment, producing a small but significant correlation with prior involvement with the juvenile justice system. All dimensions of anger were significantly related to self-reported problems and problem severity. Trait anger scales demonstrated positive, moderate correlations with self-reported number of problems and problem severity. Decreased anger control was associated with higher numbers of self-reported problems and greater problem severity. The inward expression of anger was also positively related to problem severity. While small in size, the relationship was statistically significant.

CHAPTER 4

DISCUSSION

While juvenile delinquency arrests have decreased since 1994, detention rates remain high and the number of juveniles held as adults continues to rise (Snyder & Sickmund, 2006). Research directed toward the identification and intervention with youth at-risk for engaging in violent and life-course persistent antisocial behavior has been identified as a key component in battling this public health issue. Psychopathy is related to a disproportionate contribution in antisocial/criminal behavior. In recent years, researchers have examined the validity of the construct of psychopathy in child and adolescent populations and this effort has resulted in the development of measures (semi-structured file review/self-report/collateral report) specifically designed for the assessment of dimensions of psychopathy in youth. As a result, data on adolescent psychopathy has been associated with increased institutional infractions (Brandt, Kennedy, Patrick, & Curtin, 1997; Hicks, Rogers, & Cashel, 2000), conduct problems (Toupin, Mercier, Dery, Cote, & Hodgins, 1995), and criminal recidivism (for a review see Edens, Campbell, & Weir, 2006/2007). However, these advances have not been made without controversy. Questions regarding the validity of the construct of adolescent psychopathy, and its reliable assessment in adolescent populations prompted the publication of an adversarial forum (Weiner, *Law and Human Behavior,* April, 2002) to address these issues. Additional concerns have also been raised regarding the potential harm associated with a youth being classified as psychopathic, especially in criminal justice and legal decision making settings (Edens, 2006; Edens, Guy, & Fernandez, 2003; Murrie, Cornell, & McCoy, 2005; Rockett, 2007).

This controversial atmosphere forms the context in which central issues regarding adolescent psychopathy are being researched. Particular attention is being directed towards the

examination of the reliability and predictive utility of measures, the relationship between psychopathy and clinical correlates, and the amenability of dimensions of psychopathy to treatment interventions. With the historical conceptualization of adult psychopathy as resistant to change, the costs of not identifying at-risk youth and developing effective treatment interventions are immeasurable. While research concerning the assessment of dimensions of psychopathy in juveniles is burgeoning, significant gaps remain, particularly among community based populations. Few studies have examined the responsivity of levels of psychopathy to focused treatment/interventions. This study grapples with two domains of adolescent psychopathy, specifically assessment and intervention.

Assessment

Special issues of *Behavioral Sciences and the Law* (2003, 2004) and the *Journal of Abnormal Child Psychology* (2005), along with other publications, highlight issues regarding the assessment of adolescent psychopathy. These publications have focused on developmental issues and the generalizability of measures of juvenile psychopathy. Concerns regarding developmental issues have specifically focused on difficulties differentiating features of psychopathy from transient disturbances associated with normal adolescent personality development (Seagrave & Grisso, 2002; Farrington, 2005) and limited empirical support for developmental models of psychopathy (Salekin, 2002). These concerns are magnified by a lack of research examining the relationship between adolescent psychopathy and other personality constructs (Farrington, 2005). Issues regarding the generalizability of psychopathy to diverse populations also must be addressed with adolescents. Specific issues regarding differences in the development and manifestation of features of adolescent psychopathy in female (Edens et al., 2006/ 2007; Nichols

& Petrila, 2005) and minority populations (Edens et al., 2006/2007; Edens, Petrila, & Buffington-Vollum, 2001; Hicks et al., 2000) remain.

This dissertation broadened the empirical literature through the examination of multiple psychopathy measures and their relationship with clinical correlates (i.e., anger and impulsivity) in a diverse population of at-risk youth. In addition, this study probed relationships between histories of antisocial behavior and self-reported problems. It also examined the relationship between psychopathy and motivation for treatment (i.e., the Stages of Change).

Measures of Adolescent Psychopathy

Researchers have recently developed measures specifically for the assessment of dimensions of psychopathy in child and adolescent populations. Central to the validation of the construct of adolescent psychopathy is the ability to establish strong psychometric properties, both internally and externally, that are applicable across varied populations (Farrington, 2005). This study was able to examine the consistency among individual items (i.e., internal consistency) and across raters (i.e., inter-rater reliability).

Internal Consistency and Inter-Rater Reliability

Scale homogeneity refers to the degree to which scale items assess a singular or unified construct, and provides the basis by which the reliability of a scale is measured. Internal consistency, a component of scale homogeneity, refers to the overall degree to which the items that make up a scale are interrelated or correlated. Indices of internal consistency (e.g., coefficient alpha) demonstrate scale reliability by identifying the proportion of error variance in the scale (see Cortina, 1993). High internal consistency is expected when a measure is

constructed to assess a single dimension and, if internal consistencies are low, other reliability estimates are likely to be negatively impacted. With adolescent offenders, the PCL:YV has been reported to produce a reliable total score reflecting a nested two factor/four facet model of psychopathy (Forth, Kosson, & Hare, 2003). While numerous studies have examined the factor structure of the PCL:YV (for a review see Murrie, Marcus, Douglas, Lee, Salekin, & Vincent, 2007), relatively limited information has been reported regarding the psychometric properties of the four facet model, particularly in community based samples (Salekin, Branned, Zalot, Leistico, & Neumann, 2006).

Overall the PCL:YV has shown relatively strong psychometric properties. The four facet model of the PCL:YV has consistently shown adequate to strong internal consistencies, with the exception of a recent report by Edens et al. (2006, 2007) which reported substantially lower coefficients for most of the scales (see Table 30). Previous studies have generally demonstrated higher internal consistencies for the Interpersonal and Affective Features facets as compared to the Lifestyle and Antisocial Features Facets. The current study demonstrated variability from these previous studies with a higher coefficient for the Antisocial Features facet. While some variability exists between samples of incarcerated and non-incarcerated youth, overall the internal consistency of the four facet model appears to be adequate for both types of populations.

While numerous studies have reported on the reliability of the PCL:YV, none have examined the psychometric properties of PCL:YV subcriteria which form the foundation of PCL:YV item ratings. Rogers, Salekin, Hill, Sewell, Murdock, and Neumann (2000), noted that the examination of item rating subcriteria is essential for establishing the reliability and utility of the measures. In their study of these characteristics among an adolescent population for the PCL:SV, Rogers et al. (2000) also found overall strong criteria item scale homogeneity (αs range

from .64 to .90). Generally speaking, coefficient alphas for the current study were higher (αs range from .72 to .96) with the exception of Item 19 (Serious Violations of Conditional Release; α = .32). As with Rogers and colleagues, several item-scales had high inter-item correlations, indicating potentially inflated alphas due to item redundancy. These high alphas may be partially attributed to the relatively low level of psychopathy in this sample, resulting in limited variation in scores across participants. Overall the psychometric properties of PCL item subcriteria scales are reliable indicators for the overall items and support the adequate to strong internal consistency reliabilities of PCL:YV scales.

Table 30

Internal Consistency of PCL:YV Facets

Study	P	N	T	F1	F2	F3	F4
Forth et al. (2003)	I	1,495*	.85	.71	.72	.68	.77
Forth et al. (2003)	M	1,631**	.87	.74	.81	.77	.77
Spain et al. (2004)	I	85	.72	.53	.54	.42	.51
Salekin et al. (2006)	C	130	.92	.90	.86	.67	.68
Murrie et al. (2007)	M	757	.83	.72	.68	.53	.65
Edens & Cahill (2007)	I	76	.71	.49	.47	.69	.47
Current Study	P/C	90	.90	.80	.70	.57	.78

Note. P = Population (C = Community; I = Institutionalized; M = Mixed), T = Total Score; F1 = Interpersonal Features Facet; F2 = Affective Features Facet; F3 = Lifestyle Features Facet; F4 = Antisocial Features Facet. * *n* for facets = 505.

Another key component regarding the reliability of the PCL:YV concerns the consistency of agreement between raters. Item ratings for the PCL:YV require the rater to integrate clinical data (i.e., interview and file review). It is important to ensure that ratings of the constructs are consistent among raters, limiting biases on item ratings. The overall agreement between raters for the Total Score was high (.97) and within the range (ICCs = .83 to .99) reported in a recent meta-analytic review (Edens et al. 2006/2007) and is consistent with normative samples (Forth et al., 2003).

Limited data are available concerning inter-rater reliabilities for the four facet model of the PCL:YV. Schmidt, McKinnon, Chattha, and Brownlee, (2006) reported inter-rater reliabilities for the four facet model in a mixed-gender population of community-based adjudicated youth, using a file-review method for PCL:YV ratings. Spain, Douglas, Poythress, and Epstein (2004) reported the same data from a sample of male incarcerated youth (see Table 31), incorporating both file review and interview to establish ratings. Most obvious from comparisons of the studies is the significant variability in reliability coefficients for all scales. Additionally, each facet demonstrated limited levels of agreement between raters on at least one study with poor agreement for the Lifestyle Features facet for 2 of the 3 studies. Improvement in consistency for inter-rater agreement for PCL:YV facets is also needed. The consistency of scores on these more refined dimensions of psychopathy will be critical as researchers continue to examine the reliability, stability, and predictive utility of the PCL:YV.

Table 31

Inter-Rater Reliability of PCL:YV

		PCL:YV Facets			
Study	Total	1	2	3	4
Spain et al. (2004)	.82	.86	.71*	.83	.61
Schmidt et al. (2006)	.91	.88	.87	.64	.88
Current Study	.97	.74	.82	.63	.94

*For Affective Features, one highly discordant paired rating strongly affected the reliability coefficient and was removed. Prior to this the reliability coefficient = 0.43)

While the PCL:YV is considered the standard for adolescent psychopathy assessment, self-report measures of psychopathy are also widely administered and examination of the psychometric properties of these measures is also requisite. This study utilized two self-report measures the SALE and APSD. The SALE was designed as a self-report measure, with low face

validity, for the assessment of dimensions of personality and behavior associated with adolescent conduct problems and psychopathy (Rogers, Vitacco, Cruise, Sewell, & Neumann, 2002). Two scales, consisting of 11 and 24 items, were identified as potential screening measures for adolescent psychopathy. One of the most frequently administered self-report psychopathy measures is the APSD. Generally speaking the APSD Total score has demonstrated strong psychometric properties while subscales have performed poorly. The findings of the current study are largely consistent with the previous literature and support those who have questioned the continued use of the CU scale without revision (for a review see Poythress, Douglas, Falkenbach, Cruise, Lee, Murrie, & Vitacco, 2006). Recently, Munoz and Frick (2007) reported results from a longitudinal study of reliability, stability, and predictive utility of the APSD in a sample of at-risk youth. They reported adequate internal consistency for the Total Score across three waves of data collection (two-year time interval; alpha's ranging from 0.78 to 0.81) to be adequate. The APSD subscales performed less well (alphas ranging from 0.50 to 0.68) which is consistent with previous reviews (see Poythress et al., 2006). Munoz and Frick (2006) suggest the low internal consistency estimates may indicate the 3 factor structure of the APSD may not be applicable to non-institutionalized samples where there are lower base rates.

Psychopathy Measure Correlations

Another key component in examining the reliability of a measure is construct validity, or the degree to which a measured trait correlates with other measures of the same construct. Ideally, strong correlations using different methods of assessment would serve to bolster the construct validity of dimensions of adolescent psychopathy. Farrington (2005) noted the consistently low correlations between subscales of the PCL:YV and self-report measures of

psychopathy. For example, correlations of .35 and .41 between the total scores of the PCL:YV and APSD have been reported in samples of juvenile offenders (Salekin, Neumann, Leistico, DiCicco, & Duros, 2004; Salekin, Leistico, & Trobst, 2005). Using the same measures the current study reported a similar relationship between these scales (r = .38). Convergent validities for facets of psychopathy have also been small to negligible as reported by Salekin et al. (2005) with correlations of .16 on interpersonal features, .27 on affective features, and .40 on impulsive/behavioral features. The current study found negligible correlations concerning convergent validities of the interpersonal and affective features of psychopathy as assessed by the PCL:YV's four facet model and the APSD's two factor model. Correlations between the impulsive and antisocial aspects were better, but still small and lower than correlations between the interpersonal and affective features of the PCL:YV and Factor 2 of the APSD (rs = .44). Correlations between PCL:YV scales and the SALE 11 item scale were very low. However, the SALE was meaningfully correlated with the APSD Total Score and APSD Factor 2, but not Factor 1. The finding that the SALE is significantly correlated with two of the three APSD scales, and none of the PCL:YV scales, suggested the SALE may measure features of psychopathy (e.g. attitudes and beliefs) which are not assessed by the PCL:YV, but are represented in some degree on the APSD.

The overall low correlations between convergent validities, and stronger relationships between divergent validities found in this study (see Table 32) demonstrate a continued need to examine the construct validity of adolescent psychopathy. These results further emphasize the need to examine the relationship between psychopathy measures and other measures of personality, as well as external criterion which reflect the different measures of psychopathy (cognitive skills, behavioral assessments). The low correlations in this study may be related to

Table 32

Correlations Between Psychopathy Measures

	Measures							
	PCL:YV [a]					APSD [c]		
Scale	Total	F1	F2	F3	F4	Total	F1	F2
PCL:YV								
Total Score								
Interpersonal Features	.80**							
Affective Features	.78**	.52**						
Lifestyle Feature	.79**	.53**	.47**					
Antisocial Features	.90	.60**	.62**	.67**				
APSD								
Total Score	.38**							
Factor 1 (CU)	.04	.11	.05	.03	-.05	.54**		
Factor 2 (I/CP)	.47**	.44**	.44**	.30**	.36**	.89**	.18**	
SALE 11 Item Scale	.02	.07	.02	-.16	.05	.29**	-.02	.32**

[a] *n* varies from 85 to 89. [b] *n* varies from 251 to 254. [c] *n* varies from 258 to 260. * $p < 0.05$. ** $p < 0.01$. For PCL:YV: F1 = Interpersonal Features Facet, F2 = Affective Features Facet, F3 = Lifestyle Features Facet, F4 = Antisocial Features Facet

low base rates of psychopathy associated with the community based sample. As a goal of the assessment of psychopathy in youthful populations is to identify at-risk youth in order to prevent the further development of psychopathic traits, the development of more sensitive measures (e.g. personality and behavioral) which demonstrate predictive relationships with psychopathy and antisocial behavior is warranted.

Psychopathy, Gender, and Ethnicity

Despite an ever broadening empirical literature studying adult and adolescent populations, significant concerns remain regarding the generalizability of the construct of psychopathy across age, ethnicity, and gender groups. Questions regarding potential group differences, particularly in adolescent populations, in the manner in which psychopathy is expressed, the equivalency of psychopathy scores, and its ability to predict violent behavior, continue to promote controversy regarding the use of psychopathy measures in clinical/forensic settings (Odgers, Repucci, & Moretti, 2005; Farrington 2005). In recent years, researchers have begun to sharpen their focus on the validity of psychopathy among ethnic minority (Edens, et al., 2006/2007; McCoy & Edens, 2006) and female populations (Odgers et al., 2005). These areas will be discussed within the context of the current study in the sections below.

Gender and Ethnicity

Concerning gender, a recent two-volume issue of the journal, *Behavioral Sciences and the Law,* was dedicated to examining psychopathy in female populations. Nichols and Petrila (2005) discuss differences in emotional development, gender-role socialization, and biological sex differences as potential factors resulting in differing expressions of psychopathic traits in

adolescent females. As an example, they argue that females may be less likely to utilize physical force and instead engage in manipulative behavior and aggressive acts which involve the use of weapons. Indeed, research indicates females traverse different developmental pathways to antisocial behavior than males (Eme & Kavanaugh, 1995; Loeber & Loeber-Stouthamer, 1998; Silverthorn & Frick, 1999). Females also tend to commit fewer sexual offenses, more arson (Strand & Belfrage, 2005), and their crimes are more likely to involve relational aggression (Robbins, Monahan, & Silver, 2003).

In the current study, males scored significantly higher than females on the PCL:YV. In contrast, no substantive differences were observed between genders on self-report measures of psychopathy. Salekin et al. (2005) also reported males were rated higher than females on the PCL:YV. While the difference between gender was not statistically significant ($p = .15$) a comparison of mean scores produced a small effect ($d = .31$), reflecting a 12% difference between the groups. This finding reflects discussions presented by Vitale, Smith, Brinkley, and Newman (2002) and Hare (2003) who reported women have significantly lower base rates of psychopathy than men. However, Leistico, Salekin, DeCoster, and Rogers (2008), in a broad meta-analytic review, reported that effect sizes for the predictive relationship between psychopathy and antisocial conduct were stronger in studies with larger numbers of females.

Concerning ethnicity, a broad meta-analytic study by Leistico et al. (2008) identified a moderate relationship between psychopathy and antisocial outcomes across ethnic populations. However, samples with larger percentages of European American participants had larger effect sizes. In a more focused empirical review of psychopathy and antisocial outcomes in youth, Edens et al. (2006/2007) reported a moderate relationship between psychopathy and antisocial outcomes, but noted considerable heterogeneity among the effect sizes with some variability

explained by the ethnic composition of the samples. Additionally, the relationship between psychopathy and violent recidivism was weaker in more ethnically diverse populations.

In addition to variability in the relationship between psychopathy and antisocial outcomes among ethnic minority populations, other studies have reported on the factor structure across ethnicities. The PCL:YV manual (Forth et al., 2003) reported higher scores for African American as compared to European American youth (d = .61). More recently, McCoy and Edens (2006) reported results from a meta-analytic review and identified a smaller but statistically significant difference such that African American youth had higher PCL:YV Total scores than European American youth (d = .20). In addition to European American and African American youth, the current sample also included Hispanic American youth. Overall these groups demonstrated large variability in PCL:YV scores with Hispanic Americans demonstrating moderately higher scores than both the African American (d = .47) and European American (d = .65) populations. European American youth also scored slightly lower than the African American (d = .11) population.

In addition to total scores, studies have suggested ethnic differences in the manifestation of the PCL:YV dimensions of psychopathy. Leistico and colleagues (2008) reported stronger relationships between antisocial outcomes for PCL Factor 2 scores among more European American samples, while the relationship between antisocial conduct and F_1 was consistent across populations. Additionally, African American populations may demonstrate greater levels of impulsivity as compared to European American populations (for a review see Jackson, Neumann, & Vitacco, 2007; McCoy & Edens, 2006). While not examining the relationship between ethnicity, psychopathy, and outcomes, the current study did identify that Hispanic Americans had the highest scores across PCL:YV dimensions of psychopathy. While having

overall higher scores, African Americans scored lower than European Americans on both the Affective and Lifestyle Features facets. While direct comparisons cannot be made with the studies reviewed in this section, due to differences in the reporting of data, theoretically the findings of the current study regarding the patterns of scores for the European and African American population would seem to be in conflict with results reported by the other studies reviewed in this section.

Despite the numerous reviews of PCL measures and issues regarding race and ethnicity limited data are available concerning the relationships between these variables and self-report measures of psychopathy (i.e. APSD and SALE). Unlike the PCL:YV, ethnic differences on the APSD and SALE were small. Results concerning ethnicity and the APSD, in terms of rank order and effect sizes, were remarkably similar to those identified in a sample of incarcerated youth reported by Vitacco, Rogers, and Neumann (2003).

While separate discussions of overall differences based on gender and ethnicity are useful, this study identified large differences in psychopathy scores based on the interaction between gender and ethnicity. On the PCL:YV, the results reflected the overall sample with the Hispanic American population demonstrating much larger scores across scales, than either the African American or European American populations. Comparisons between African American and European American participants for the PCL:YV Total score showed little difference (d = .04) and contrast that reported by Skeem, Edens, Camp, and Colwell (2004) and McCoy and Edens (2006). Examining differences in facet scores between ethnic groups in the current study identified moderate to large effects for comparisons between Hispanic Americans and both African American and European Americans, particularly with males (see Table 33). This finding was consistent for all facet scores with the exception of the Antisocial Features facet where the

difference between Hispanic Americans and African Americans was identified as small (d = .38) but remained large as compared to European Americans (d = .81). These findings are inconsistent with Sullivan, Abramowitz, Lopez, and Kosson (2006) who reported African American males demonstrated higher scores on psychopathy measures as compared to European Americans and Hispanic Americans in an adult inmate sample.

Table 33

Comparisons of PCL:YV Scales Administered to Male Participants by Ethnicity

	Mean (SD)			Comparison		
Measure	EA	AA	HA	*d1*	*d2*	*d3*
PCL:YV[1]						
Total Score	11.89 (6.01)	11.63 (8.18)	18.00 (7.09)	0.04	**1.00**	**0.89**
Interpersonal	1.70 (1.94)	2.00 (1.69)	3.30 (1.95)	0.16	**0.84**	**0.75**
Affective	2.03 (1.61)	1.75 (1.83)	2.29 (2.20)	0.17	**0.68**	**0.74**
Lifestyle	4.32 (1.31)	3.38 (1.41)	5.90 (1.45)	**0.72**	**0.81**	**1.87**
Antisocial	3.11 (2.11)	3.88 (3.04)	4.80 (2.20)	**0.34**	**0.81**	**0.38**
APSD						
Total Score[2]	16.79 (5.71)	15.63 (6.51)	16.46 (5.79)	0.20	0.06	0.14
SALE						
11 Item Scale[3]	26.42 (5.60)	27.21 (5.72)	27.97 (5.33)	0.28	0.14	0.14

Note. EA = European American, AA = African American, HA = Hispanic American. *d1* = EA-AA, *d2* = EA-HA, *d3* = AA-HA. [1]Sample size for EA = 37, AA = 8, HA = 10. [2]Sample size for EA = 104, AA = 13 and HA = 26. [3]Sample size for EA = 129, AA = 19 and HA = 33.

While numerous studies have reported data concerning ethnic differences on PCL measures, none have focused on the examination of ethnic differences among female populations. In the current study, African Americans had the highest scores on all PCL:YV scales with the exception of the Antisocial Features facet where they were rated lower than Hispanic Americans (see Table 34). This finding is consistent with reports from studies with predominantly male populations (e.g., Skeem et al., 2004). European Americans had the lowest scores on all facets, with the exception of the Interpersonal Features facet, in which they scored higher than Hispanic Americans. African American females also reported the highest scores on

the SALE-11 item scale. In contrast, Hispanic American females had the highest scores on the APSD, while African American females reported the lowest scores.

Table 34

Comparisons of PCL:YV Scales Administered to Female Participants by Ethnicity

	Mean (SD)			Comparison		
Measure	EA	AA	HA	*d1*	*d2*	*d3*
PCL:YV						
Total Score	6.55 (4.11)	9.50 (6.19)	8.43 (6.63)	**0.65**	**0.41**	0.18
Interpersonal	0.95 (1.33)	1.69 (1.70)	0.86 (1.57)	**0.54**	0.07	**0.54**
Affective	0.77 (0.75)	1.25 (1.49)	1.00 (1.41)	**0.50**	0.25	0.18
Lifestyle	2.95 (1.43)	3.63 (1.41)	3.43 (1.81)	**0.49**	**0.67**	0.13
Antisocial	1.41 (1.56)	2.50 (1.77)	2.57 (2.44)	**0.70**	**0.67**	0.04
APSD						
Total Score[4]	16.39 (5.49)	15.00 (6.99)	17.20 (5.27)	0.24	0.15	0**.36**
SALE						
11 Item Scale[6]	25.64 (5.15)	27.25 (4.35)	25.30 (5.60)	**0.33**	0.07	**0.38**

Note. EA = European American, AA = African American, HA = Hispanic American. *d1* = EA-AA, *d2* = EA-HA, *d3* = AA-HA. [1]Sample size for EA = 22; AA = 8; HA = 7. [2] Sample size for EA = 30, AA = 11, and HA = 9. [3] Sample size for EA = 44, AA = 12, and HA = 10.

While numerous studies have reported data concerning ethnic differences on PCL measures, none have focused on the examination of ethnic differences among female populations. In the current study, African Americans had the highest scores on all PCL:YV scales with the exception of the Antisocial Features facet where they were rated lower than Hispanic Americans (see Table 34). This finding is consistent with reports from studies with predominantly male populations (e.g., Skeem et al., 2004). European Americans had the lowest scores on all facets, with the exception of the Interpersonal Features facet, in which they scored higher than Hispanic Americans. African American females also reported the highest scores on the SALE-11 item scale. In contrast, Hispanic American females had the highest scores on the APSD, while African American females reported the lowest scores.

Correlates of Adolescent Psychopathy

Farrington (2005) and Rutter (2005) have criticized the current research literature concerning dimensions of psychopathy in youth for having focused too much on risk assessment and not enough on clinical, developmental, or other correlates. Unfortunately, this relatively myopic focus has isolated the child/adolescent psychopathy literature from the broader literature concerning juvenile delinquency. Despite these criticisms, some important progress has been made. Early studies (Frick, 1998b; Frick & Loney, 1999; Lynam, 1998; Mailloux, Forth, & Kroner, 1997; Salekin, Rogers, & Machin, 2001) focused on examining the characteristics of juvenile psychopathy, as they are conceptualized in adults, have established a relationship between features of psychopathy (i.e., callous unemotional traits) and behavior difficulties including aggressive and antisocial behavior, and impulsivity. For example, Lynam (1998) reported early childhood features of impulsivity are predictive of ongoing childhood behavior problems. Additionally, poor anger controls are currently included as a component of the current conceptualization and assessment of psychopathy (Forth et al., 2003; Hare, 2003) but have been largely ignored in the empirical literature (for a review see Steuerwald & Kosson, 2000; Jackson et. al., 2007). Strengths of the current study include the relationship between psychopathy measures and related constructs (e.g., anger and impulsivity), external criteria (e.g., histories of prior contact with law enforcement) and self-reported social/ behavioral problems.

Adolescent Psychopathy and Anger

The construct of anger, particularly problematic anger expression, has become a defining feature of the modern conceptualization of psychopathy. However, the traditional conceptualization of psychopathy (Cleckley, 1941/1976) presents a different picture of the

psychopath as having a lack of intense negative/reactive affect and rather portrays the aggressive behavior of the psychopath in terms of premeditated or instrumental violence. Conceptually, anger has been identified as a precursor to aggressive behavior (Monahan, Steadman, Silver, Appelbaum, Robbins, Molvey, et al., 2001) and high levels of trait anger have generally been identified among partner assaultive men (for a review, see Norlander & Eckhardt, 2005). More specifically, moderate to severe batterer subtypes are associated with higher levels of psychopathy (Holtzworth-Munroe, Meehan, Herron, Rehman, & Stuart, 2000), and exhibit the highest levels of anger and hostility (Norlander & Eckhardt, 2005). Jackson et al. (2007) recently noted the limited attention the relationship between psychopathy and anger has received in the empirical literature (for a review, see Steuerwald & Kosson, 2000). This lack of focus is not unexpected as a recent review (Eckhardt, Norlander, & Deffenbacher, 2004) of the assessment of the constructs of anger and hostility, found that research concerning these constructs generally lags that of other emotional variables in the broader research literature.

Studies of adult populations (Hall, Benning, & Patrick, 2004; Jackson et al., 2007; Hicks & Patrick, 1996; Patrick, 1994) have identified a strong relationship between anger and psychopathy, particularly Factor 2. Among adults, Patrick (1994) initially reported a positive association between Factor 2 and anger. Hall et al. (2004) then examined the relationship between emotional experiences and the construct of psychopathy as assessed by the PCL: R, and reported that anger was uniquely related to the Lifestyle factor of psychopathy. Subsequent examination by Hicks and Patrick (2006), using more advanced statistical analysis demonstrated that anger was actually related with both factors but was suppressed in F1 when considered in F2. The current investigation supports a relationship between psychopathy and anger. Overall, higher levels of psychopathy were associated with more chronic, frequent, and intense feelings

of anger (Trait Anger Scale/Trait Anger-Angry Temperament subscale), lower efforts to prevent the outward expression of anger (Anger Control-Out) and to suppress angry feelings by calming down (Anger Control-In), resulting in an increased maladaptive expression of anger (Anger Expression Index). This combination of high levels of trait anger, increased anger expression, and decreased anger control, is related to maladaptive behaviors (e.g. aggression; see Deffenbacher, Oetting, Thwaites, Lynch, Baker, Thacker, et al. (1996) and is frequently the focus of therapeutic interventions (i.e., anger management). More focused examination of the relationship between psychopathy and anger has found a moderating relationship based on ethnicity. Using the PCL: SV, Jackson et al (2007) examined the relationship between anger and facets of psychopathy and found some differences based on ethnicity (i.e., African American and European American) however, the strongest relationship for both groups was demonstrated between anger and the Antisocial Features facet.

The construct of anger has been included as an important feature of the modern conceptualization/assessment of psychopathy (Forth et al., 2003; Hare, 2003). As problematic anger control is included as an item comprising the ratings of antisocial features facet of the PCL:YV, measures of anger should demonstrate a strong relationship with the Antisocial Features facet of the PCL:YV. Using the PCL:SV, Jackson et al. (2007) reported the highest correlations, which were moderate in size, between anger and the Antisocial Features, in a sample of male inmates. Other investigations (Hicks & Patrick, 2006 and Patrick, 1994) have also identified strong relationships between anger and the Lifestyle and Antisocial Features facets of the PCL:YV and Factor 2 of the APSD. The current study identified strong relationships between trait anger and all scales of psychopathy, with the exception of the Interpersonal Features facet of the PCL:YV. Overall the lifestyle and antisocial features of

psychopathy demonstrated the strongest and most consistent relationship with measures of anger, which is consistent with the studies reviewed in this section. Interestingly, the Affective Features of the PCL:YV demonstrate small correlations with several scales and was uniquely related to a tendency to react to others in an angry manner and to the inward expression of anger. Self report measures, in particular the APSD, produced higher correlations between anger constructs and psychopathy scales than the PCL:YV, with generally stronger relationships on Factor 2.

Interestingly, the current study found that decreased anger controls were the only dimensions of anger associated with increased involvement with the juvenile justice system (prior offenses and referrals to detention). Using the Articulated Thoughts in Simulated Situations paradigm, DiLiberto, Katz, Beauchamp, and Howells (2002) reported a significant relationship between aggressive verbalizations and decreased anger control, but not trait levels of anger. These findings suggest that programs which assist juveniles in improving their ability to manage the expression of anger, may serve to reduce juvenile justice system involvement. However, the current study did not find that higher levels of trait anger were associated with prior involvement with the juvenile justice system, but did demonstrate a positive relationship between nearly all dimensions of anger and self-reported problems and problem severity.

Impulsivity, Adolescent Psychopathy, and Delinquency

Impulsivity has also long been a central feature in the conceptualization of psychopathy and plays an important role in current methods of assessment. Researchers have reported a direct relationship between impulsivity and psychopathy (Hall et al., 2004; Hart & Dempster, 1997) and among youth, the presence of multiple risk factors, such as attention problems and behavioral impulsivity, has been associated with an increased risk for antisocial behavior (Frick,

1998; Lynam, 1996, 1998; Vitacco, Neumann, Robertson, and Durrant (2002) and conduct problems (Stanford, Ebner, Patton, & Williams, 1994). Jordan (2004) also found adolescent offenders, assessed at the lowest level (i.e., level 0) of an institutional rehabilitation program, reported significantly more problems with impulsivity than offenders in the highest level (i.e., level 4).

In the current study, all scales of the BIS-11 were shown to be positively correlated with self-reported measures of psychopathy. These scores reflect those of Lynam (1998) and Vitacco and Rogers (2001), who also reported a substantive relationship between impulsivity and psychopathy in both community samples and incarcerated youth. Concerning the PCL:YV, only the Affective Features facet was significantly related to the BIS-11 Total Score and Non-Planning subscale. Given that impulsivity is a central feature of the Lifestyle facet of the PCL:YV, the small and nonsignificant relationships is surprising. This finding contrasts results from Hall et al.'s (2004) sample of adult offenders, where features of impulsivity were uniquely related to the Lifestyle facet.

Researchers have examined the influence of ethnicity and gender on relationships between impulsivity and psychopathy. Jackson and colleagues (2007) reported European Americans demonstrated stronger relationships, as compared to African Americans. Results from this study also found that European Americans had the highest level of overall impulsivity as compared to both Hispanic American and African American youth. Further examination of differences in impulsivity by gender found that females scored moderately higher than males with European American females reported the highest levels of impulsivity as compared to all other groups.

Impulsivity has been identified as risk factor for antisocial behavior (Frick, 1998; Lynam,

1996, 1998; Vitacco et al., 2002). In the current study impulsivity was not meaningfully related to prior referrals to juvenile probation and only the BIS-11 Attention subscale was significantly correlated with increased numbers of previous placements in juvenile detention. These findings counter several studies reporting a relationship between impulsivity and antisocial behavior in community (Frick, O'Brien, Wootton, & McBurnett, 1994; Lynam, 1996, 1998; Marsee, Silverthorn, & Frick, 2005) and incarcerated (Vitacco et al., 2002; Vitacco and Rogers, 2001) samples. Perhaps most relevant are studies by Frick and colleagues (e.g. Frick et al., 1994; Frick & Marsee, 2006) that examined community populations of clinic-referred and non-referred youth and found a strong relationship between impulsivity and delinquent behavior. Possible explanations for differences in results are related to different ages of the samples and methods of measurement. The current study included an older adolescent sample, used a self-report measure of impulsivity and delinquency was operationalized as official contacts with the juvenile justice system. In contrast, Frick and colleagues (1994) examined parent reports of impulsivity and delinquency in a sample of elementary and early middle school aged children. The 2005 study by Marsee and colleagues used middle school aged children, self and teacher reports of impulsivity, and a self-reported measure of delinquency. Of note in the current study was the significant relationship between impulsivity and self-reported problems and problem severity, which reflects the results and methods reported by Marsee et al. (2005).

Adolescent Psychopathy, Delinquency, and Self-Reported Problems

A primary motivation for the examination of psychopathy in adolescent populations was to identify youth at risk for engaging in chronic and severe antisocial behavior. Indeed psychopathic features in youth have been universally related to self-reported aggression and

conduct problems (Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick, Cornell, Barry, Bodin, & Dane, 2003a), community violence and antisocial behavior (Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005; Gretton, Hare, & Catchpole., 2004), and institutional violence (Murrie, Cornell, Kaplan, McConville, & Levy Elkon, 2004; Stafford & Cornell, 2003). The current study supports these findings as increased levels of psychopathy were associated with prior histories of involvement with the juvenile justice system (prior offenses and referrals to detention) and the number and severity of self-reported problems. However, notable gender differences were observed and will be discussed below.

In the current study, the relationship between psychopathy, juvenile justice system involvement, and self-reported problems and problem severity were more consistent for females than males. Among females, increased levels of psychopathy (i.e., all scales of the APSD and PCL:YV) were associated with increased numbers of court referrals, placements in detention, self-reported problems and problems severity. Examining a sample of non-referred middle school students, Frick et al. (2005) also reported that psychopathy was related with self-reported delinquent behavior and that females reported stronger relationships between features of psychopathy and both violent and nonviolent forms of delinquency, as compared to boys.

Psychopathy and Motivation to Change

Researchers have suggested that increased levels of psychopathy are associated with a decreased motivation for treatment in adult forensic offenders (Ogloff, Wong, & Greenwood, 1990) and poor response to standard treatment among juvenile populations (Forth & Mailloux, 2000). Hemphill and Hart (2002) proposed psychopathy specific motivational deficits and suggested specific therapeutic processes a psychopathic offender must utilize in order to change

their behavior. The ability to examine the utility of a treatment program requires methods to measure and assess therapeutic change. Therapeutic change has been conceptualized and evaluated through both outcome (repeated measures) and process methods. The TTM, comprised of levels, processes, and stages of change provides an alternative perspective for defining and assessing therapeutic change (Prochaska & Norcross, 2003).

Prochaska and Norcross (2003) describe the stages of change as dimensions of an individual's attitudes, intentions, and actions related to changing a behavior. The four stages, as assessed by the SOCS, are temporal and identify an individuals readiness to change as ranging from a lack of intention to change behavior (Precontemplation Stage) to working to maintain significant treatment gains and prevent relapse (Maintenance Stage). In between are scales assessing cognitive preparation to change (Contemplation Stage) and early behavioral indicators of change (Action Stage). Only recently has the TTM been applied to adult populations of domestic violence (Levesque, Velicer, Castle, & Greene, 2008) and sex offender (Tierney & McCabe, 2004) populations and incarcerated juvenile offenders (Hemphill & Howell, 2002; Jordan, 2004). To date no studies have presented data concerning the relationships between motivation to change and levels of psychopathy.

Conceptually, increased levels of psychopathy should be associated positively with attitudes resistant to treatment and negatively with indicators of engaging positively in the treatment process (Hemphill & Howell, 2002). This postulation has yet to be supported in the research literature as Eckhardt, Holtzworth-Munroe, Norlander, Sibley, Togun, and Cahill (in press) reported the most troubled/antisocial participants report similar levels of treatment resistant attitudes as less violent, more socially adjusted men, and high degrees of action in

making and maintaining behavior change. The results of the current study reflect those of Eckhardt and colleagues.

In the current study, limited relationships between attitudes resistant to treatment and psychopathy were identified. The lone exception was a significant and positive correlation with psychopathy as measured only by the SALE-11 item scale. It seems the SALE, designed as a measure of attitudes and beliefs associated with psychopathy, may be uniquely related to negative attitudes towards treatment. Consistent with Eckhardt et al. (in press), youth reported higher levels of psychopathy reported increased attitudes and actions indicating a self-perceived engagement in the treatment process.

The current study did not incorporate a measure of social desirability so it is possible response biases impacted SOCS scores. However, several studies have failed to identify an influence of response style, or impression management, on SOCS scales (Eckhardt et al., in press; Hemphill & Howell, 2000; Jordan, 2004). The relationship between psychopathy and motivation to change behavior may have also been impacted by relatively low levels of psychopathy consisting primarily of the impulsive/antisocial behavior dimensions.

Treatment of Juvenile Psychopathy

The historical perspective regarding treatment amenability and psychopathy suggests that, at best, psychopathic individuals are not responsive to treatment or, at worst, become more skilled and manipulative in response to receiving clinical interventions. While anecdotal evidence abounds, the empirical literature referenced to support these claims is limited by methodological problems (Salekin, 2002). Similarly, the empirical literature suggesting the potential for improvement in youth with psychopathic traits is also methodologically flawed by

small sample sizes, lack of comparison groups, limited measures of treatment outcome, and non-randomized assignment of comparison groups (Salekin, 2002). Clinicians working with youth have indicated psychopathy-related characteristics are more responsive to treatment in this population as compared to adults (Salekin et al., 2001). Certainly the difficulties associated with intervention efforts among severe psychopaths should not be underestimated; however, research has shown that high PCL scorers are a heterogeneous group with a significant proportion who do not demonstrate significant antisocial behavior during or after incarceration (Salekin, Rogers, Ustad, & Sewell, 1998).

Several meta-analyses of adult and juvenile offenders have reported substantive positive treatment effects in a variety of settings (Lipsey, Chapman, & Landenberger, 2001; Landenberger & Lipsey, 2005; Pearson, Lipton, Cleland, & Yee, 2002; Wilson, Bouffard, & MacKenzie, 2005). The most recent and comprehensive empirical review by Lipsey and Landenberger (2005) found that effects of CBT were greater for offenders with higher risk of recidivism than those with lower risk, contrary to any presumption that higher risk offenders (more likely to demonstrate psychopathic characteristics) might be less amenable to treatment. Despite these findings, higher levels of adolescent psychopathy have been associated with increased rates of treatment drop-out in response to standard treatment and problematic institutional behavior (Falkenbach, Poythress, & Heide, 2003; O'Neill, Lidz, & Heilbrun, 2003; Rogers, Johansen, Chang, & Salekin, 1997; Spain et al., 2004).

In the last ten years, more rigorous investigations have been conducted examining the relationship between psychopathy and treatment amenability (Caldwell, Vitacco, & Van Rybroek, 2006; Caldwell, McCormick, Umstead, & Van Rybroek, 2007a; Caldwell, Skeem, Salekin, & Van Rybroek, 2007b). These studies have reported that individuals with pronounced

psychopathic traits respond to sufficient doses of treatment by becoming less violent and antisocial (Caldwell et al., 2007a; Salekin et al., 2001; Skeem, Monahan, & Mulvey, 2002). The current investigation represents the first attempt to directly assess the responsiveness of features of psychopathy to a targeted CBT program. The treatment program did not demonstrate significant reductions in overall levels of psychopathy in all participants. However, several promising findings regarding decreased levels of psychopathy and clinical correlates were identified. In addition the treatment program demonstrated an increased motivation to change among its participants as well as decreased risk of later involvement with the juvenile justice system. These results suggest further development and assessment of treatment programs designed to reduce dimensions of psychopathy in at-risk youth is warranted.

Levels of Psychopathy

To date no studies have focused on the response of adolescent psychopathy to focused treatments. Rogers, Jackson, Sewell, and Johansen (2004) reported that approximately 25.0 percent of a sample of dually diagnosed adolescent offenders experienced a substantial decrease (d = .51) in psychopathic characteristics in response to a generic treatment program. Using a nontreatment control group, the current research/treatment program produced some small (ds range from .05 to .37) but potentially meaningful reductions in levels of psychopathy. Some variability between measures was identified when group comparisons were made based on gender. Effect size comparisons demonstrated a more positive response on the PCL:YV for males and on the APSD for females.

More focused examination of the effect of treatment for participants with higher levels of psychopathy (as assessed by the PCL:YV), found small to moderate reductions across

dimensions (PCL:YV Total Score d = .25). The most substantive differences were observed on the Interpersonal (d = .55) and Affective Features (d = .24) facets. Reductions of overall levels of psychopathy for nontreatment controls was slightly lower in magnitude (d = .45), but still comparable to that reported by Rogers et al. (2004; d = .51). The results of this study, indicate treatment had positive impact in reducing levels of psychopathy. While limited due to differences in levels of psychopathy, the results of this study counter the conclusions of earlier studies with adults that suggest psychopathy is associated with a poor response to treatment (Ogloff, et al., 1990). Additionally, these findings raise questions about previous conclusions that therapy is contraindicated for individuals presenting with high levels of psychopathy (Hare, 1993; Harris, Rice, & Cormier, 1991, 1994; Rice, Harris, & Cormier, 1992).

Overall, the findings of the current study provide support for continued development and investigation of the utility of psychologically based interventions focused on the reduction of features of psychopathy in at-risk youth. While reporting from a small sample size resulting in a lack of statistically significant results, effect size comparisons indicate promising results from a limited duration of treatment (8 weeks, 18 1.5 hour sessions). Other researchers suggest intensive treatments, with frequent sessions across long periods of time, are most likely to produce positive behavioral outcomes (Caldwell et al. 2007a; Gretton et al., 2004; Salekin, 2002). In a review of treatment studies on psychopathy (Salekin, 2002) reported the most effective interventions averaged four weekly individual sessions for at least a period of a year. Efforts to provide significant doses of interventions targeting features of psychopathy, is likely to produce robust treatment effects. Further examination of gender issues, focusing on potentially different treatment modalities, may also prove to be beneficial.

Levels of Impulsivity

The construct of impulsivity has been considered a central feature of psychopathy and has been associated with conduct problems in youth (Christian et al., 1997; Lynam, 1997; Vitacco et al., 2002). The treatment program specifically targeted features of impulsivity and, in a relatively short period of time, produced significant differences in scores between groups. Similar to differences found with the PCL:YV, impulsivity scores for all BIS-11 scales were observed to decrease for treatment group participants and increase for comparison group participants. Overall, treatment group participant scores decreased, while comparison group participant scores increased, on all BIS-11 scales (*d*s range from .45 to .66 for the male population and .18 to 1.51 for the female population). This finding is significant because increased levels of impulsivity have been reported to be predictive of increased psychological problems, days in detention, and antisocial behavior (Vitacco et al. 2002). Thus, the ability to reduce levels of impulsivity is likely a key component of overall increased treatment response of youth presenting with high levels of psychopathy.

Levels of Trait Anger and Anger Expression

Anger management programs are a relatively common mode of intervention and cognitive-behavioral therapies have been shown to be useful treatments for anger-related problems in youth (Sukhodolsky, Kassinove, & Gorman, 2004). While poor anger control is a central feature of the modern conceptualization and assessment of psychopathy, the construct has received relatively little empirical attention in the assessment literature and even less in the treatment literature. A component of the treatment program designed for the current study incorporated Stress Inoculation Therapy techniques to target targeted participants' experiences

and expressions of anger. Treatment group participants reported a statistically significant and moderate reduction in the suppression of angry feelings as compared to the Comparison Group (d =.50). This effect size is smaller than the meta-analytic treatment effect size (d = .67) reported by Sukhodolsky et al. (2005). It should be noted the meta-analysis also reported a negative relationship between the overall effect size and percentage of males in the sample (r = -.44). With this in mind the reduction of the inward expression of anger was comparable.

Motivation to Change

Researchers have suggested that increased levels of psychopathy are associated with a decreased motivation for treatment in adult forensic offenders (Ogloff, et al., 1990) and poor response to standard treatment among juvenile populations (Forth & Mailloux, 2000). Only two studies to date have examined the stages of change with adolescent offenders (Hemphill & Howell, 2000; Jordan, 2004). In terms of assessing treatment progress, Hemphill and Howell (2000) reported that positive movement through the stages of change was related to identifying goals, solving problems, and self-monitoring/regulation. However, Jordan (2004) reported that treatment attitudes did not differentiate participants assessed at different levels of an institutional rehabilitation program. The current study is the first to examine psychopathy and the affects of a treatment program on motivation toward treatment in a population of at-risk youth.

Overall, the treatment program had a positive but small impact on participant motivation for treatment (d = .29). Treatment program participants reported increased attitudes and actions indicating improved levels of engagement in the treatment process (i.e. Contemplation, Action, and Maintenance) were observed (ds range from .24 to .43). More focused examination of the affect of the treatment program in youth with higher levels of psychopathy identified positive

affects. Treatment group participants report of treatment motivation increased, while scores of the comparison group decreased, producing a large effect (d = .87). This increase in the index score was the result of moderate to large changes on all SOCS scales. These scores contrast those reported by Tierney and McCabe (2004), who reported slight increases in Precontemplation mean scores and slight decreases on all other scales, among adult male incarcerated child sex offenders, in response to offense specific treatment. Differences between populations (e.g., age, setting, offense, type of treatment) may account for differences between these studies.

In the current study, youth identified as having lower levels of psychopathy, regardless of condition, were observed to have decreased motivation for treatment. In some respects, these patterns reflect those reported by Eckhardt et al. (in press) in a population of men mandated by the court to attend a Batterer Intervention Programs. Participants presenting with the lowest scores on measures of antisocial behavior, demonstrated the least movement through the stages of change. The results of both studies may be expected as individuals reporting relatively low levels of antisocial behavior may not perceive a need to make any behavioral changes.

Treatment Process Behavior and Outcomes

Researchers have identified a significant relationship between levels of psychopathy and problematic behavior while in institutions and criminal recidivism. As a parallel, this study examined behavioral indicators both during treatment and after a brief follow up period. Additionally changes in self-reported problems between pretreatment and post-treatment assessments were also examined. Overall, the treatment program had a positive impact on behavior both during and after treatment. During the treatment period, comparison group participants were significantly more likely to be charged with a new offense, and while not

significant, were also more likely to be referred to the juvenile detention center (d = .30), than treatment group participants. During the follow up period, comparison group participants were again significantly more likely to be charged with a new offense and to spend more days in the JJAEP disciplinary program. Interestingly, the treatment program participants received more incident reports (d = -.39, p =.13) but demonstrated improved overall program performance (Average Points Earned; d = .19). While overall presenting with much lower levels of psychopathy, these scores reflect findings by Caldwell et al. (2007b) who reported significant reductions in institutional behavior problems, decreased periods of confinement, and reduced rates of recidivism for youth participating in an intensive residential treatment program. initial but slight reduction of facets of psychopathy in youth with higher PCL:YV scores.

Contagion Effects

Researchers have identified that aggregating delinquent youth increases delinquency (for reviews see Dodge, Dishion, & Lansford, 2006; Gifford-Smith, Dodge, Dishion, & McCord, 2005) and minimizes intervention efforts (e.g., Mager, Milich, Harris, & Howard, 2005). Peer contagion effects have also been shown to undermine, or limit the benefits of prevention efforts. Results from the current study provide additional support for this position as participants with lower levels of psychopathy, in both groups, demonstrated increased PCL:YV total scores at posttest. It appears the routine removal of at-risk youth may have the unintended consequence of increasing psychopathic traits. Interestingly, treatment group participants demonstrated a smaller increase in psychopathy scores (d = .68, p = .10), suggesting this targeted treatment program may have served as a protective factor for lower psychopathy youth.

Methodological Considerations

Study Strengths

This study has strengths in terms of research design, population, assessment, and treatment. It represents a systematic effort to assess the utility of a cognitive behavioral group treatment program designed for the reduction of levels of facets of psychopathy in at-risk youth. The treatment modules were tailored to the setting and population using experiential methods and inductive reasoning strategies to convey concepts. It is one of the only studies to incorporate a randomly assigned usual-care comparison group and utilized multiple measures of psychopathy (self-report and interview) at pretest and posttest periods. In addition, the study sought to expand upon the adolescent psychopathy literature by over-sampling female and ethnic minority populations.

Additional strengths regarding the assessment of psychopathy include the examination of the psychometric properties of PCL:YV item subcriteria. In addition to using multiple measures for the assessment of psychopathy, it is one of the few to examine the relationship between psychopathy and the conceptually significant construct of anger. In addition, a measure of impulsivity was also included for the assessment of the utility of the treatment program. The treatment program was successful in demonstrating utility in reducing features of anger and impulsivity. In addition to commonly reported treatment outcomes, this is the first study to examine the influence of treatment on motivation for treatment as conceptualized by the TTM's stages of change. It is also the first study to examine the relationships between the stages of change and adolescent psychopathy. The study also examined outcomes using behavioral indicators both during treatment and for a brief follow up time period.

The treatment program and setting reported in this study are vastly different from the

institutionalized correctional facilities or residential treatment centers discussed in recent studies of adolescent psychopathy and treatment outcomes (Falkenbach et al., 2003; O'Neill et al., 2003; Rogers et al., 1997; Spain et al., 2004, Caldwell et al., 2006; 2007a). Youth in this study were attending a coed Juvenile Justice Alternative Education Program as terms of their placement on juvenile probation or due to chronic behavior problems at their local independent school district. The treatment program was implemented in the context of the JJAEP's daily schedule.

Limitations

Despite the previously identified strengths, conclusions drawn from the results examining the effectiveness of the treatment program are limited by difficulties implementing research design and sample characteristics. Concerning research design, perhaps most important was the limitation in controlling the masked assessment of all youth at posttest. Generally speaking due to limited number of resources, the post-test PCL:YV administration was not masked to group membership. Additionally, limitations in resources and unexpected release of youth from the program also required several posttest administrations of 8 PCL:YV post-test interviews, of treatment group participants, by treatment group therapists. However, analyses indicated these assessments did not differ significantly from others conducted according to the research design.

Another limitation in research design was the brief follow-up assessment time period, restricting the ability to assess long-term outcomes. The study also did not include follow up administration of self-report or interview measures, which would have allowed for an extended examination of treatment gains. The study also did utilize a measure of response styles and cannot assess the degree to which participants may have utilized response biases. This latter

omission limits the ability to draw firm conclusions regarding the information reported by youth in the study, and future treatment trials should seek to control for impression management.

Concerning limitations of the sample population, the treatment and comparison group sample sizes were also smaller than desired. Additional trials, involving more participants, could have resulted in a more evenly matched demographic sample between groups, and would allowed greater selectivity of youth with higher levels of psychopathy. The youth in this study also had relatively lower levels of psychopathy, as measured by the PCL:YV, when compared to reports of other populations in other studies. Therefore, treatment program results may have limited generalizability to youth presenting with more severe features of psychopathic traits. However, comparisons of participants presenting with higher levels of psychopathy in the current study demonstrated some comparability with previous studies. The lower level of psychopathy amongst group participants may have an impact on the process of treatment as compared to a group comprised of members measured to have generally average levels of psychopathy in incarcerated populations. The treatment subgroups were also observed to differ in number of sessions attended and to in pretreatment levels of psychopathy (i.e., PCL:YV Total Scores) and motivation for treatment (i.e., SOCS Readiness to Change Index Score). The treatment program was conducted with both male and female participants, which may have impacted the process of treatment (Linehan, 1993). There were also some significant differences between the treatment and comparison groups in terms of ethnic composition, particularly for the female population.

Future Directions

Despite progress, surprisingly little is still know regarding the etiology of serious juvenile

delinquency, its assessment, prediction, and treatment. Substantive questions still remain regarding these issues with female and ethnic minority populations and continued research in the areas of the assessment and treatment of psychopathy is warranted.

Assessment of Adolescent Psychopathy, Clinical Correlates, and Motivation for Treatment

The current study did little to assuage Farrington's (2005) concerns regarding low correlations between psychopathy measures. Limitations of the psychopathy measures used in the current study indicate the ongoing development of psychopathy measures is warranted. Additionally, continued examination of the relationships between psychopathy and other personality traits and external traits/features/behaviors is essential.

This study was the first to assess the relationship between psychopathy and the constructs of anger and motivation for treatment. Strong relationships were observed between psychopathy and both trait anger and anger expression. Continued examination of the anger construct, as a potential risk factor for delinquency and development of psychopathic traits is warranted. The current study also examined the relationship between psychopathy and motivation for treatment. The ongoing assessment of motivational aspects of psychopathy and treatment will be pivotal in future investigations of the responsivity of psychopathy to treatment interventions and the development of specialized treatment models to match the features/motivations of adolescent psychopathy.

Treatment

This is the first study to report data concerning the utility of a brief CBT intervention targeting dimensions of psychopathy in at-risk youth. Positive results regarding the reduction of

levels of psychopathy, improved anger expression, decreased impulsivity, improved motivation for treatment, and post-treatment outcomes indicate that further development and examination of focused prevention/treatment intervention modalities is warranted. The improvements observed in this sample as the result of this brief intervention indicate that more intensive targeted treatment modalities are likely to produce robust treatment effects.

Summary

The construct of psychopathy, as applied to both adults and more recently adolescent populations, has been associated with increased levels of aggression, poor adjustment during institutionalization, and negative treatment outcomes (e.g., increased rates of recidivism). Historically, the construct of psychopathy has been considered a chronic and pervasive set of personality traits which are difficult, if not impossible to treat. Application of this construct to juvenile populations may result in denying juveniles access to effective rehabilitation resources.

To date, no reports of studies, using sound research designs, have examined the utility of psychological interventions that target the reduction of dimensions of psychopathy. The vast majority of the literature regarding the treatment amenability of youth, with high levels of psychopathic traits, has focused on how these individuals progress through institutional rehabilitative treatment programs and how high levels of psychopathy relate to post treatment outcomes. Recent studies of incarcerated adolescents (Caldwell et al., 2006, 2007) have more thoroughly examined the impact of high levels of psychopathy on behavior during the treatment process and long term treatment outcomes. Results were encouraging as youth with high levels of psychopathy that received intensive treatment, were significantly less likely to recidivate violently as compared to the usual-care comparison group.

This study evaluated the development and utility of a CBT treatment program, targeting the facets of psychopathy, in at-risk youth. While the study did not find significant reductions in levels of psychopathy, effect size comparisons indicate the treatment group demonstrated small to moderate, clinically relevant reductions on the Interpersonal and Affective facets of the PCL:YV. Collateral assessment of clinical correlates of psychopathy indicates the treatment program was effective in reducing levels of impulsivity and the suppression of anger. Treatment program youth with higher levels of psychopathy reported significant increases in their readiness to change their problematic behavior, as compared to all other groups (higher psychopathy comparison group, and lower psychopathy comparison/ treatment groups). Conceptually, the treatment program was successful in helping youth with higher levels of psychopathy realize they have significant problems and begin to work towards changing them.

In summary, this study provides an initial empirical foundation for the ongoing development of targeted interventions for youth demonstrating psychopathic traits. Certainly limitations in the treatment program, research design, and results constrain the ability to make definitive judgments, but clearly it appears that some features of psychopathy in at-risk, pre-incarcerated youth are responsive to treatment. Ongoing development of targeted treatment programs and systematic research of their utility in reducing facets of psychopathy should continue in both community and institutionalized juvenile offender populations.

APPENDIX A

RESEARCH ASSENT AND PARENTAL CONSENT FORMS

UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
RESEARCH ASSENT FORM
Learning Self-Control : A Cognitive-Behavioral Approach

Subject Name:_____ Date: _____
Title of Study: CBT Treatment for At-Risk Adolescents
Principal Investigators: Richard Rogers, Ph.D. and Kenneth W. Sewell, Ph.D.

Before agreeing to the study, it is important that you understand it. This form describes the procedures and benefits, as well as potential risks and discomforts of the study. It also describes other options that are available to you. It is important for you to understand that no promises can be made as to the results of the study.

Purpose of the Study and How Long it Will Last:
This study examines the use of cognitive-behavioral methods in helping adolescents to reduce their risky behaviors. "Cognitive-behavioral" is a term to describe how we think ("cognitive") and act ("behavioral"). The study will last approximately 8 weeks.

Description of the Study Including the Procedures to Be Used:
To understand how these methods might help you, you will be interviewed at the beginning and end of the study and be asked to complete simple questionnaires. You will then be randomly assigned to either a "control" or "treatment" condition. In the "control" condition, you will participate in the usual JJAEP programs. In the "treatment" condition, you will take part in groups that meet two to three times a week during school hours. These groups are focused on your thoughts (cognitive) and actions (behavioral) that sometimes get you into trouble at home, school, or with the law.

Description of Procedures/Elements That May Result in Discomfort or Inconvenience:
This program uses well-known methods that cause little or no discomfort. Sometimes, while learning about and changing yourself, participants occasionally feel passing discomfort. If you experience anything like this for more than a few minutes, please let the group leader know and they will assist you.

Description of the Procedures/Elements That Are Associated with Foreseeable Risks:
You will be asked to remember situations where your impulses got the best of you. You will then learn other ways to deal with these situations to avoid getting into trouble. Occasionally, participants feel mild discomfort when remembering past problems. However, these feelings are typically replaced with positive feelings as you learn different ways to deal with your impulses.

Benefits to the Subjects or Others:
You will likely develop insights into your behavior as a result of the assessments. If you are in the treatment condition, you will likely learn methods of avoiding impulsive behaviors and how to avoid being tempted by risky situations.

Confidentiality of Research Records:
Your research materials will be kept in a locked research room; they will only identify you by your first name and an assigned research number. Computer files that researchers use will only use these numbers. Any scientific publications or research presentations will only talk about groups of participants. No individual participant will be identified. Your records will be kept confidential within the limits of the law. We are required by law to report any credible account of child abuse.

Review for Protection of Participants:

This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940.

RESEARCH SUBJECTS' RIGHTS: I have read or have had read to me all of the above.

_____ has explained the study to me and answered all of my questions. I have been told the benefits and possible risks or discomforts of the study. I have been told of other choices of treatment available to me.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw at any time without penalty or loss of benefits to which I am entitled. The study personnel can stop my participation at any time if it appears to be harmful to me, if I fail to follow directions for participation in the study, if it is discovered that I do not meet the study requirements, or if the study is canceled.

In case there are problems or questions, I have been told I can call Dr. Kenneth Sewell or Dr. Richard Rogers at telephone number (940) 565-2671.

I understand my rights as a research subject, and I voluntarily assent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

_____ _____

Subject's Signature Date

_____ _____

Signature of Witness Date

For the Investigator or Designee:

I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known benefits and risks of the research.

_____ _____

Designee's Signature Date

UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS
PARENTAL CONSENT FORM
Learning Self-Control : A Cognitive-Behavioral Approach

Subject Name:_____ Date: _____
Title of Study: CBT Treatment of At-Risk Adolescents
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Purpose of the Study and How Long it Will Last:
This study examines the use of cognitive-behavioral methods in helping adolescents to reduce their risky behaviors. "Cognitive-behavioral" is a term to describe how we think ("cognitive") and act ("behavioral"). The study will last approximately 8 weeks.

Description of the Study Including the Procedures to Be Used:
To understand how these methods might help your adolescent, he or she will be interviewed at the beginning and end of the study and asked to complete simple questionnaires. Once the first set of questionnaires is complete, he or she will be randomly assigned to either a "control" or "treatment" condition. In the "control" condition, your adolescent will take part in groups that meet two to three times a week during school hours. These groups are focused on your thoughts (cognitive) and actions (behavioral) that sometimes gets him or her into trouble at home, school, or with the law.

Description of Procedures/Elements That May Result in Discomfort or Inconvenience:
This program uses well-know methods that cause little to no discomfort. Part of learning and changing is that participants occasionally feel passing discomfort. If this persists for more than a few minutes, your adolescent should let the leader know.

Description of the Procedures/Elements That Are Associated with Foreseeable Risks:
Your adolescent will be asked to remember situations where their impulses got the best of him or her. Your adolescent will then learn other ways to deal with these situations to avoid getting into trouble. Occasionally, participants feel momentary discomfort when remembering past problems. However, these feelings are typically replaced with positive feelings as they learn different ways to deal with their impulses. There are no known risks beyond momentary discomfort.

Benefits to the Subjects or Others:
Your adolescent will likely develop insights into his or her impulsive behaviors as a result of the assessments. If selected for the treatment condition, your adolescent will likely learn methods of avoiding "triggers" to impulsive behaviors and how to avoid being tempted by risky situations.

Confidentiality of Research Records:
Your adolescent's research materials will be kept in a locked research room; they will only identify you by your first name and an assigned research number. Computer files that researchers use will only use these numbers. Any scientific publications or research presentations will only talk about groups of

participants. No individual participant will be identified. All records will be kept confidential within the limits of the law. We are required by law to report any credible account of child abuse.

Review for Protection of Participants:

This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940.

RESEARCH SUBJECTS' RIGHTS: I have read or have had read to me all of the above.

_____ has explained the study to me and answered all of my questions. I have been told the possible benefits and potential risks or discomforts of the study. I have been told of other choices of treatment available to me.

I understand that my adolescent does not have to take part in this study, and my refusal for his or her involvement will result in no penalties or loss of rights. I may withdraw consent at any time without penalty or loss of benefits for my adolescent. The study personnel can stop my adolescent's participation at any time if it appears to be harmful, if he or she fails to follow directions for participation in the study, if he or she does not meet the study requirements, or if the study is canceled.

In case there are problems or questions, I have been told I can call Dr. Kenneth Sewell or Dr. Richard Rogers at telephone number (940) 565-2671.

I understand my rights as the parent of a research subject, and I voluntarily consent to his or her participation in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

_____ _____

Parent's Signature Date

_____ _____

Signature of Witness Date

For the Investigator or Designee:

I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known benefits and risks of the research for his or her adolescent.

_____ _____

Designee's Signature Date

APPENDIX B

PARTICIPANT INVOLVEMENT FORM

Participant Involvement Form

Student Initials:_____ Age:_____Gender: male or female

Session Date:_____

Ratings: Please circle a number (1 2 3 4 or 5) to answer the following questions about this session:

1. How involved did you feel you were during this session?

Not At All		Moderately Involved		Fully Involved
1	2	3	4	5

2. How much did you enjoy this session?

Not Enjoyable At All		Moderately Enjoyable		Very Enjoyable
1	2	3	4	5

3. How much do you feel you learned this session?

Learned Nothing		Learned a Little		Learned a Lot
1	2	3	4	5

What did you learn? Please make a list.

1._____

2._____

3._____

4._____

5._____

APPENDIX C

PROBLEMS WORKSHEET

Problems Worksheet

Students at the Juvenile Justice Alternative Education Program of Denton County are referred for a variety of problems including the following:

- Possession and/or use of controlled substances.
- Possession and/or use of restricted weapons.
- Truancy.
- Conflict with peers, or school staff.

Problems

Students also have other kinds of problems. You might have problems because of things that other people do. For this worksheet, only think about things that **you** do that cause **you** problems. Look at the list below. Please place a checkmark by **at least** three items that **you think** cause the most problems in your life:

__Arguing with parents/guardians
__Arguing with peers
__Aggressive behavior toward parents/guardians
__Aggressive behavior toward peers
__Cigarette use
__Drug use (e.g.,marijuana, cocaine, etc.)
__Shoplifting/Stealing
__Breaking rules at school
__Lying
__Other (please describe):_____

__Arguing with siblings (brothers or sisters)
__Arguing with teachers or school staff
__Aggressive behavior toward siblings
__Aggressive behavior toward teachers or staff
__Alcohol use
__Other substance use (e.g.,inhalants, cold syrup)
__Breaking rules at home (e.g.,curfew,
__Speeding while driving
__Sexual behavior

Ranking Problems

Now, pick the **3 items** that you think cause you **the most problems**. Write the item that causes you the most problems on line #1. Write the item that causes you the next most problems on line #2. Write the third item on line #3.

Problem #1._____

Problem #2._____

Problem #3._____

Rating Problems

Circle the number that shows how often each item is a problem for you.

	Rarely = 1	Sometimes = 2	Frequently = 3	Always = 4
Problem #1	1	2	3	4
Problem #2	1	2	3	4
Problem #3	1	2	3	4

APPENDIX D

PERCENTAGES OF ETHNICITY AND GENDER OF TREATMENT AND COMPARISON GROUP PARTICIPANTS

	Ethnicity			
Group	European American	African American	Hispanic American	Total
Treatment group				
Male				
n	10	4	6	20
%	15.2	6.1	9.1	30.3
Female				
n	8	5	3	16
%	12.1	7.6	4.5	24.0
Comparison Group				
Male				
n	14	3	3	20
%	21.2	4.5	4.5	30.3
Female				
n	7	3	0	10
%	10.6	4.5	0.0	15.2
Total Sample	39	15	12	
	60.1	22.7	18.2	

APPENDIX E

MEANS (STANDARD DEVIATIONS) AND COMPARISONS OF TREATMENT SUBGROUPS ATTENDANCE, SESSION RATINGS, PRETEST PCL:YV TOTAL SCORES, AND PRETEST SOCS READINESS TO CHANGE INDEX SCORES

Measure		$F(4,31)$	p
Attendance		3.88	.01
Group One	15.67 (1.21)		
Group Two	17.17 (1.17)		
Group Three	15.75 (1.58)		
Group Four	15.38 (1.19)		
Group Five	17.13 (0.35)		
Total	16.19 (1.35)		
Session Ratings Average		1.01	.42
Group One	10.34 (0.54)		
Group Two	11.02 (2.79)		
Group Three	10.05 (1.16)		
Group Four	10.93 (1.75)		
Group Five	11.53 (1.09)		
Total	10.78 (1.60)		
PCL:YV Total Score		1.69	.18
Group One	8.50 (4.04)		
Group Two	14.50 (8.76)		
Group Three	10.75 (9.84)		
Group Four	14.75 (4.77)		
Group Five	7.88 (3.31)		
Total	11.25 (6.93)		
SOCS Readiness to Change Index Score		1.31	.29
Group One	39.67 (27.40)		
Group Two	46.00 (18.33)		
Group Three	60.00 (10.00)		
Group Four	60.00 (27.98)		
Group Five	60.38 (21.66)		
Total	54.36 (22.30)		

Note. Total treatment groups $n = 36$; Groups 1 and 2 $n = 6$; Groups 3-5 $n = 8$.

APPENDIX F

CORRELATIONS BETWEEN ANGER AND PSYCHOPATHY MEASURES ADMINISTERED FOR SCREENING PROCEDURES

	Psychopathy Measures								
	PCL:YV[a]					Sale 11[b]	APSD[c]		
STAXI-2	Total	F1	F2	F3	F4		Total	Factor 1	Factor 2
Trait Anger Scale	.36*	.16	.32*	.36**	.37**	.37**	.58**	.40**	.57**
Angry Temperament	.36**	.13	.26*	.39**	.40**	.32**	.50**	.38**	.47**
Angry Reaction	.21	.10	.26*	.16	.16	.30**	.48**	.26**	.51**
Anger Control In	-.41**	-.26*	-.30**	-.44**	-.38**	-.36**	-.45**	-.46**	-.37**
Anger Control Out	-.42**	-.23*	-.34**	-.41**	-.41**	-.40**	-.53**	-.42**	-.47**
Anger Expression In	.15	.07	.28*	.07	.13	.18**	.28**	.17**	.26**
Anger Expression Out	.16	.07	.12	.12	.19	.31**	.53**	.32**	.53**
Anger Expression Index	.44**	.24*	.40**	.40**	.42**	.44**	.61**	.47**	.56**

[a] *n* = 83. [b] *n* varies from 236 to 249. [c] *n* varies from 241 to 256. * p < .05. ** p < .01. STAXI-2 = State Trait Anger Expression

Inventory-Second Edition. F1 = Interpersonal, F2 = Affective, F3 = Lifestyle, F4 = Antisocial.

APPENDIX G

CORRELATIONS BETWEEN PRETEST PSYCHOPATHY MEASURES AND IMPULSIVITY

	Measures								
	PCL:YV[a]					Sale 11[b]	APSD[c]		
BIS-11	Total	F1	F2	F3	F4		Total	Factor 1	Factor 2
Total Score	.19	.10	.26*	.13	.13`	.41**	.70**	.51**	.65**
Non-Planning	.16	.07	.29*	.17	.08	.24**	.49**	.44**	.39**
Attention	.09	-.00	.12	.10	.06	.40**	.54**	.35**	.54**
Motor	.16	.15	.20	.01	.13	.32**	.60**	.39**	.59**

[a] *n* varies from 81 to 83. [b] *n* varies from 185 to 192. [c] *n* varies from 190 to 200. ** $p < 0.01$. * $p < 0.05$ level. BIS-11 = Baratt Impulsivity Scale-11th edition. F1 = Interpersonal, F2 = Affective, F3 = Lifestyle, F4 = Antisocial.

APPENDIX H

CORRELATIONS BETWEEN PRETEST STAGES OF CHANGE SCALES AND PSYCHOPATHY MEASURES

	Measures								
	PCL:YV[a]					Sale 11[b]	APSD[c]		
SOCS	Total	F1	F2	F3	F4		Total	Factor 1	Factor 2
Index Score	-.03	-.01	-.05	.09	-.09	-.08	.27**	.26**	.24**
Precontemplation	-.02	-.00	.05	-.11	.03	.26**	-.05	-.05	-.05
Contemplation	.02	.04	.02	.08	-.04	-.02	.28**	.25**	.25**
Action	-.22	-.11	-.18	-.11	-.27	-.11	.11	.29**	.01
Maintenance	.08	.05	.04	.21	.06	.09	.34**	.20**	.35**

[a] $n = 79$. [b] n varies from 187 to 190. [c] n varies from 191 to 196. * $p < 0.05$. ** $p < 0.01$. SOCS = Stages of Change Scales.

APPENDIX I

MEANS (STANDARD DEVIATIONS) AND GROUP COMPARISONS ON MODIFIED PCL:YV SCALES

Scale	Pretest	Posttest	*d*	*F*	*p*
Total Score			.08	0.09	.77
Treatment group	62.27 (39.48)	59.61 (32.55)	.07		
Comparison Group	58.41 (36.27)	58.37 (28.15)	.00		
Interpersonal Features			.04	0.06	.81
Treatment group	11.36 (11.94)	9.97 (9.80)	.13		
Comparison Group	9.37 (8.91)	8.59 (8.41)	.09		
Affective Features			**.28**	0.90	.35
Treatment group	10.55 (9.37)	9.42 (7.89)	.13		
Comparison Group	7.63 (7.80)	8.74 (7.13)	-.15		
Lifestyle Features			.08	0.11	.75
Treatment group	29.97 (15.89)	29.18 (13.00)	.05		
Comparison Group	31.30 (15.14)	31.67 (11.93)	-.03		
Antisocial Features			**-.23**	0.77	.39
Treatment group	5.42 (4.64)	5.73 (4.79)	-.06		
Comparison Group	6.07 (3.99)	5.41 (4.00)	.17		

Treatment group $n = 33$, Comparison Group $n = 27$; Overall model: $F(5,54) = .67$, $p = 0.65$.

APPENDIX J

PRETEST MEANS (STANDARD DEVIATIONS) AND GROUP COMPARISONS OF STAXI-2 SCALES BY GENDER

Scale	Treatment Group		Comparison Group		*d*	*F*	*p*
Trait Anger Scales	22.44	(6.18)	21.30	(7.30)	.17	0.48	.49
Male[1]	23.60	(5.78)	22.00	(6.74)	.26	0.65	.43
Female	21.00	(6.55)	19.90	(8.52)	.16	0.14	.71
Angry Temperament	8.72	(2.96)	8.53	(3.55)	.06	0.06	.81
Male	9.05	(3.05)	8.90	(3.32)	.05	0.02	.88
Female	8.31	(2.89)	7.80	(4.05)	.16	0.14	.71
Angry Reaction	9.17	(2.76)	8.27	(2.97)	**.32**	1.62	.21
Male	9.65	(2.64)	8.45	(2.80)	**.45**	1.94	.17
Female	8.56	(2.87)	7.90	(3.41)	.22	0.28	.60
Anger Expression Index	50.39	(10.74)	47.10	(13.47)	.29	1.22	.27
Male[2]	51.20	(11.06)	46.50	(13.42)	**.40**	1.46	.23
Female	49.38	(10.58)	48.30	(14.21)	.10	0.05	.83
Anger Control In	16.42	(4.46)	16.93	(4.81)	-.12	0.21	.65
Male	16.15	(4.59)	16.70	(5.37)	-.12	0.12	.73
Female	16.75	(4.40)	17.40	(3.66)	-.17	0.15	.70
Anger Control Out	17.97	(4.23)	18.83	(5.09)	.19	0.56	.46
Male	17.50	(4.56)	18.85	(5.33)	.29	0.74	.40
Female	18.56	(3.83)	18.80	(4.85)	-.06	0.02	.89
Anger Expression In	17.61	(3.82)	15.77	(4.62)	**.46**	3.15	**.08**
Male	18.05	(3.62)	15.45	(4.31)	**.69**	4.27	**.05**
Female	17.06	(4.11)	16.40	(5.38)	.16	0.13	.73
Anger Expression Out	19.17	(4.13)	19.10	(5.01)	.00	0.00	.95
Male	18.80	(4.44)	18.60	(4.17)	.05	0.02	.88
Female	19.63	(3.79)	20.10	(6.51)	-.11	0.06	.82

[1]Male Treatment group $n = 20$, Female Treatment group $n = 16$; [2]Male Comparison Group $n = 20$, Female Comparison Group $n = 10$.

APPENDIX K

PRETEST MEANS (STANDARD DEVIATIONS) AND GROUP COMPARISONS OF SOCS SCALES BY GENDER

Scale	Treatment Group	Comparison Group	*d*	*F*	*p*
Change Score	56.81 (20.25)	57.27 (19.86)	-.02	.32	.58
Male	53.30 (23.16)	56.60 (21.01)	-.15	1.47	.23
Female	55.69 (21.87)	58.60 (18.34)	.-15	.59	.45
Precontemplation	22.56 (6.05)	22.10 (6.67)	-.07	.10	.75
Male	22.20 (5.63)	22.15 (7.26)	-.01	.07	.79
Female	23.00 (6.69)	22.00 (5.64)	-.16	1.26	.28
Contemplation	27.03 (7.65)	28.37 (7.05)	-.18	.53	.47
Male	26.85 (8.43)	28.20 (7.70)	-.17	1.62	.21
Female	27.25 (6.81)	28.70 (5.91)	-.23	.58	.45
Action	26.06 (7.09)	27.00 (5.74)	-.15	.44	.51
Male	25.85 (7.92)	26.60 (5.95)	-.11	1.32	.26
Female	26.31 (6.15)	27.80 (5.51)	-.26	1.17	.29
Maintenance	23.83 (6.60)	24.00 (7.10)	-.03	.00	.97
Male	22.80 (7.34)	23.95 (7.09)	-.16	2.13	.15
Female	25.13 (5.50)	24.10 (7.49)	.17	.10	.76

n for males = 20, 20 (*df* = 1,38); females = 16; Overall comparison *df* = 1,64.

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