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Traumatic Experiences, Gang Involvement, and Psychopathic Traits Among Juvenile Offenders

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Abstract

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MPhil, Walden University, 2020

MA, American Military University, 2017

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology

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Abstract

Psychopathy is associated with serious criminal behavior, behavioral control issues, and recidivism among juvenile offenders. The identification of risk factors associated with psychopathic behavior is critical for treatment and intervention planning. Childhood trauma and delinquent peer associations are important psychosocial risk factors to consider for juvenile offenders. Research on the relationships between affective psychopathic traits and risk factors is extensive. There is a significant lack of literature concerning antisocial psychopathic traits. The purpose of this study was to examine the associations between psychosocial risk factors and Psychopathy Checklist -Youth Version antisocial traits. The integrated psychosocial model of criminal social identity was used to explain the relationships between the study variables. The research questions and hypotheses were devised to evaluate the predictive ability of each psychosocial risk factor. Archival data from the Pathways to Desistance study were analyzed. A quantitative research design using ordinal logistic regression was used to assess the predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits among serious juvenile offenders. Maternal warmth, parental hostility, exposure to violence, and gang involvement were statistically significant predictors of antisocial psychopathic traits among the study sample. Trauma and delinquent peer associations are critical to the understanding of antisocial psychopathic behavior among serious juvenile offenders. The social change implications may include enhanced forensic assessment procedures, improved treatment modalities for juvenile offenders with psychopathic tendencies, and community-based intervention programs to help at-risk youth.

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Dedication

This dissertation is dedicated to my late parents, Vessie Lee Moore and James William Beaver. They may no longer be here with me physically, but every life lesson they taught me guides every aspect of my life. Their unconditional love has given me the strength to never give up in times of hardship or despair. My parents stood by my side as long as they could, and for that, I am infinitely grateful. I know they would be proud of me for using my abilities to contribute to positive social change. They dedicated their lives to positive social change by giving an unwanted child a home, love, and hope, and for that, I am truly thankful. I love you, Mama and Papa.

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Chapter 1: Introduction to the Study

Introduction

Psychopathy is a personality disorder characterized by antisocial behavior, emotional dissociation, and maladaptive interpersonal traits (Lewis, 2018; Viding & McCrory, 2018). Psychopathy is a critical clinical construct in correctional settings (Colins et al., 2018). Forensic mental health professionals use psychopathy assessment results to predict future violence and recidivism (Colins et al., 2018; Ridder & Kosson, 2018). Psychopathy in juveniles is associated with criminal behavior (Geerlings et al., 2020; Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018), childhood trauma (Baglivio et al., 2020; Boduszek et al., 2019; Farina et al., 2018), and delinquent peer associations (Mallion & Wood, 2018; Ray, 2018). Juvenile offenders with psychopathic tendencies may exhibit a range of maladaptive behaviors and emotional deficits (Pechorro, Braga, et al., 2019; Ridder & Kosson, 2018). Juveniles who display antisocial behavior, callous-unemotional (CU) traits, lack of empathy, and grandiose-manipulative traits are more likely to join gangs than those with emotional or interpersonal related psychopathic tendencies (Carson & Ray, 2019).

Childhood trauma (Baglivio et al., 2020; Farina et al., 2018) and negative interpersonal relationships (Sijtsema & Lindenberg, 2018) play a significant role in the development of psychopathic traits. There are positive correlations between psychopathy, childhood trauma (Ireland et al., 2020; Tsang, 2018), and gang involvement (Carson & Ray, 2019; Mendez et al., 2020). Research on the associations between all three variables is limited (Farina et al., 2018). An investigation to examine the predictive relationship

between childhood trauma, gang involvement, and antisocial psychopathic traits could address this gap in the research literature. The purpose of this study was to examine the predictive relationship between childhood trauma, gang involvement, and antisocial psychopathic traits among serious juvenile offenders.

Juvenile offenders with psychopathic tendencies who affiliate with gangs can cause significant harm to members of society (Carson & Ray, 2019; Mendez et al., 2020; Ray, 2018; Sijtsema & Lindenberg, 2018). The antisocial behaviors and emotional difficulties exhibited by this population could continue into adulthood if treatment approaches or interventions are inadequate (Geerlings et al., 2020; Lewis, 2018; Viding & McCrory, 2018). The prevalence and negative influences of gang participation signify the need for effective prevention programs (Thornberry et al., 2018). The results of this study could be useful to criminal justice professionals, community leaders, and parents. The social change implications may include enhanced forensic assessment procedures, improved treatment modalities, and community-based intervention programs for at-risk youth.

Chapter 1 includes a summary of current research about the associations between childhood trauma, gang involvement, and psychopathy among juvenile offenders. Relationships between these variables are known to researchers. There remains a dearth of information regarding how childhood trauma and gang involvement may conjointly contribute to psychopathic behavior (Farina et al., 2018). The primary aim of this study was to determine whether the interaction between childhood traumatic experiences and gang involvement is a significant risk factor for antisocial psychopathic traits. A

quantitative research approach was used to examine the associations between the identified environmental risk factors and psychopathic traits. Research questions for this study are presented with the corresponding sets of hypotheses.

The integrated psychosocial model of criminal social identity (IPM-CSI) was the conceptual framework for this study. A description of the IPM-CSI is presented. A justification for the selection of this conceptual model is discussed. Archival data were used for this study. Archival data were most appropriate, considering the sensitive research topic and focus on a vulnerable population. Detailed information about the scope of this study is provided to clarify research parameters and generalizability. The significance of this research, including implications for positive social change, is also discussed.

Background

Psychopathy is associated with violent behavior, nonviolent offending, recidivism, poor treatment outcomes, emotional impairments, and cognitive deficits among juvenile offenders (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018). The interpersonal and lifestyle features of psychopathy are associated with antisocial behavior among juvenile offenders. Interpersonal psychopathic traits include manipulation and pathological lying (Ridder & Kosson, 2018). Lifestyle psychopathic traits include stimulation seeking, impulsivity, and irresponsibility (Ridder & Kosson, 2018). Interpersonal and lifestyle psychopathic characteristics are also related to violence exposure (Ridder & Kosson, 2018). Affective psychopathic traits, including lack of

empathy and callousness, are commonly used to explain behavior exhibited by juvenile offenders with psychopathic tendencies (Ridder & Kosson, 2018).

Psychopathy is significantly associated with childhood trauma among juvenile offenders (Farina et al., 2018). Physical abuse, emotional abuse, and living in a stressful living environment are also associated with psychopathy among juvenile offenders (Boduszek et al., 2019; Farina et al., 2018). Female juvenile offenders with psychopathic tendencies are significantly more likely to report a history of abuse than males (Farina et al., 2018). Sexual abuse is significantly associated with higher levels of psychopathic traits among female juvenile offenders (Boduszek et al., 2019). Females with a history of sexual abuse are more likely to exhibit affective and interpersonal features of psychopathy, such as manipulation or egocentric behavior (Boduszek et al., 2019).

Male juvenile offenders with psychopathic tendencies often have a history of living in stressful environments (Farina et al., 2018). Parental neglect and low warmth are associated with the development of psychopathic traits (Glenn, 2019). Low parental warmth is related to grandiose-manipulative attributes, CU traits, impulsive-irresponsible conduct, and antisocial behavior among serious juvenile offenders (Ray, 2018). Violence exposure is associated with changes in grandiose-manipulative traits (Ray, 2018). Changes in CU traits and antisocial behavior are related to low parental warmth among male juvenile offenders (Ray, 2018).

Psychopathic traits, including antisocial behavior, CU traits, lack of empathy, and grandiose-manipulative behaviors, are associated with gang membership (Mallion & Wood, 2018). Juvenile offenders who score higher on antisocial and lifestyle

psychopathic traits are more likely to affiliate with gangs (Carson & Ray, 2019). Juvenile offenders who do not affiliate with gangs are more likely to have higher scores on affective and interpersonal psychopathic features (Carson & Ray, 2019). Psychopathic traits (Mallion & Wood, 2018) and childhood psychological maltreatment (Fang et al., 2020) are related to moral disengagement. Moral disengagement is a cognitive process used by gang members to justify their criminal and violent behavior (Mallion & Wood, 2018). The relationship between psychopathic traits and moral disengagement in gang members is unclear (Mallion & Wood, 2018). Research is needed to gain a better understanding of this association (Mallion & Wood, 2018).

Juveniles who associate with gangs may experience violence, abuse, and victimization before joining (Kubik et al., 2019; Thornberry et al., 2018). Violence and victimization are also aspects of the gang lifestyle (Kubik et al., 2019; Thornberry et al., 2018). A juvenile may join a gang to get away from a stressful living environment (Kubik et al., 2019; Mallion & Wood, 2018), yet violence and victimization are aspects of gang life (Thornberry et al., 2018). Violence exposure is associated with the development of maladaptive behaviors, including aggression and antisocial behavior (Lujan & Fanniff, 2019; Tsang, 2018). Information about juvenile gang members is scarce despite public safety concerns (Thornberry et al., 2018). Research on gang-related behavior and associated risk factors is needed to develop effective intervention programs (Mendez et al., 2020; Thornberry et al., 2018). The relationships between psychopathic traits, gang membership, and disengagement also require further investigation (Carson & Ray, 2019; Mendez et al., 2020; Thornberry et al., 2018).

Interpersonal relationships can function as protective or risk factors for psychopathy (Backman et al., 2018). The quality of relationships can negatively or positively affect psychopathic tendencies among juvenile offenders (Backman et al., 2018). The antisocial influence in relationships can reinforce psychopathic tendencies Backman et al., 2018). Relationship characteristics are related to changes in psychopathic behavior over time (Backman et al., 2018). Prosocial and high-quality relationships are associated with lower psychopathic traits (Backman et al., 2018). Relationships with individuals who engage in antisocial behavior are associated with higher psychopathic traits (Backman et al., 2018).

Connections between affective psychopathic traits and criminal behavior are well documented (Geerlings et al., 2020; Mendez et al., 2020; Salekin et al., 2018). The associations between childhood trauma, gang involvement, and antisocial psychopathic traits among juvenile offenders are not thoroughly understood (Farina et al., 2018; Mendez et al., 2020). The lack of research concerning the relationships between these variables substantiated the need for this study. Research regarding the associations between childhood trauma, gang involvement, and antisocial psychopathic traits could lead to a clearer understanding of adolescent criminal behavior (Farina et al., 2018). Further understanding of how childhood trauma and gang involvement may contribute to antisocial psychopathic traits in juvenile offenders could also be beneficial for treatment planning.

Problem Statement

The relationships between antisocial psychopathic traits, childhood trauma, and gang involvement among juvenile offenders are not fully understood (Farina et al., 2018). Psychosocial factors play a significant role in the development and trajectory of psychopathic traits among juvenile offenders (Farina et al., 2018; Mallion & Wood, 2018; Ray, 2018; Sijtsema & Lindenberg, 2018). Childhood trauma (Farina et al., 2018; Mendez et al., 2020) and delinquent peer associations (Ray, 2018), including gang involvement (Mallion & Wood, 2018), are associated with psychopathy among juvenile offenders. Childhood trauma is a statistically significant predictor of psychopathy scores for both male and female juvenile offenders (Farina et al., 2018). The absence of parental warmth and delinquent peer associations are also associated with psychopathic tendencies (Ray, 2018). Gang involvement is related to antisocial behavior (Sijtsema & Lindenberg, 2018), CU traits (Mendez et al., 2020), and lack of empathy (Mallion & Wood, 2018). There is a positive correlation between high psychopathy scores and higher rates of antisocial behavior (Pechorro, Seto, et al., 2019).

Juvenile offenders with psychopathic tendencies may exhibit a myriad of troubling traits or behaviors, including callousness, impulsivity, poor behavioral control, manipulation, and aggression (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018; Viding & McCrory, 2018). Criminal justice professionals are motivated to understand psychopathy because of its severity and consequential societal costs (Viding & McCrory, 2018). Effective treatment programs could be developed for juveniles with psychopathic tendencies if associated risk factors and behaviors are identified (Farina et al., 2018;

Viding & McCrory, 2018). Treatment programs for psychopathic adult offenders have primarily been unsuccessful (Lewis, 2018). The prognosis for juvenile offenders with psychopathic tendencies is favorable when a comprehensive treatment approach is used (Lewis, 2018; Pechorro, Braga, et al., 2019; Viding & McCrory, 2018).

There is an ample amount of research on the associations between CU traits and psychopathy-related environmental risk factors (Glenn, 2019; Mendez et al., 2020). The focus on affective traits hinders a comprehensive understanding of how risk factors may contribute to psychopathic behavior (Salekin et al., 2018). There was no found research concerning the relationships between childhood traumatic experiences, gang involvement, and antisocial psychopathic traits among juvenile offenders. This lack of information is a significant gap in the literature. A quantitative study to assess the predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits was needed to address this research problem.

Purpose of the Study

The purpose of this study was to examine the predictive relationship between childhood trauma, gang involvement, and antisocial psychopathic traits among serious juvenile offenders. The potential moderation effects of gang involvement on the relationship between childhood trauma and antisocial psychopathic traits were also assessed. Traumatic experiences (Baglivio et al., 2020; Farina et al., 2018; Tsang, 2018) and the influence of delinquent peers (Mallion & Wood, 2018; Ray, 2018; Sijtsema & Lindenberg, 2018) are important risk factors related to psychopathy. Childhood trauma (Boduszek et al., 2019; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson

& Ray, 2019; Mallion & Wood, 2018) are associated with psychopathic behavior among juvenile offenders. The relationships between these variables are not fully understood.

The intent was to confirm earlier research findings using a sample of serious juvenile offenders and assess unexplored associations between the study variables. The independent variables for this study were childhood traumatic experiences and gang involvement. The interaction between childhood trauma and gang involvement was also assessed. The dependent variables were antisocial psychopathic traits and behaviors, as measured by the Psychopathy Checklist-Youth Version (PCL-YV). The potential moderating effect of gang involvement on the relationship between childhood trauma and antisocial psychopathic characteristics has yet to be examined (Farina et al., 2018). Further examination of the associations between the study variables is crucial for understanding how a juvenile offender's environment may contribute to psychopathic and criminal behavior.

Research Questions and Hypotheses

RQ1: Do childhood traumatic experiences significantly predict PCL-YV Factor 4 antisocial psychopathic traits?

$H_0 1_1$: Childhood traumatic experiences do not significantly predict poor anger control.

$H_a 1_1$: Childhood traumatic experiences do significantly predict poor anger control.

$H_0 1_2$: Childhood traumatic experiences do not significantly predict early behavior problems.

H_a1_2: Childhood traumatic experiences do significantly predict early behavior problems.

H_01_3: Childhood traumatic experiences do not significantly predict serious criminal behavior.

H_a1_3: Childhood traumatic experiences do significantly predict serious criminal behavior.

H_01_4: Childhood traumatic experiences do not significantly predict revocation of conditional release.

H_a1_4: Childhood traumatic experiences do significantly predict revocation of conditional release.

H_01_5: Childhood traumatic experiences do not significantly predict criminal versatility.

H_a1_5: Childhood traumatic experiences do significantly predict criminal versatility.

RQ2: Does gang involvement significantly predict PCL-YV Factor 4 antisocial psychopathic traits?

H_02_1: Gang involvement does not significantly predict poor anger control.

H_a2_1: Gang involvement does significantly predict poor anger control.

H_02_2: Gang involvement does not significantly predict early behavior problems.

H_a1_2: Gang involvement does significantly predict early behavior problems.

$H_0 2_3$: Gang involvement does not significantly predict serious criminal behavior.

$H_a 2_3$: Gang involvement does significantly predict serious criminal behavior.

$H_0 2_4$: Gang involvement does not significantly predict revocation of conditional release.

$H_a 2_4$: Gang involvement does significantly predict revocation of conditional release.

$H_0 2_5$: Gang involvement does not significantly predict criminal versatility.

$H_a 2_5$: Gang involvement does significantly predict criminal versatility.

RQ3: To what extent does gang involvement moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits?

$H_0 3$: Gang involvement does not moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits.

$H_a 3$: Gang involvement does moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits.

Conceptual Framework

The IPM-CSI served as the conceptual framework for this study. The IPM-CSI was developed to expand on Tajfel and Turner's social identity theory (Boduszek et al., 2016). The social identity theory proposes that people's sense of who they are depends on the groups in which they belong (Boduszek et al., 2016). The IPM-CSI (Boduszek et al., 2016; Spink et al., 2020) posits that an identity crisis, antisocial peer associations, protection of self-esteem, and individual personality characteristics lead to criminal social

identity (CSI). The IPM-CSI has been used to examine risk factors associated with criminal behavior, such as low self-esteem, relationships with antisocial peers, and psychopathic traits (Boduszek et al., 2016; Spink et al., 2020). Research related to this conceptual model is analyzed in Chapter 2.

The IPM-CSI was used to examine and explain the associations between the variables included in this study. The variables that were examined in this study are childhood trauma, gang involvement, and antisocial psychopathic traits. Each variable corresponded to one or more of the key concepts in the model. The concepts were identity crisis, criminal or antisocial peer associations, identification with a criminal group to protect self-esteem, and personality characteristics (Spink & Woodfield, 2019). The key concepts are thoroughly explained in Chapter 2. Researchers used the IPM-CSI to examine risk factors associated with CSI using a sample of community-based juvenile offenders (Spink et al., 2020). Previous researchers have primarily examined one risk factor in isolation (Spink & Woodfield, 2019). The present study differs from earlier research because multiple risk factors were examined, and the entire model was tested on a single sample (Spink & Woodfield, 2019).

Nature of the Study

A quantitative nonexperimental research design was used to examine the associations between childhood trauma, gang involvement, and antisocial psychopathic traits among a sample of serious juvenile offenders. A nonexperimental approach was appropriate for this study because participants were not randomly assigned to specific groups. The independent variables were also not manipulated. This study was a cross-

sectional survey. Only baseline data were analyzed. Nonexperimental cross-sectional research designs have been used to examine the relationships between childhood trauma (Farina et al., 2018), gang involvement (Carson & Ray, 2019), interpersonal relationships (Backman et al., 2018), delinquent peer associations (Ray, 2018), and psychopathy among juvenile offenders.

Ordinal logistic regression (OLR) was used to assess the predictive relationship between variables and moderation effects. The independent or predictor variables were childhood trauma and gang involvement. Gang involvement was also assessed as a moderator variable. The dependent or outcome variables were antisocial psychopathic traits. OLR was a suitable statistical analysis method for this study because the dependent variable is scored on a 3-point ordinal scale (Carson & Ray, 2019). Regression analysis can be used to test whether one or more independent variables can predict a dependent variable (Ridder, & Kosson, 2018). Regression analysis can also be used to assess moderation effects by including interaction variables (Farina et al., 2018).

Archival data from the Pathways to Desistance (PTD) study were used for this research. PTD was a longitudinal survey of 1,354 serious juvenile offenders located in Phoenix, Arizona, and Philadelphia, Pennsylvania (Mulvey, 2017). Juvenile offenders who were between the ages of 14 to 18 years old and adjudicated for at least one serious offense were included in the study. The majority of the sample were males (n = 1,170). The mean age of study participants was 16.04 years (Mulvey, 2017). The sample comprised 41.4% Black, 33.5% Hispanic, 20.2% White, and 4.8% reported their ethnicity as other (Mulvey, 2017).

This quantitative study was designed to assess whether childhood trauma and gang involvement are significant predictors of antisocial psychopathic traits among serious juvenile offenders. Baseline data were used for this study. The data collected included information about psychopathic traits, gang involvement, and traumatic experiences. Psychopathy-related information was obtained from the PCL-YV (Mulvey, 2017). Information about traumatic experiences was obtained from the Exposure to Violence Inventory (ETV) and the Quality of Parental Relationships Inventory (Mulvey, 2017). Participants in the PTD study were also asked about their gang involvement and affiliations (Mulvey, 2017). Demographic information, including sex, age, and ethnicity, was also collected. Detailed information about the specific design of the study is provided in Chapter 3.

Definitions

Antisocial psychopathic traits: Hare and Neumann developed a four-factor model for the PCL-YV. The five antisocial psychopathic traits are poor anger control, early behavior problems, serious criminal behavior, revocation of conditional release, and criminal versatility (Neumann et al., 2006).

Childhood trauma: Childhood trauma involves experiences of abuse, neglect, or exposure to violence (Farina et al., 2018). There are several types of trauma associated with psychopathy, including physical abuse, psychological maltreatment, emotional neglect, and sexual abuse (Farina et al., 2018).

Gang involvement: Gang involvement is defined as an affiliation with a group of delinquent or antisocial peers (Thornberry et al., 2018). Gang members are more likely to

be involved in different types of criminal behavior, including violent crime, property crime, drug use, drug sales, and gun crime, than nongang members (Thornberry et al., 2018).

Psychopathy: Psychopathy is a personality disorder characterized by antisocial behavior, emotional dissociation, and maladaptive interpersonal traits (Farina et al., 2018; Viding & McCrory, 2018).

Serious juvenile offenders: Participants in the PTD study were adolescents aged 14 to 17 who committed felony offenses in Arizona and Pennsylvania (Cardwell & Piquero, 2018; Mulvey, 2017).

Assumptions

There were three assumptions related to the design, methodology, and generalizability of this study. The first assumption was that the data collected for the PTD study is accurate and complete. This assumption was necessary for the context of the study because the required information was obtained from evaluation reports and assessment instruments. The assessment instruments for this study were the PCL-YV, ETV, and the Quality of Parental Relationships Inventory (Mulvey, 2017). The second assumption was that the demographic information provided is accurate. Juvenile offenders are a heterogeneous population, and they come from various backgrounds (Farina et al., 2018). This population also presents a wide variety of individual psychological and social issues (Farina et al., 2018; Mulder et al., 2019). The demographic information for the participants in the PTD study should be comparable to serious juvenile offender study samples used in previous research. The third assumption

was that the final study sample from the complete dataset is representative of the study population. The population of interest was serious juvenile offenders. This assumption was necessary because the results of this study are not generalizable to juvenile offenders who have committed status or minor offenses.

Scope and Delimitations

The predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits among serious juvenile offenders was examined in this study. There is limited information about the associations between antisocial psychopathic traits, childhood traumatic experiences, and gang involvement (Farina et al., 2018). There is also a lack of information available about the lives and experiences of juvenile gang members (Mallion & Wood, 2018). Research regarding the relationship between psychopathy and gang involvement is often ambiguous (Carson & Ray, 2019). The intent of this research was to examine understudied associations between psychopathy-related environmental risk factors.

Archival data from the PTD study were used for this study. The population of interest was serious juvenile offenders. Serious juvenile offenders often report instances of abuse or neglect (Boduszek et al., 2019; Farina et al., 2018; Lujan & Fanniff, 2019). This population is also more likely to display psychopathic traits (Colins et al., 2018; Pechorro, Braga, et al., 2019) and associate with delinquent peers (Mallion & Wood, 2018; Ray, 2018) than other young offender populations. Male and female juvenile offenders were included in the study. Gender differences were not investigated. Gender and other demographic information were only used to describe the study sample. Juvenile

offenders who have not committed serious or violent offenses were not included in this study. Research findings will not be generalizable to juvenile offenders who have committed status or minor offenses.

The IPM-CSI served as the conceptual framework for this study. This conceptual model was selected because it can be used to examine and explain the associations between multiple categories of risk factors associated with criminal behavior (Boduszek et al., 2016; Spink & Woodfield, 2019). The IPM-CSI can be used to examine environmental and individual-level risk factors (Spink & Woodfield, 2019). Theories such as the social identity theory and the self-categorization theory could be applicable theoretical frameworks for research regarding the cognitive processes of gang affiliation (Spink & Woodfield, 2019). The purpose of this study was to assess the extent to which childhood trauma and gang involvement may influence psychopathic behavior among serious juvenile offenders. The previously mentioned theories were not suitable for a comprehensive examination of environmental risk factors and personality characteristics associated with criminal behavior.

Limitations

A limitation of this study was the inability to examine gender differences. There were significantly more male juvenile offenders included in the PTD study than females (Mulvey, 2017). A second limitation pertained to the use of secondary data. The accuracy and completeness of the dataset could not be verified. Potential bias-related issues associated with data collection procedures could not be identified. Researcher bias during the data collection process for the PTD study could have affected the results of this study.

Previous research and codebooks were thoroughly reviewed to get a broader view of the data before analysis.

A third limitation was a specific juvenile offender population was used for this study. The focus on one particular population limits the generalizability of findings. A fourth limitation pertained to the research design. Regression analysis was used to examine the predictive ability of traumatic experiences and gang involvement for antisocial psychopathic traits. Regression analysis results cannot and should not be used to draw inferences about causation (Farina et al., 2018). The results of this study may still be useful to stakeholders despite this limitation.

Significance

There is a considerable body of literature concerning the relationships between risk factors related to juvenile psychopathy. There are currently no research articles about the associations between childhood trauma, gang involvement, and antisocial psychopathic traits among juvenile offenders. The aim of this research was to fill this gap in knowledge. The predictive ability of childhood traumatic experiences and gang involvement for antisocial psychopathic traits among serious juvenile offenders was examined in this study. Valuable insights regarding the relationships between a specific set of environmental risk factors related to psychopathy were garnered from this research. The findings obtained in this study could be a significant addition to the literature concerning juvenile offenders with psychopathic tendencies who affiliate with gangs.

Forensic psychology professionals, researchers, treatment providers, and parents must have a comprehensive understanding of the risk factors associated with psychopathy

to rehabilitate juvenile offenders with psychopathic tendencies (Lewis, 2018) successfully. Treatment programs for psychopathic individuals should include approaches to address developmental factors, external influences, underlying deficits, and maladaptive behaviors (Lewis, 2018). The results of this study could be used to improve forensic assessment procedures, develop effective trauma-based interventions, and arrange appropriate supervision measures for juvenile offenders with psychopathic tendencies. Juvenile offenders with psychopathic tendencies who have experienced traumatic events or associated with gangs could be successfully rehabilitated if interventions such as functional family therapy and delinquency prevention programs are appropriately implemented (Lewis, 2018; Ray, 2018; Viding & McCrory, 2018). The results of this study could substantiate the need for these programs for high-risk juvenile offenders.

Psychopathy is associated with immoral behavior, including manipulation, pathological lying, violence towards others, and criminality (Geerlings et al., 2020). Individuals with psychopathic tendencies can cause significant harm to members of society (Geerlings et al., 2020). The societal costs associated with this harm can be substantial (Viding & McCrory, 2018). Community leaders could use the results of this study to develop and support the need for community-based programs for at-risk youth. Prosocial behavior-related programs throughout the community could contribute to positive social change by reducing delinquent behavior, gang involvement, and recidivism, which improve public safety.

Summary

Psychopathy is associated with criminal behavior (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018), childhood trauma (Boduszek et al., 2019; Farina et al., 2018; Mendez et al., 2020; Tsang, 2018), and delinquent peer associations (Mallion & Wood, 2018; Ray, 2018) including gang affiliation (Carson & Ray, 2019). Juvenile offenders with psychopathic tendencies may exhibit a range of troubling antisocial behaviors, including poor anger control, unprovoked aggression, and criminality (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018). Early traumatic experiences and the influence of delinquent peers are essential to consider when treating psychopathic juvenile offenders (Farina et al., 2018; Mallion & Wood, 2018; Ray, 2018). The associations between these environmental risk factors and antisocial features of psychopathy have not been well researched (Farina et al., 2018).

The purpose of this study was to examine the associations between childhood trauma, gang involvement, and psychopathic traits. The key focus of this research was to determine whether traumatic experiences and gang involvement can predict antisocial psychopathic traits (Farina et al., 2018). The IPM-CSI served as the conceptual framework for this study. The IPM-CSI suggests that an identity crisis, relationships with antisocial peers, protection of self-esteem, and personality characteristics contribute to CSI (Boduszek et al., 2016; Spink & Woodfield, 2019). The IPM-CSI has been used to examine risk factors associated with criminal behavior (Boduszek et al., 2016; Spink & Woodfield, 2019). This conceptual model was used to explain the associations between

childhood trauma, gang involvement, and antisocial psychopathic traits among serious juvenile offenders.

Chapter 2 includes a comprehensive review of the research literature related to psychopathic traits, childhood trauma, and gang involvement. The IPM-CSI and how it relates to this study are discussed. The literature review focuses on the associations between the identified environmental risk factors and the development of psychopathic traits among juvenile offenders. Current research pertaining to serious juvenile offenders is presented. Areas of concern related to the study variables requiring further investigation are also discussed.

Chapter 2: Literature Review

Introduction

There is substantial research on risk factors associated with psychopathy among juvenile offenders. Childhood traumatic experiences (Boduszek et al., 2019; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson & Ray, 2019; Mallion & Wood, 2018) are related to psychopathic tendencies in juvenile offenders. Researchers have not extensively investigated the connections between childhood trauma, gang involvement, and antisocial features of psychopathy (Farina et al., 2018). The purpose of this study was to determine whether childhood trauma and gang involvement are significant predictors of antisocial psychopathic traits among serious juvenile offenders. The influence of gang involvement on the relationship between childhood trauma and antisocial psychopathic traits was also examined (Farina et al., 2018).

Psychopathy is associated with criminal behavior, recidivism, emotional impairments, and behavioral control issues among juvenile offenders (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018). Childhood traumatic experiences are related to the development of psychopathic traits in juveniles (Boduszek et al., 2019; Farina et al., 2018; Glenn, 2019). Psychopathic traits, including antisocial behavior, CU traits, lack of empathy, and grandiose-manipulative behaviors are associated with gang involvement (Mallion & Wood, 2018). Juvenile offenders with high levels of antisocial and lifestyle psychopathic traits are more likely to affiliate with gangs (Carson & Ray, 2019). Juvenile gang members often have histories of abuse (Kubik et al., 2019; Thornberry et al., 2018).

Connections between childhood trauma, gang involvement, and affective psychopathic traits among juvenile offenders are well documented (Farina et al., 2018; Mendez et al., 2020; Salekin et al., 2018). There is a need to investigate the relationship between childhood trauma, gang involvement, and antisocial psychopathic traits (Farina et al., 2018). There is also a lack of information about adolescent gang members who are or have been in correctional settings (Carson & Ray, 2019; Mendez et al., 2020). The scarcity of information about this population is a cause for concern. There are substantive individual and societal level consequences associated with gang involvement (Carson & Ray, 2019; Mallion & Wood, 2018). Research is needed to clarify the associations between childhood trauma, gang involvement, and antisocial psychopathic behavior (Farina et al., 2018).

This chapter includes a review of the research on the associations between psychopathy, childhood trauma, and gang involvement among juvenile offenders. The major concepts of the IPM-CSI, the conceptual framework for this study, are discussed. A description of psychopathy in juveniles is provided. Characteristics of serious juvenile offenders are discussed. Studies related to psychopathy and childhood trauma among juvenile offenders are presented. Research regarding the connection between gang involvement and psychopathic behavior is discussed. Quantitative research designs and methods commonly used in studies on psychopathy are also described.

Literature Search Strategy

Databases located on Walden University's Library website were selected to gather information about psychopathy, traumatic experiences, gang membership, and juvenile

offenders. The databases searched were the Criminal Justice Database, PsycINFO, PsycARTICLES, ScienceDirect, SAGE Journals, and SocINDEX with Full Text. Google Scholar was also used to find relevant literature. SAGE Research Methods Online was searched to find pertinent information about the statistical methods used in the studies reviewed and the selected methodology for this study.

The key terms used to find studies about juvenile offenders were *juvenile psychopathy, juvenile offenders, serious juvenile offenders, juvenile delinquents, adolescent offenders, young offenders,* and *Pathways to Desistance*. Psychopathy-related search terms were *psychopathic tendencies, psychopathic traits, psychopathic behavior, psychopathic personality, antisocial behavior, antisocial psychopathic traits, Psychopathy Checklist-Youth Version,* and *psychopathy assessment instruments*. Search terms for traumatic experiences were *childhood trauma, traumatic experiences, abuse, sexual abuse, physical abuse, psychological maltreatment, neglect, exposure to violence, parental warmth,* and *parental hostility*. Key terms for gang involvement were *antisocial peers, gang association, gang affiliation, gang memberships*, and *delinquent peer associations*. The *integrated psychosocial model of criminal social identity* and *criminal social identity* were search terms used to find research regarding the conceptual framework. Research methodology related search terms were *regression analysis, regression models, ordinal logistic regression,* and *moderation analysis*.

Key terms were searched individually and combined using Boolean operators to expand the number of articles retrieved. Specifiers were used along with a key term or phrase to achieve a more precise search. The search results were narrowed down to peer-

reviewed journals and published research from 2016 to the present. The only exception was the inclusion of seminal works related to the IPM-CSI (Boduszek & Hyland, 2011) and the PCL-YV (Neumann et al., 2006). Reference lists and bibliographies were also reviewed.

Conceptual Framework

Integrated Psychosocial Model of Criminal Social Identity

The IPM-CSI synthesizes and expands on various theories related to CSI, particularly social identity theory (Boduszek et al., 2016). The central tenet of the social identity theory (Tajfel & Turner, 1979) is that an individual's self-concept is dependent upon the group in which the person belongs (Boduszek et al., 2016). Social identity theory is the basis for CSI (Boduszek & Hyland, 2011). Unfavorable social comparisons, failures in prosocial roles, and persistent criminal behavior are the processes involved in the development of CSI (Boduszek & Hyland, 2011). Contextual or situational factors, including a dysfunctional living environment and associations with criminal peers, may influence the severity of CSI (Boduszek & Hyland, 2011). The psychosocial risk factors identified in the IPM-CSI are an identity crisis, antisocial peer associations, an individual's need to protect their self-esteem, and personality traits (Boduszek et al., 2016; Spink & Woodfield, 2019). The following sections include a description of each psychosocial factor.

Identity Crisis

The development of CSI arises from an identity crisis that occurs during adolescence when relationships with peers play a critical role (Boduszek & Hyland,

2011). This postulation was derived from Erikson's (1963, 1968) and Marcia's (1967) theories of ego identity formation (as cited in Boduszek et al., 2016). An individual will explore different identities to deal with this psychosocial crisis, eventually emerging with either a prosocial or antisocial personality (Boduszek et al., 2016). The need to compare the self to others increases during adolescence (Boduszek et al., 2016). The comparison process, which also involves social categorization, has a significant impact on self-concept (Boduszek et al., 2016). Juveniles who have failed in their social roles and engaged in nonconforming behavior perceive themselves as inconsistent compared to those whom they view as successful (Boduszek et al., 2016). These individuals experience a sense of discrepancy regarding their actual and ideal selves (Boduszek et al., 2016). This sense of discrepancy results in feelings of agitation, which is consistent with Agnew's (1993) strain theory (as cited in Boduszek et al., 2016). The strain theory posits that the inability to achieve important goals results in frustration and anger (Boduszek et al., 2016).

Boundaries between positive and negative groups become constant over time once categorization or labeling, followed by peer rejection, takes place (Boduszek et al., 2016). Peer rejection has a significant influence on the development of CSI (Boduszek & Hyland, 2011). The negative consequences of peer rejection include low self-esteem, violent or aggressive tendencies, difficulties in school, isolation, and antisocial behaviors (Boduszek et al., 2016). The negative feelings that arise as a result of being rejected by peers include anger, frustration, jealousy, and hostility (Boduszek et al., 2016). Family

factors, including low parental warmth, parental rejection, or improper parenting styles can intensify these negative feelings (Boduszek et al., 2016).

Low parental warmth can hinder the development of empathy and guilt (Boduszek et al., 2016). Parental rejection can reduce the child's motivation to engage in prosocial behaviors, which results in antisocial behavior and criminality (Boduszek et al., 2016). Low parental supervision is associated with relationships with criminal peers and engagement in criminal behavior, which is influenced by those relationships (Boduszek et al., 2016). Parental control can indirectly affect the type of friends with whom individuals associate (Boduszek et al., 2016). This indirect effect demonstrates that ineffective parenting is a significant risk factor for the development of associations with criminal peers (Boduszek et al., 2016). Relationships with criminal peers contribute to criminal thinking and behavior (Boduszek et al., 2016).

Exposure to a Criminal or Antisocial Environment

The differential reinforcement theory posits that individuals are initially introduced to delinquent behavior through differential associations with antisocial peers (Boduszek et al., 2016). Individuals who associate with antisocial peers then develop an understanding of how to gain rewards and avoid punishments associated with their behavior (Boduszek et al., 2016). The differential reinforcement theory can be used to explain the decision-making process related to the development of the cognitive and behavioral techniques associated with criminal offending (Boduszek et al., 2016). This theory can also be used to explain the motivational processes associated with criminal behavior (Boduszek et al., 2016). Individuals who have been socialized in a criminal

environment and have acquired associated ways of thinking are more likely to engage in criminal behavior in the future (Boduszek et al., 2016). Delinquent juveniles develop cognitions, attitudes, and values that encourage illegal or antisocial behavior through interactions with group influences (Boduszek et al., 2016). Criminal cognitions, values, beliefs, and in-group ties strengthen when an individual persistently associates with a group of criminal peers (Boduszek et al., 2016).

Criminal or antisocial peer associations influenced by low parental supervision play a significant role in the development of CSI (Boduszek & Hyland, 2011). Relationships with criminal or antisocial peers significantly contribute to the psychological perception of resemblance with others in the group (Boduszek et al., 2016). Associations with criminal peers are also significantly related to cognitive centrality (Boduszek et al., 2016). Individuals develop a strong belief about the importance and value of belonging to a criminal group through interactions with criminal peers (Boduszek et al., 2016). Criminal group membership subsequently becomes a predominant aspect of the individual's life and self-concept (Boduszek et al., 2016). Criminal peer relationships are also associated with the affective component of criminal group membership; this is consistent with social identity theory (Boduszek et al., 2016). The more an individual interacts with peers who engage in criminal behavior, the higher the likelihood there is of the individual to develop positive feelings about belonging to the criminal or antisocial group (Boduszek et al., 2016).

Identification with a Criminal Group

Group members increase positive self-evaluations by comparing themselves to individuals within their organization (Boduszek et al., 2016). Group members acknowledge their organization as more favorable by comparing themselves to individuals from other social groups (Boduszek et al., 2016). This comparison process is based on the social comparison theory (Boduszek et al., 2016). Peer rejection is associated with low self-esteem and antisocial behavior (Boduszek et al., 2016). Antisocial group members may increase their self-esteem by comparing themselves to more disadvantaged or marginalized groups (Boduszek et al., 2016). This comparison allows antisocial group members to perceive their clique more favorably, which results in positive evaluations (Boduszek et al., 2016). Criminal thinking patterns are related to negative self-evaluations (Boduszek et al., 2016). The emotional aspects of group membership and in-group ties are related to positive self-evaluations (Boduszek et al., 2016).

Personality Characteristics

The association between environmental factors and CSI may be influenced by an individual's personality traits (Boduszek et al., 2016). Psychoticism, neuroticism, and psychopathy are associated with criminal behavior (Spink & Woodfield, 2019). Personality traits influence the relationship between CSI and criminal thinking styles among offenders (Boduszek et al., 2016). The influence of in-group emotional ties on criminal thinking is significant for criminals who are introverts (Boduszek et al., 2016).

The influence of in-group ties on criminal thinking is significant for criminals who are extroverts (Boduszek et al., 2016).

Psychoticism is a strong predictor of criminal thinking patterns among offenders (Boduszek et al., 2016). Psychopathic traits are also associated with and may influence the development of CSI (Boduszek et al., 2016). The period of confinement has a significant positive effect on CSI development for offenders with high psychopathic tendencies (Boduszek et al., 2016). Affective psychopathic traits influence the relationship between criminal or antisocial associations and in-group ties (Spink et al., 2020). Antisocial psychopathic traits are associated with all three components of CSI (Spink et al., 2020). Lifestyle and interpersonal psychopathic traits are positively associated with in-group ties (Spink et al., 2020).

Research Related to the Integrated Psychosocial Model of Criminal Social Identity

The components of the IPM-CSI have been investigated in various contexts with adult and juvenile offender populations (Spink & Woodfield, 2019). Parental attachment issues and inadequate supervision are associated with criminal behavior (Spink & Woodfield, 2019). A dysfunctional family or living environment, along with other social factors, including exposure to a criminal environment and peers, can result in the development of CSI (Spink & Woodfield, 2019). This finding is based on research concerning adult offender populations (Spink & Woodfield, 2019). Further research is needed to confirm this relationship for juvenile offender populations (Spink & Woodfield, 2019).

The effect of exposure to an antisocial or criminal environment has been examined using measures including criminal associations, length of incarceration, and institutionalization (Spink & Woodfield, 2019). Direct relationships between these measures and CSI have been identified (Spink & Woodfield, 2019). Gender may play a role in the relationship between criminal associations and CSI (Spink & Woodfield, 2019). Further research is needed to investigate gender differences (Spink & Woodfield, 2019). There are disparities in findings with regards to which CSI components are influenced by antisocial or criminal environment exposure (Spink & Woodfield, 2019). Potential reasons for these disparities include the utilization of different measures, instruments, methodologies, or samples (Spink & Woodfield, 2019).

Criminal attitudes assessment instruments are used to measure attitudes towards criminal or non-criminal groups (Spink & Woodfield, 2019). The level of impact criminal attitudes has on CSI varies (Spink & Woodfield, 2019). Psychopathic traits, according to the IPM-CSI, may influence the relationship between criminal attitudes and CSI (Spink & Woodfield, 2019). Disparities in research findings have also been found in studies concerning the relationship between self-esteem and CSI (Spink & Woodfield, 2019). Researchers have not investigated a causal relationship between self-esteem and CSI (Spink & Woodfield, 2019). Research regarding the association between identity crisis, self-esteem, and CSI is also limited (Spink & Woodfield, 2019).

Personality traits influence the associations between the psychosocial factors identified in the IPM-CSI (Spink & Woodfield, 2019). Psychopathic traits influence the relationship between exposure to an antisocial or criminal environment and CSI (Spink &

Woodfield, 2019). Consequences related to CSI have not been identified (Spink & Woodfield, 2019). The identification of the positive and negative consequences associated with CSI is critical for treatment planning (Spink & Woodfield, 2019). Cross-sectional research designs have frequently been used to explore factors associated with CSI (Spink et al., 2020; Spink & Woodfield, 2019). Longitudinal studies designed to investigate IPM-CSI components are scarce (Spink & Woodfield, 2019). Research using a longitudinal design is needed to examine changes in aspects of CSI over time (Spink & Woodfield, 2019). Quasi-experimental research designs have not been used to examine IPM-CSI components (Spink & Woodfield, 2019).

Researchers who have examined IPM-CSI concepts have primarily focused on incarcerated adult males (Spink et al., 2020). Research concerning juvenile offenders and females is scant (Spink et al., 2020). Juvenile offender research could provide further insights into the early stages of CSI development (Spink & Woodfield, 2019). Research involving female offenders is needed to explore gender differences (Spink & Woodfield, 2019). Only populations in Poland, Pakistan, and the United States have been used to investigate factors associated with CSI (Spink & Woodfield, 2019). Research in different countries is needed to gain important insights regarding cultural differences (Spink & Woodfield, 2019).

Relationship Between the Current Study and the Integrated Psychosocial Model of Criminal Social Identity

The IPM-CSI was designed to synthesize, simplify, and extend our understanding of the psychosocial factors related to CSI (Boduszek et al., 2016). There are four

important psychosocial factors, identified in the IPM-CSI, involved in the development of CSI. The first factor is an identity crisis resulting from weak societal bonds and rejection by peers (Boduszek et al., 2016). An identity crisis during adolescence is related to poor parental attachment and supervision (Boduszek et al., 2016). The second factor is exposure to an antisocial or criminal environment (Boduszek et al., 2016). The third factor is the need to identify with a criminal or antisocial group to protect one's self-esteem (Boduszek et al., 2016). The fourth factor is the moderating role of personality traits (Boduszek et al., 2016). Personality characteristics influence the relationship between one's environment and CSI development (Boduszek et al., 2016).

The study variables were childhood traumatic experiences, gang involvement, and antisocial psychopathic traits. Each variable directly or indirectly corresponds to at least one psychosocial factor identified in the IPM-CSI. Childhood traumatic experiences, including parental warmth, parental hostility, and violence exposure, are related to the first IPM-CSI factor. Gang involvement is related to the second and third components. Antisocial psychopathic traits are related to the fourth component. The IPM-CSI can be used to explain the relationships between childhood trauma, gang involvement, and antisocial psychopathic traits.

There has only been one study in which all IPM-CSI components have been explored using a single sample (Spink et al., 2020). Male and female community-based juvenile offenders were included in the study (Spink et al., 2020). A correlational research design was used to examine the associations between parental factors, delinquent peer associations, self-esteem, in-group affect, in-group ties, and psychopathic

traits (Spink et al., 2020). The study population for this study was male and female serious juvenile offenders. A similar research methodology using the IPM-CSI was utilized for this study.

The relationship between parental factors and self-esteem was not examined in this study. The emotional or cognitive aspects of gang involvement were also not investigated. The IPM-CSI, instead, was used to explain the predictive relationship between childhood trauma, gang involvement, and antisocial psychopathic traits. The intent was to assess the significance of psychosocial risk factors specified in the IPM-CSI associated with psychopathic behavior. Psychopathy is associated with the development of CSI, antisocial behavior, and criminal peer relationships (Boduszek et al., 2016). A dysfunctional living environment, poor parenting, and trauma-inducing events are related to psychopathy (Boduszek et al., 2016; Spink et al., 2020).

Literature Review Related to Key Variables

Research is needed to more explicitly investigate the associations between childhood trauma, gang involvement, and antisocial psychopathic traits (Farina et al., 2018). This literature review was organized based on the lack of studies available regarding the relationships between all three variables. Each study variable is discussed separately or in relation to one other study variable. Current research regarding how early traumatic experiences and gang involvement are related to psychopathy is presented. The general connection between all three variables and how they may lead to antisocial behavior among juvenile offenders is discussed. A justification for why each variable was selected is presented throughout the literature review. The study population is also

described. The goal of this literature review was to critically evaluate what is known about the associations between childhood trauma, gang involvement, and psychopathy.

OLR and moderation analysis were the selected statistical methods for this study. Regression analyses, including multiple linear regression, sequential moderated multiple regression, multinomial logistic regression, hierarchical regression, have been used to examine the relationships between correlates associated with CSI (Spink & Woodfield, 2019). Correlates that have been investigated using regression and moderation analyses include criminal associations, parental relationships, self-esteem, personality characteristics, delinquency, psychopathy, and recidivism (Spink & Woodfield, 2019). Regression models, including interaction variables, can be used to examine the predictive ability of independent variables and moderation effects (Farina et al., 2018; Ridder & Kosson, 2018). Regression analyses were used in several studies discussed throughout the literature review.

Characteristics of Serious Juvenile Offenders

Juvenile offender populations are heterogeneous (Mulder et al., 2019). Juveniles present a wide variety of individual, psychological, behavioral, and social problems (Mulder et al., 2019). Serious juvenile offenders are a priority target population for intervention and treatment (Mulder et al., 2019). The goal of treatment is to prevent these serious offenders from persisting in their criminal careers into adulthood (Mulder et al., 2019). Antisocial behavior, problem-solving difficulties, family issues, and past criminal behavior are significant predictors of recidivism among serious juvenile offenders (Mulder et al., 2019).

Individual-level risk factors associated with persistent serious juvenile delinquency include early criminal behavior, violent behavior, conduct disorder, attention-deficit/hyperactivity disorder, psychopathic traits, low educational achievement, and substance abuse (Mulder et al., 2019). Environmental risk factors include poor parenting, familial issues, and living in a bad or marginalized neighborhood (Mulder et al., 2019). Treatment planning for serious juvenile offenders can be complicated by this variety of risk factors and individual characteristics (Mulder et al., 2019). The classification of serious juvenile offenders into subgroups based on risk factors and individual-level characteristics helps identify critical treatment indicators (Mulder et al., 2019). Serious juvenile offenders were classified into subgroups based on risk factors using cluster analysis (Mulder et al., 2019). Regression analysis was used to examine recidivism for each subgroup (Mulder et al., 2019).

Researchers classified serious juvenile offenders (n = 1,147) into subgroups based on 70 static and dynamic risk factors associated with criminal behavior (Mulder et al., 2019). The risk factors have been documented in international research (Mulder et al., 2019). Six subgroups were identified. Subgroup 1 consisted of juvenile offenders who exhibit antisocial behavior, including low empathy, substance abuse, and serious behavioral issues (Mulder et al., 2019). Antisocial offenders had the highest rates for recidivism (Mulder et al., 2019). Frequent offenders were classified as Subgroup 2 (Mulder et al., 2019). Frequent offenders had the highest rates of substance abuse issues (Mulder et al., 2019). Juveniles with a flat profile were classified as Subgroup 3 (Mulder et al., 2019). Flat profile offenders did not score higher on any of the risk factors when

compared to those classified in other subgroups (Mulder et al., 2019). Subgroup 4 included juveniles with sexual problems who also lacked social and cognitive skills (Mulder et al., 2019). Subgroup 5 included juveniles who only had sex-related problems (Mulder et al., 2019). Juvenile offenders in Subgroups 4 and 5 had the lowest recidivism rates (Mulder et al., 2019).

Serious juvenile offenders who would be classified in Subgroup 1, which is characterized by antisocial behavior, are the focus of this present study. Antisocial behavior is a significant predictor of recidivism (Mulder et al., 2019). Mental health issues are most prevalent among serious juvenile offenders classified in this subgroup (Mulder et al., 2019). The specific needs of serious juvenile offenders can be identified by classifying them into subgroups (Mulder et al., 2019). Each subgroup has its own distinctive set of risk factors and associated behavioral problems that should be addressed during treatment (Mulder et al., 2019). Recidivism is high for serious juvenile offenders (Mulder et al., 2019). A reduction in recidivism could considerably diminish the burden on and danger to society that this population presents.

Psychopathy

Psychopathy is a personality disorder characterized by antisocial behavior, emotional dissociation, and problematic interpersonal traits (Hawes et al., 2018; Viding & McCrory, 2018). The main components of psychopathy are affective traits, lifestyle features, interpersonal attributes, and externalizing behaviors (Hawes et al., 2018). Affective traits include CU traits, remorselessness, and lack of empathy (Lewis, 2018; Viding & McCrory, 2018). Lifestyle features include impulsivity, irresponsibility, and

thrill-seeking (Lewis, 2018; Viding & McCrory, 2018). Interpersonal attributes include manipulation, grandiosity, and narcissism (Hawes et al., 2018). Externalizing psychopathic behaviors include conduct problems, behavioral control issues, and criminality (Lewis, 2018; Viding & McCrory, 2018). Violent behavior, aggression, resistance to treatment, and recidivism are associated with psychopathy (Hawes et al., 2018).

Juvenile Psychopathy

Individuals under the age of 18 are not officially diagnosed with psychopathy until they are adults (Geerlings et al., 2020). Psychopathic traits develop during childhood and can remain stable over time (Geerlings et al., 2020; Hawes et al., 2018), especially for serious or recidivistic juvenile offenders (Lee & Kim, 2020). Juveniles with psychopathic tendencies may exhibit behaviors in ways that are slightly different from adults (Viding & McCrory, 2018). Juveniles with psychopathic tendencies exhibit emotional detachment, a lack of empathy, selfishness, irritability, and impulsivity (Hawes et al., 2018). Juveniles may also engage in illegal or delinquent behavior and have behavioral control issues (Hawes et al., 2018). Juveniles with psychopathic tendencies also have difficulties developing lasting and meaningful relationships (Hawes et al., 2018). Forensic assessment instruments, including the frequently cited PCL-YV, have been developed and validated for the evaluation of psychopathy in juveniles.

Assessment of Psychopathy in Juveniles – PCL-YV

The PCL-YV is one of the most commonly used juvenile psychopathy assessment instruments. This assessment instrument was developed by criminal psychologist Dr.

Robert D. Hare and his colleagues (Neumann et al., 2006). The PCL-YV is a modified version of Hare's Revised Psychopathy Checklist and was designed for juveniles ages 12 to 18 years of age (Neumann et al., 2006). The PCL-YV consists of 20 items that measure interpersonal, affective, lifestyle, and antisocial psychopathic characteristics (Neumann et al., 2006). Expert raters collect and evaluate background information from a variety of sources (Neumann et al., 2006). Collateral information and, in some cases, evidence provided directly from the juvenile is used to determine which items on the PCL-YV are applicable (Neumann et al., 2006).

The evaluator rates each item on a scale of 0 to 2 (Neumann et al., 2006). A rating of 0 means the item does not apply (Neumann et al., 2006). A rating of 1 means the item may be applicable (Neumann et al., 2006). A rating of 2 means the item does apply (Neumann et al., 2006). Total psychopathy scores range from 0 to 40 (Neumann et al., 2006). The items on the PCL-YV can be categorized into four factors. Factor 1 includes interpersonal traits, including impression management, pathological lying, and a grandiose sense of self-worth (Neumann et al., 2006). Factor 2 includes affective features, including shallow affect, lack of empathy, and failure to accept responsibility (Neumann et al., 2006). Factor 3 includes lifestyle characteristics, including stimulation seeking, impulsivity, and parasitic orientation (Neumann et al., 2006). Factor 4, which is relevant to this study, includes antisocial psychopathic traits (Neumann et al., 2006). The items included in Factor 4 are poor anger control, revocation of conditional release, early behavior problems, criminal behavior, and criminal versatility (Neumann et al., 2006).

Psychopathy is associated with a high risk of recidivism and poorer treatment outcomes for adult offenders (Lewis, 2018). Poor treatment outcomes are not always the case for juvenile offenders (Lee & Kim, 2020; Lewis, 2018). Psychopathy assessment scores are not used to conclusively project future behavior or treatment amenability for juveniles (Lewis, 2018). Psychopathy assessment instruments are primarily used to develop appropriate treatment plans and make short-term decisions, including facility placements or supervision arrangements (Lewis, 2018). Psychopathy assessments have been used for risk prediction purposes in correctional settings (McCuish & Lussier, 2018). The PCL-YV was used in several studies discussed throughout the literature review. Other psychopathy assessment instruments seen in the literature include the Psychopathic Personality Inventory, Youth Psychopathic Traits Inventory, and the Inventory of Callous Unemotional Traits-Youth Version.

Psychopathy, Delinquency, and Criminal Behavior

Psychopathy is associated with criminal behavior (McCuish & Lussier, 2018). Psychopathy is also positively and moderately correlated with juvenile delinquency (Geerlings et al., 2020). The relationship between psychopathy and juvenile delinquency is not influenced by the type of delinquent behavior, including violent recidivism (Geerlings et al., 2020). Psychopathy is significantly associated with property crimes (DeLisi et al., 2018) and self-reported delinquent behavior (Stylianou et al., 2019). High psychopathy levels are associated with higher levels of alcohol or drug use, conduct issues, and aggression (Colins et al., 2018). CU traits, lack of empathy, and

irresponsibility are the most frequently co-occurring characteristics among serious juvenile offenders (Tsang et al., 2020).

Male juvenile offenders with high levels of psychopathy often exhibit CU traits, low empathy, and manipulative behaviors (Tsang et al., 2020). Male juvenile offenders with high psychopathy levels are also more likely to engage in serious criminal behavior (Tsang et al., 2020). Juveniles who have committed general offenses, including robbery, arson, and murder, typically have higher levels of psychopathic traits than sex offenders (Barroso et al., 2020). Psychopathic personality traits were found to be associated with violent criminal behavior in a previous study (Boccio & Beaver, 2018). Psychopathy was found to not differentiate juvenile sexual offenders from non-sexual violent offenders in a later study (Rose et al., 2020). Higher levels of psychopathy are related to violence in a broader sense (Rose et al., 2020). The significant association between psychopathy and violent criminal behavior is consistent with prior research (Boccio & Beaver, 2018). Psychopaths are disproportionately involved in serious and violent crime (Boccio & Beaver, 2018).

Psychopathy, Behavioral Control Issues, and Aggression

Psychopathy and low self-control are significantly associated with various types of criminal behavior (DeLisi et al., 2018). Low self-control is related to violent offenses, property crimes, self-reported delinquent behavior, and victimization (DeLisi et al., 2018). Self-control was not found to be significantly associated with either criminal behavior or involvement in the criminal justice system in a similar study (Boccio & Beaver, 2018). The results obtained by Boccio and Beaver (2018) differ significantly

from the vast body of research connecting variation in self-control to engagement in criminal behavior. The association between low self-control and criminal behavior may be influenced by genetic factors (Boccio & Beaver, 2018). Self-control and psychopathy are both critical for understanding the most serious forms of criminal behavior (DeLisi et al., 2018).

Psychopathy is associated with aggressive behavior (Garofalo et al., 2020; Thomson & Centifanti, 2018; Thomson et al., 2019). Juveniles who use both proactive and reactive aggression exhibit high levels of psychopathic characteristics (Thomson & Centifanti, 2018). Psychopathy is significantly associated with proactive aggression in juveniles (Thomson & Centifanti, 2018). CU traits, narcissism, and impulsivity are related to aggression (Thomson & Centifanti, 2018). Impulsivity is related to reactive aggression (Thomson & Centifanti, 2018). Narcissism is associated with proactive and reactive aggression (Thomson & Centifanti, 2018). CU traits are associated with high levels of reactive and proactive aggression. Juveniles with CU traits who exhibit high levels of aggression are more likely to develop severe antisocial behavior (Thomson & Centifanti, 2018).

Emotion dysregulation explains the relationship between psychopathy and aggression across offender samples (Garofalo et al., 2020). Psychopathy has a significant indirect effect on aggression through emotion dysregulation (Garofalo et al., 2020). Affective and antisocial psychopathic traits predict physical aggression among both genders (Thomson et al., 2019). Interpersonal psychopathic traits significantly predict verbal aggression (Thomson et al., 2019). Antisocial psychopathic traits significantly

predict indirect aggression (Thomson et al., 2019). Gender influences the relationships between psychopathy, physical aggression, and indirect aggressive behaviors (Thomson et al., 2019). There is a positive correlation between affective psychopathic traits and physical aggression among females (Thomson et al., 2019). There is a positive correlation between antisocial psychopathic traits and indirect aggression among males (Thomson et al., 2019).

Psychopathy and Recidivism

Offenders with psychopathy show particularly high rates of criminal recidivism (Pechorro et al., 2018). Psychopathy is associated with current and future offending behavior among juveniles (Geerlings et al., 2020). The risk for future nonviolent arrests is high for male juvenile offenders with high levels of psychopathy (Colins et al., 2018). Impulsivity, as measured by the Antisocial Process Screening Device-Self-Report, is associated with recidivism among male juvenile offenders (Pechorro, Braga, et al., 2019). Narcissism, as measured by the Narcissistic Personality Inventory-13, is associated with recidivism among incarcerated female juvenile offenders (Pechorro et al., 2018).

Juvenile offenders who exhibit antisocial behaviors have the highest rates for recidivism (Mulder et al., 2019). Juvenile offenders with high total scores on the Antisocial Process Screening Device-Self-Report are faster to violently and nonviolently re-offend than those with lower scores (Goulter et al., 2018). Grandiose-manipulative traits are associated with nonviolent recidivism (Goulter et al., 2018). CU traits and impulsivity predict nonviolent recidivism (Goulter et al., 2018). Impulsivity also predicts violent recidivism (Goulter et al., 2018).

Childhood Traumatic Experiences

Trauma is a negative affective response to a distressing situation or event (Ireland et al., 2020). Developmental trauma refers to traumatic experiences that occur during childhood, including repeated instances of abuse or violence exposure (Ireland et al., 2020). Children who have experienced trauma are at risk for serious long-term behavioral and psychological impairments (Ireland et al., 2020). Trauma has the most significant negative effect on mental functioning and development in the first decade of life (Ireland et al., 2020). Trauma exposure leads to behavioral problems, including aggression, impulse control issues, dissociation, and maladaptive interpersonal traits (Ireland et al., 2020). Childhood trauma is associated with emotional dysregulation, impulsivity, and cognitive deficits (Ireland et al., 2020).

Trauma and Psychopathy

Abuse (Baglivio et al., 2020; Farina et al., 2018) and exposure to violence (Tsang, 2018) are associated with psychopathy among juvenile offenders. Childhood maltreatment (Durand & de Calheiros Velozo, 2018) and adverse or traumatic experiences (Moreira et al., 2020) are associated with psychopathic traits exhibited in adulthood. Individuals with psychopathic tendencies and high levels of negative affect are more likely to have experienced abuse during childhood than those with lower levels (Moreira et al., 2020). Juveniles who have been experienced adverse events are more likely to engage in higher rates of violence, criminal behavior, and substance use than those not exposed to trauma-inducing events (Moreira et al., 2020). Physical abuse is a significant predictor of antisocial personalities (Moreira et al., 2020).

Childhood trauma is associated with psychopathy for both male and female juvenile offenders (Farina et al., 2018). Males generally present higher levels of psychopathy traits than females (Durand & de Calheiros Velozo, 2018). Females typically report more childhood abuse and negative parental behaviors than males (Durand & de Calheiros Velozo, 2018). Females with high levels of boldness or risk-taking are more likely to have been sexually abused during childhood (Durand & de Calheiros Velozo, 2018). Females who display disinhibited behaviors are more likely to have experienced neglect and sexual abuse (Durand & de Calheiros Velozo, 2018).

The associations between physical abuse, emotional trauma, and psychopathy are stronger for females (Farina et al., 2018). This finding is consistent with the results obtained by Durand and de Calheiros Velozo (2018). Males and females may respond differently to traumatic experiences (Durand & de Calheiros Velozo, 2018; Farina et al., 2018). Significant associations between trauma experiences, psychopathy, and criminal behavior were also found in a more recent study (Baglivio et al., 2020). Researchers assessed whether trauma exposure leads to the development of psychopathic traits, which then has direct effects on criminal behavior among juvenile offenders (Baglivio et al., 2020). Childhood abuse, neglect, and a dysfunctional living environment are associated with psychopathic traits (Baglivio et al., 2020). A dysfunctional family life, abuse, and neglect are also related to juvenile delinquency (Baglivio et al., 2020). Trauma exposure may influence criminal behavior through affective psychopathic features, including callousness and emotional detachment (Baglivio et al., 2020).

Childhood Trauma and Criminal Behavior

Childhood traumatic experiences are associated with violent criminal behavior (Altintas & Bilici, 2018; Johnson, 2018), sex-related offenses (Brown & Grady, 2019), and serious delinquency (Perez et al., 2018). Trauma is associated with violent felony arrests (Johnson, 2018; Perez et al., 2018). Juveniles who have experienced three or more types of trauma are 1.7 to 3 times more likely to have a violent felony arrest than those experiencing only one traumatic event (Johnson, 2018). Childhood trauma and adverse family experiences are prevalent among incarcerated offenders (Altintas & Bilici, 2018). Post-traumatic stress symptoms, maltreatment, and adverse childhood experiences are significantly higher among juvenile offenders than the general population (Vitopoulos et al., 2018). Maltreatment is common among female juvenile offenders (Vitopoulos et al., 2018).

Maltreatment and adverse childhood experiences are significantly related to criminogenic needs (Vitopoulos et al., 2018). A history of mental health issues, sexual abuse, and violent victimization are predominant among incarcerated female offenders (Altintas & Bilici, 2018). A criminal history, recidivism, substance use, and sexual offending are more common among incarcerated male offenders than females (Altintas & Bilici, 2018). There is a potential connection between trauma and criminal behavior in terms of recidivism (Altintas & Bilici, 2018). Maltreatment predicts recidivism for both male and female juvenile offenders (Vitopoulos et al., 2018). Post-traumatic stress and adverse childhood experiences are not significant predictors of recidivism when criminogenic needs are also assessed (Vitopoulos et al., 2018). Adverse childhood

experiences have not been shown to predict recidivism among serious juvenile offenders (Craig et al., 2020). A serious juvenile offender's criminal justice history, including prior adjudications, incarceration length, and correctional misconduct, is a significant predictor of recidivism (Craig et al., 2020).

Trauma is associated with the development of severe maladaptive behaviors (Perez et al., 2018). Adverse childhood experiences are associated with aggression, impulsivity, delinquent peer imitation, academic difficulties, substance abuse, and psychological health problems (Perez et al., 2018). Childhood trauma is related to feelings of helplessness and hopelessness among juvenile offenders (Brown & Grady, 2019). Helplessness is positively correlated with sexual trauma, physical abuse, emotional abuse, physical neglect, and emotional neglect (Brown & Grady, 2019). Hopelessness is associated with emotional abuse, physical neglect, and emotional neglect (Brown & Grady, 2019). Hopelessness is not related to sexual or physical abuse (Brown & Grady, 2019). Physical neglect during childhood predicts violent behavior among incarcerated male juvenile offenders (McGuigan et al., 2018).

Helplessness is associated with the seriousness of sexual offenses and non-sexual offending (Brown & Grady, 2019). Helplessness is related to general delinquency, property damage, and disorderly conduct (Brown & Grady, 2019). Hopelessness is associated with general delinquency and property offenses (Brown & Grady, 2019). Helplessness predicts sexual and non-sexual criminal behavior when controlling for trauma (Brown & Grady, 2019). Hopelessness predicts non-sexual criminal behavior when controlling for trauma (Brown & Grady, 2019).

Childhood Trauma and Antisocial Behavior

Childhood maltreatment is associated with antisocial behavior (Braga et al., 2018). Maltreatment assessed in both childhood and adolescent years is strongly correlated to antisocial outcomes (Braga et al., 2018). Maltreatment has long-term effects into adulthood (Braga et al., 2018). Maltreated juveniles are almost two times more likely to engage in antisocial behavior during adulthood than non-maltreated adolescents (Braga et al., 2018). There is also a strong correlation between antisocial behavior and victimization among juveniles (Van Domburgh et al., 2019). Persistent antisocial behavior and victimization are related to poor mental health later in life (Van Domburgh et al., 2019). Antisocial behavior and victimization are also related to poor general functioning (Van Domburgh et al., 2019). Early-onset juvenile offenders are at high risk for persistence in antisocial behavior (Van Domburgh et al., 2019). Antisocial behavior is related to a heightened risk for victimization (Van Domburgh et al., 2019). High-risk juvenile offenders are more likely to exhibit future antisocial behavior and experience victimization than their lower risk level peers (Van Domburgh et al., 2019).

Parenting Factors and Psychopathy

There are significant associations between childhood maltreatment, parenting behaviors, and psychopathy (Durand & de Calheiros Velozo, 2018; Glenn, 2019; Ray, 2018). Parenting factors associated with psychopathic trait development are rejection, overprotection, and emotional warmth (Durand & de Calheiros Velozo, 2018). Parenting behaviors, including parental sensitivity, hostility, and insecure attachment, are associated with the development of CU traits (Glenn, 2019; Ray, 2018; Van der Zouwen

et al., 2018). Authoritative parenting, including warmth and supervision, can have a positive effect on psychopathic traits, particularly CU traits (Ray, 2018). Poor parenting is associated with more stable and increasing patterns of psychopathic behavior over time (Ray, 2018). Individuals who have experienced more negative parenting have the highest and most stable levels of psychopathy (Ray, 2018). Psychopathy evaluated at age 13 is significantly associated with psychopathy assessed at age 24 for juveniles who have been exposed to more physical punishment by their caregivers (Ray, 2018). This positive association is seen with interpersonal and antisocial psychopathic traits (Ray, 2018).

There is a significant small to moderate positive relationship between insecure attachment and CU psychopathic traits (Van der Zouwen et al., 2018). Poor parenting, including inadequate supervision and weak attachment, is also associated with CU traits (Ray, 2018). Parental supervision also has a significant impact on offending behavior (Flanagan et al., 2019). The strength of social bonds helps parents to maintain sufficient knowledge regarding an adolescent's activities (Flanagan et al., 2019). CU traits are more associated with low maternal warmth than with emotional and physical neglect (Bisby et al., 2017). Maternal warmth mediates the association between emotional neglect and CU traits (Bisby et al., 2017). There is a negative correlation between parental warmth and psychopathic traits (Ray, 2018). Emotionally cold and neglectful parenting may contribute to the development of CU traits in male juvenile offenders (Bisby et al., 2017).

Parental rejection predicts childhood maltreatment (Durand & de Calheiros Velozo, 2018). Paternal acceptance and maternal rejection predict criminal recidivism among male juvenile delinquents (Miloš et al., 2019). There is a positive correlation

between paternal overprotection and sexual abuse (Durand & de Calheiros Velozo, 2018). Physical punishment, which is synonymous with parental hostility, is associated with interpersonal and antisocial psychopathy features (Ray, 2018). A dysfunctional family environment has a significant impact on an adolescent's personality (Durand & de Calheiros Velozo, 2018). Dysfunctional living conditions can increase the likelihood of adolescents developing psychopathic traits (Durand & de Calheiros Velozo, 2018). Male juvenile offenders who reported low maternal care are more likely to exhibit CU traits (Durand & de Calheiros Velozo, 2018). Female juvenile offenders are more likely to develop psychopathic traits if they come from a dysfunctional family background (Durand & de Calheiros Velozo, 2018).

Exposure to Violence and Psychopathy

Violence exposure is associated with psychopathy and antisocial behavior among serious juvenile offenders (Tsang, 2018). Violence exposure and post-traumatic stress disorder are independently related to self-reported delinquent behavior (Tsang, 2018). The effect of post-traumatic stress disorder on antisocial behavior is minimal (Tsang, 2018). There are differential associations between post-traumatic stress disorder symptoms and psychopathic traits (Tsang, 2018). Violence exposure, as a victim or witness, is associated with increased delinquent and antisocial behavior (Tsang, 2018). Juveniles, who experienced more violent incidents, either as a victim or a witness, are more likely to engage in more criminal activities (Tsang, 2018). Violence exposure is also associated with more definite overall psychopathic tendencies (Tsang, 2018). There is a stronger correlation between violence exposure and antisocial psychopathic

characteristics than interpersonal or affective traits (Tsang, 2018). Domestic violence exposure may contribute to the development of manipulative and interpersonal psychopathic traits (Moreira et al., 2020).

Psychopathy is related to victimization among serious juvenile offenders (Daigle et al., 2020). Psychopathic behaviors, including impulsivity, violence, and delinquency, are associated with a higher risk for victimization (Daigle et al., 2020). There is a significant positive correlation between victimization, violence, and psychopathy among male juvenile offenders (Durand & de Calheiros Velozo, 2018). Psychopathy is also related to risky behaviors, including peer delinquency, drug use, weapon carrying, and criminal behavior (Daigle et al., 2020). The risky behaviors engaged in by serious juvenile offenders are related to an increase in the risk of victimization (Daigle et al., 2020). Community violence exposure is associated with CU traits and violent behavior (Walters, 2018). Violence exposure may prime or elicit aggressive criminal behavior in juvenile offenders with strong CU traits (Walters, 2018).

Gang Involvement

Gang members engage in different types of criminal behavior, including violent crime, property crime, substance use, drug sales, and gun crime (Thornberry et al., 2018). Juvenile gang membership is associated with higher incarceration rates in later adulthood (Thornberry et al., 2018). Gang membership is associated with reduced school commitment, teen parenthood, unemployment, increased commitment to antisocial peers, and anger identity development (Thornberry et al., 2018). Risk factors for gang involvement include victimization, inadequate parental supervision, aggressive behavior,

and delinquent peer associations (Kubik et al., 2019). Violence exposure, self-reported criminal behavior, and incarceration length are associated with a higher risk for gang involvement among serious juvenile offenders (Merrin et al., 2020). Delinquent peer associations or relationships with justice-involved friends increase the risk of gang involvement (Merrin et al., 2020). The ability to resist the influence of peers is a protective factor for gang involvement (Merrin et al., 2020). Impulse and behavioral control decrease the risk of gang involvement among serious juvenile offenders (Merrin et al., 2020).

Gangs are not homogenous groups (Thornberry et al., 2018). Affiliation with the same gang may be a heterogenous experience (Thornberry et al., 2018). Two types of individuals have been identified based on their motivations for gang involvement. The first type is individuals who affiliate with a gang to enhance their status amongst their peers (Thornberry et al., 2018). The second type is individuals who join a gang because they want to associate with a group that reflects their criminal or antisocial behavior (Thornberry et al., 2018). Intervention programs for juvenile offenders are based on the premise that group offenders are influenced by their social networks (Thornberry et al., 2018). This concept is based on the interactional theory (Thornberry et al., 2018). The interactional theory is related to the IPM-CSI criminal association component (Boduszek et al., 2016).

Gang Involvement and Psychopathy

Relationships with delinquent peers are associated with psychopathic trait development (Ray, 2018). Antisocial peers can reinforce psychopathic behavior through

social interactions (Ray, 2018). Juveniles with high and stable levels of CU traits are more inclined to associate with delinquent peers (Ray, 2018). High psychopathy levels are associated with delinquent peer associations and offending behavior among serious juvenile offenders (Bryson et al., 2020). The influence of delinquent peers is an important psychosocial risk factor associated with psychopathic behavior among juvenile offenders (Bryson et al., 2020). Greater exposure to delinquent peers translates to more offending behavior among serious juvenile offenders (Bryson et al., 2020).

There are differing perspectives among researchers regarding the association between psychopathy and gang involvement (Carson & Ray, 2019). Some researchers argue that individuals with high psychopathy levels are attracted to gang life, while others say these individuals will not fit into the gang lifestyle (Carson & Ray, 2019). The association between psychopathy and gang involvement is unclear (Carson & Ray, 2019). There are no significant differences found between gang and nongang involved serious juvenile offenders (Carson & Ray, 2019). Juveniles scoring high on antisocial and lifestyle psychopathy features are more likely to be involved with gangs (Carson & Ray, 2019). Juveniles with high scores on specific psychopathic traits may be attracted to the gang lifestyle (Carson & Ray, 2019). The relationship between gang involvement and psychopathy should be examined at the facet or trait level (Carson & Ray, 2019).

Gang Involvement, Criminal Behavior, and Recidivism

Gang members are involved in almost all types of criminal behavior at a higher level than nongang affiliated individuals (Thornberry et al., 2018). This higher criminal activity rate among gang members is observed across gender, racial groups, and

ethnicities (Thornberry et al., 2018). Adolescent gang involvement increases the odds of being arrested (Connolly & Jackson, 2019) and incarcerated (Timchenko et al., 2020). Criminal behavior associated with gang involvement includes violent offenses, property crimes, drug use, drug sales, and gun violence (Connolly & Jackson, 2019; Stodolska et al., 2019; Thornberry et al., 2018). Gang members are perpetrators, victims, and witnesses of violent acts (Connolly & Jackson, 2019; Peterson et al., 2018; Stodolska et al., 2019).

Violent acts perpetrated by gang members include physical assaults, shootings, and sexual violence (Connolly & Jackson, 2019; Stodolska et al., 2019; Timchenko et al., 2020). Females in predominately male gangs are most likely to be both perpetrators and victims (Peterson et al., 2018). Males in sex-balanced gangs are most likely to be offenders and victims (Peterson et al., 2018). Male gang members more frequently engage in criminal behavior than females (Auyong et al., 2018; Peterson et al., 2018; Watkins & Melde, 2018). The influence of gang involvement on serious offending behavior is generally more significant for female gang members (Peterson et al., 2018; Watkins & Melde, 2018).

Gang involvement is also associated with recidivism (Kennedy et al., 2019; Takahashi & Evans, 2018; Wolff, Baglivio, Limoncelli, et al., 2020). Gang status significantly increases the odds of rearrests among juvenile offenders (Wolff, Baglivio, Limoncelli, et al., 2020). Gang membership and behavioral disorders are critical in explaining recidivism among male juvenile offenders (Wolff, Baglivio, Limoncelli, et al., 2020). Behavioral disorders associated with recidivism among male juvenile offenders

are conduct disorder, intermittent explosive disorder, oppositional defiant disorder, and antisocial personality disorder (Wolff, Baglivio, Limoncelli, et al., 2020). Delinquent peer associations could be more influential factors in juvenile recidivism than shown for adult offenders (Wolff, Baglivio, Limoncelli, et al., 2020). The influence of peers decreases while mental or behavior issues play a more significant role in driving gang involvement and criminal behavior among adults (Wolff, Baglivio, Limoncelli, et al., 2020).

Gang Involvement and Trauma

Childhood maltreatment (Kubik et al., 2019) and adverse experiences (Wolff, Baglivio, Klein et al., 2020) are associated with gang involvement. Abuse and neglect are significantly associated with a higher risk of gang involvement (Kubik et al., 2019). Domestic violence exposure, physical abuse, and sexual trauma are associated with gang involvement among Latina female juveniles (Wolff, Baglivio, Klein et al., 2020). Neglect, physical abuse, and substance use are associated with gang involvement among American youth (Wolff, Baglivio, Klein et al., 2020). Substance use (Smith et al., 2019; Wolff, Baglivio, Klein et al., 2020) and post-traumatic stress symptoms are prevalent among juvenile gang members (Dierkhising et al., 2019).

The strongest predictors of gang involvement among American juveniles are individual-level characteristics, peer associations, community risk factors, and family circumstances (Smith et al., 2019; Wolff, Baglivio, Klein et al., 2020). These gang-related predictors are also prevalent among European juveniles (Smith et al., 2019; Wolff, Baglivio, Klein et al., 2020). Juveniles who have witnessed violence or murder,

engaged in physical fights, and have experienced a life-threatening situation are more likely to affiliate with gangs than those with more positive childhood experiences (Wolff, Baglivio, Klein et al., 2020). High parental hostility and having a justice-involved father increase the risk of gang involvement (Merrin et al., 2020). Juvenile offenders who are involved in gangs are significantly more likely to have experienced a traumatic loss than nongang members (Dierkhising et al., 2019). Gang involvement is also associated with community violence exposure (Dierkhising et al., 2019) and victimization (Connolly & Jackson, 2019; Timchenko et al., 2020; Watkins & Melde, 2018).

Studies Related to the Research Questions

Psychopathy in juveniles is associated with criminal behavior (McCuish & Lussier, 2018; Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018), delinquency (Geerlings et al., 2020), childhood trauma (Baglivio et al., 2020; Boduszek et al., 2019; Farina et al., 2018), and delinquent peer associations (Mallion & Wood, 2018; Ray, 2018). Psychopathy is associated with violent behavior, nonviolent offending, recidivism, poor treatment outcomes, emotional impairments, and cognitive deficits among juvenile offenders (Pechorro, Seto, et al., 2019; Ridder & Kosson, 2018). Psychopathy is related to current and future offending behavior among juvenile offenders (Geerlings et al., 2020). Psychopathy and low self-control are associated with different types of offending behaviors (DeLisi et al., 2018). Low self-control is significantly associated with violent offenses, property crimes, and delinquency (DeLisi et al., 2018). Offenders with psychopathic tendencies show high rates of recidivism (Pechorro et al., 2018). Juvenile

offenders who exhibit antisocial behaviors have the highest rates of recidivism (Mulder et al., 2019).

Interpersonal and lifestyle psychopathic traits are associated with antisocial behavior among juvenile offenders (Ridder & Kosson, 2018). Interpersonal psychopathic traits include manipulation and pathological lying (Ridder & Kosson, 2018). Lifestyle psychopathic traits include stimulation seeking, impulsivity, and irresponsibility (Ridder & Kosson, 2018). Interpersonal and lifestyle psychopathic characteristics are also related to violence exposure (Ridder & Kosson, 2018). Affective traits have commonly been to explain behavior exhibited by juvenile offenders with psychopathic tendencies (Ridder & Kosson, 2018).

Childhood trauma is associated with psychopathy for both male and female juvenile offenders (Farina et al., 2018). Male juvenile offenders with psychopathic tendencies often have a history of living in stressful environments (Farina et al., 2018). Abuse, neglect, and dysfunctional living conditions are associated with juvenile delinquency (Baglivio et al., 2020). There are significant associations between childhood maltreatment, parenting behaviors, and psychopathy (Durand & de Calheiros Velozo, 2018; Glenn, 2019; Ray, 2018). Parental rejection, neglect, overprotection, and low emotional warmth are associated with psychopathy (Durand & de Calheiros Velozo, 2018; Glenn, 2019).

Low parental warmth is related to grandiose-manipulative attributes, CU traits, impulsive-irresponsible conduct, and antisocial behavior among serious juvenile offenders (Ray, 2018). Changes in CU traits and antisocial behavior are related to low

parental warmth among male juvenile offenders (Ray, 2018). Violence exposure is associated with changes in grandiose-manipulative traits (Ray, 2018). Parental sensitivity, hostility, and insecure attachment are associated with CU traits (Glenn, 2019; Ray, 2018; Van der Zouwen et al., 2018). Psychopathy is also related to victimization among serious juvenile offenders (Daigle et al., 2020). Impulsivity, violent behavior, and delinquency are associated with a higher risk for victimization (Daigle et al., 2020).

Delinquent or antisocial peer associations are related to psychopathic behavior (Ray, 2018). Juveniles with high and stable CU traits are more inclined to associate with delinquent peers (Ray, 2018). Antisocial behavior, CU traits, lack of empathy, and grandiose-manipulative behaviors are associated with gang membership (Mallion & Wood, 2018). Gang involvement is associated with violent crime and delinquency (Connolly & Jackson, 2019; Stodolska et al., 2019; Timchenko et al., 2020). Juveniles scoring high on antisocial and lifestyle psychopathic traits are more likely to be involved with gangs (Carson & Ray, 2019). Nongang involved juvenile offenders are more likely to have higher scores on affective and interpersonal psychopathy features (Carson & Ray, 2019). Factor or trait level analysis could be useful for examining the relationship between gang involvement and psychopathy (Carson & Ray, 2019).

Interpersonal relationships can function as protective or risk factors for psychopathy (Backman et al., 2018). The quality of and antisocial influence in relationships can negatively or positively affect psychopathic tendencies among juvenile offenders (Backman et al., 2018). Relationship characteristics are related to changes in psychopathic behavior over time (Backman et al., 2018). Prosocial and high-quality

relationships are associated with lower psychopathic traits (Backman et al., 2018). Relationships with antisocial peers are associated with higher psychopathic traits (Backman et al., 2018).

Juveniles may experience violence, abuse, and victimization before gang involvement (Kubik et al., 2019; Thornberry et al., 2018). A juvenile may join a gang to get away from stressful living conditions (Kubik et al., 2019; Mallion & Wood, 2018). Violence and victimization are also aspects of gang life (Thornberry et al., 2018). Violence exposure can contribute to the development of maladaptive behaviors, including aggression and antisocial behavior (Lujan & Fanniff, 2019; Tsang, 2018). Childhood maltreatment (Kubik et al., 2019) and adverse or traumatic experiences (Wolff, Baglivio, Klein, et al., 2020) are also associated with gang involvement.

Psychopathic traits (Mallion & Wood, 2018) and childhood maltreatment (Fang et al., 2020) are related to moral disengagement. Moral disengagement is a reasoning process used by gang members to rationalize their criminal and violent behavior (Mallion & Wood, 2018). Juveniles who have witnessed violent acts or experienced a trauma-inducing situation are more likely to associate with gangs than those with less adverse childhood experiences (Wolff, Baglivio, Klein, et al., 2020). Researchers have recently investigated the relationships between traumatic experiences, gang involvement, and core affective psychopathic traits (Mendez et al., 2020). There is a significant association between trauma exposure and gang involvement among a sample of racially diverse juvenile offenders (Mendez et al., 2020). CU psychopathic traits explain the relationship

between trauma exposure and gang involvement for non-Hispanic White juvenile offenders (Mendez et al., 2020).

Researchers have primarily focused on affective psychopathic traits (Geerlings et al., 2020; Salekin et al., 2018). Researchers and criminal justice professionals cannot gain a complete understanding of how psychosocial factors may contribute to overall psychopathic behavior by focusing only on affective psychopathic characteristics (Salekin et al., 2018). Research is needed to investigate the relationships between childhood trauma, gang involvement, and antisocial psychopathic traits (Farina et al., 2018; Salekin et al., 2018). Traumatic experiences (Farina et al., 2018) and gang involvement (Carson & Ray, 2019) are associated with various delinquency outcomes. The determination of whether gang involvement influences the relationship between childhood trauma and antisocial psychopathic traits can help clarify related externalizing behaviors (Farina et al., 2018). RQ1 was used to examine the predictive ability of childhood trauma. RQ2 was used to examine the predictive ability of gang involvement. RQ3 was used to examine the potential influence of gang involvement on the association between traumatic experiences and antisocial psychopathic traits.

Summary and Conclusions

Psychopathy is associated with serious criminal behavior (Tsang et al., 2020), delinquency (Colins et al., 2018), behavioral control issues (DeLisi et al., 2018), and recidivism (Geerlings et al., 2020). The identification of behavioral problems exhibited by juvenile offenders with psychopathic tendencies is critical for assessment, placement, and treatment purposes (Lewis, 2018). Psychosocial factors associated with psychopathic

traits include childhood trauma (Farina et al., 2018), parenting factors (Baglivio et al., 2020), exposure to violence (Tsang, 2018), and gang involvement (Carson & Ray, 2019; Mendez et al., 2020). Criminal justice professionals can use research on psychopathy to develop specialized treatment programs (Lewis, 2018). Research findings can also be used to develop and appropriately implement effective intervention programs for gang-involved juvenile offenders.

Psychopathy is associated with criminal behavior among adults and juveniles (Tsang et al., 2020). A significant difference between adults and juveniles is the prognosis for juvenile offenders with psychopathic tendencies to be successfully treated (Lewis, 2018). Juveniles have a better prognosis than adults because they are still in the developmental stages of life (Lewis, 2018). Maturation could result in a decrease in psychopathic tendencies over time for juveniles (Lee & Kim, 2020; Lewis, 2018). Potential positive changes in psychopathic traits as a result of maturation should not be assumed (Lewis, 2018). Interventions to begin the process of extinguishing psychopathic tendencies in juveniles are required (Lewis, 2018). Juveniles with histories of trauma are treatable (Farina et al., 2018). Treatment and intervention modalities should be tailored to address developmental issues related to trauma exposure (Farina et al., 2018).

Researchers have primarily focused on the affective features of psychopathy (Geerlings et al., 2020; Mendez et al., 2020; Salekin et al., 2018). Research is needed to explicitly investigate the associations between the behavioral aspects of psychopathy and psychosocial risk factors. Researchers have not directly examined the relationships between childhood traumatic experiences, gang involvement, and antisocial psychopathic

traits among juvenile offenders. Traumatic experiences (Baglivio et al., 2020; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson & Ray, 2019; Mendez et al., 2020) are important risk factors related to psychopathic behavior. Trauma exposure and associations with criminal peers are components of the IPM-CSI (Boduszek et al., 2016).

There are four psychosocial factors related to the development of CSI. The first factor is an identity crisis resulting from weak societal bonds and rejection by peers (Boduszek et al., 2016). An identity crisis during an individual's childhood years is related to inadequate parenting and poor parental attachment (Boduszek et al., 2016). The second factor is exposure to an antisocial or criminal environment (Boduszek et al., 2016). The third factor is the need to identify with a criminal or antisocial group to protect one's self-esteem (Boduszek et al., 2016). The fourth factor is the moderating role of personality traits (Boduszek et al., 2016). Childhood trauma, gang involvement, and antisocial psychopathic traits either directly or indirectly correspond to at least one of the psychosocial factors identified in the IPM-CSI.

Psychopathy is a multidimensional personality disorder with a complex etiology (Viding & McCrory, 2018). Criminal justice professionals must understand the interplay between psychosocial factors and the multiple etiologies of psychopathic behavior (Farina et al., 2018). Each psychopathic trait category and associated risk factors should be explicitly examined (Lewis, 2018; Ridder & Kosson, 2018). Serious juvenile offenders classified as having psychopathic tendencies often exhibit PCL-YV Factor 4 antisocial traits (Mulder et al., 2019). The PCL-YV Factor 4 antisocial traits are serious criminal behavior (Tsang et al., 2020), delinquency (Colins et al., 2018), behavioral control issues

(DeLisi et al., 2018), and recidivism (Geerlings et al., 2020). PCL-YV Factor 4 antisocial traits were the focus of this present study. The research design to examine the associations between the study variables included regression and moderation analyses, which are frequently used by researchers in the field (Kubik et al., 2019; Mendez et al., 2020; Spink & Woodfield, 2019). A full description of the research design, including detailed information about the archival data set for this study, is provided in Chapter 3.

Chapter 3: Research Method

This quantitative study was designed to assess the predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits among serious juvenile offenders. The influence of gang involvement on the relationship between childhood trauma and antisocial psychopathic traits was also examined. Childhood trauma (Boduszek et al., 2019; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson & Ray, 2019; Mallion & Wood, 2018) are associated with psychopathy among juvenile offenders. Researchers have not explicitly examined associations between childhood trauma, gang involvement, and antisocial psychopathic traits (Farina et al., 2018). The intent was to determine if childhood trauma and gang involvement are significant predictors of antisocial psychopathic traits among serious juvenile offenders.

This chapter includes a comprehensive explanation of the research design for this study. A detailed description of the archival dataset, study population, sampling strategy, and variables is provided. The instruments used to measure each variable and how each variable was operationalized are explained. Data analyses involving the use of regression models, including interaction variables, are discussed. Data preparation procedures are described. Potential threats to validity and ethical considerations are also discussed.

Research Design and Rationale

The independent variables were childhood trauma and gang involvement. Gang involvement was also assessed as a moderator variable. Childhood trauma is defined as traumatic experiences involving abuse, neglect, psychological maltreatment, or exposure to violence (Farina et al., 2018). Traumatic childhood experiences, including various

forms of abuse (Farina et al., 2018), psychological harm (Boduszek et al., 2019), low parental warmth (Glenn, 2019), and violence exposure (Ray, 2018) are associated with psychopathy among juvenile offenders. Parental warmth, parental hostility, and violence exposure were examined in this study. Gang involvement is defined as an affiliation with a group of delinquent or antisocial peers (Thornberry et al., 2018). Gang involvement is associated with antisocial behavior among juvenile offenders (Carson & Ray, 2019; Mallion & Wood, 2018). The dependent variables for this study were antisocial psychopathic traits and behaviors as measured by the PCL-YV (Mulvey, 2017). PCL-YV Factor 4 antisocial psychopathic traits are poor anger control, early behavior problems, serious criminal behavior, revocation of conditional release, and criminal versatility (Neumann et al., 2006).

A quantitative nonexperimental research design was used to examine the associations between childhood traumatic experiences, gang involvement, and antisocial psychopathic traits among serious juvenile offenders. A nonexperimental approach was appropriate for this study because participants were not randomly assigned to specific groups. The independent variables were also not manipulated. The research questions were devised to examine a non-causal statistical relationship between the study variables. A quantitative methodology using regression analyses was used to examine the predictive relationship between the independent and dependent variables.

Archival data were analyzed for this study. Access to information concerning juvenile offenders is not as restrictive when archival data is used. Juvenile offenders are a protected and vulnerable population. Data were requested from the Inter-university

Consortium for Political and Social Research (ICPSR) website. There were no financial costs associated with requesting data via the ICPSR data management system. The datasets required had restricted access (ICPSR, 2020). A potential time constraint could have arisen if required documents were not appropriately completed and submitted through the web-based data request system. Restricted data request applications are generally approved in 2 to 4 weeks after submission (ICPSR, 2020).

Researchers in the forensic psychology field have frequently used quantitative cross-sectional study designs to examine relationships between psychosocial factors associated with CSI (Spink & Woodfield, 2019). A cross-sectional study involves the examination of data from a population at one specific time point. The study participants were selected based on particular variables of interest. Baseline data for gang and nongang involved serious juvenile offenders were analyzed for this study. Nonexperimental cross-sectional research designs have been used in several studies involving psychopathy (Geerlings et al., 2020), gang involvement (Carson & Ray, 2019; Kubik et al., 2019), childhood trauma (Farina et al., 2018; Tsang, 2018).

Methodology

Population

The target population was male and female serious juvenile offenders. The target population size was based on the number of participants who took part in the PTD study. The PTD study was a 7-year longitudinal survey of serious juvenile offenders (Mulvey et al., 2014; Schubert et al., 2004). Researchers comprehensively investigated life changes in a variety of areas associated with criminal behavior (Mulvey et al., 2014; Schubert et

al., 2004). There were 1,354 juvenile offenders from criminal justice systems in Maricopa County (Phoenix), Arizona (*n* = 654), and Philadelphia County, Pennsylvania (*n* = 700), who initially participated in the study (Mulvey et al., 2014; Schubert et al., 2004). The participants were at least 14 years old and under 18 at the time of their adjudicated offense (Mulvey et al., 2014; Schubert et al., 2004).

The participants in the PTD study were convicted of felony-level offenses (Mulvey et al., 2014; Schubert et al., 2004). The study population also included a small number of juvenile offenders who were convicted of serious misdemeanor property crimes, sexual assault, or weapons offenses (Mulvey et al., 2014; Schubert et al., 2004). The mean age of the participants was 16.04 years (Mulvey, 2017). The majority of study participants were males (86.4%, *n* = 1,170). The participants were from diverse ethnic backgrounds. The study population was 41.4% Black, 33.5% Hispanic, 20.2% White, and 4.8% described their ethnicity as other (Mulvey, 2017).

Sampling and Sampling Procedures

The PTD study researchers systematically drew the study sample from the population of interest (Mulvey et al., 2014). Juvenile offenders in Philadelphia and Phoenix were selected for the PTD study because of the high serious crime rates in those areas (Mulvey et al., 2014). The diversity of potential participants was also a significant factor in site selection (Mulvey et al., 2014). There was also a sufficient number of serious female juvenile offenders (Mulvey et al., 2014). The researchers recruited 1,354 male and female juvenile offenders who were convicted of felony offenses or serious misdemeanors (Mulvey et al., 2014). The entire PTD study sample was used for this

study except for cases with missing data or outliers. Gang and nongang involved serious juvenile offenders were the focus of this study. There were 315 (23.3%) participants who reported being in a gang at baseline (Mulvey, 2017). Gang-involved participants were either in a gang at baseline or former members (Mulvey, 2017).

Power Analysis

There are three parameters a researcher needs to calculate an appropriate sample size for a study. The parameters are the alpha value, power level, and effect size (Cohen, 1992; Olvera Astivia et al., 2019). Alpha is the probability of rejecting a null hypothesis when it is true (Cohen, 1992). An alpha level of .05 is typically used when the statistical analysis is conducted in the social sciences field (Spink & Woodfield, 2019). Power is the probability that the null hypothesis will be correctly rejected (Cohen, 1992). A generally accepted power is .80 (Cohen, 1992). A medium effect size is typically acceptable in the sample size calculation (Olvera Astivia et al., 2019). A more realistic effect size could be determined by reviewing the literature related to the study (Olvera Astivia et al., 2019).

Power analysis for logistic regression was conducted using the guidelines established in Cohen (1992). The G*Power 3.1.7 (Faul et al., 2013) power analysis software was used to determine a sufficient sample size with an alpha of 0.05, power set at 0.80, a medium effect size (odds ratio = 1.72), and a two-tailed test. Conventional values were used for alpha and power (Cohen, 1992). A medium effect size was appropriate as moderate effects are generally found in the research literature involving the study variables and related constructs (Spink & Woodfield, 2019). The minimum sample size for this study was 177.

Archival Data

Data from the PTD project were used for this study. Juveniles who were 14 to 18 years old at the time they were convicted of at least one serious offense were eligible to participate in the study (Mulvey et al., 2014; Schubert et al., 2004). An offense was considered serious if it was a felony offense (Mulvey et al., 2014; Schubert et al., 2004). A small number of juveniles who had more serious misdemeanor offenses, including sexual assault and weapons crimes, were also included in the study (Mulvey et al., 2014; Schubert et al., 2004). The proportion of males who were included in the sample who had drug convictions was limited to 15% (Schubert et al., 2004). The restriction was implemented to ensure that the sample was not predominantly composed of drug offenders (Schubert et al., 2004).

The participants were first interviewed between November, 2000, and March, 2003 (Mulvey et al., 2014; Schubert et al., 2004). Each participant was followed for 84 months (Schubert et al., 2004). Interviews were conducted every six months for the first six follow-up periods (Schubert et al., 2004). Participants were then interviewed yearly for the last four follow-up periods (Schubert et al., 2004). The final interview took place in March, 2010 (Schubert et al., 2004). The data consist of semistructured clinical assessments and self-reported information provided by the juvenile (Schubert et al., 2004). The information was then validated using official records (Schubert et al., 2004). Researchers also interviewed parents and guardians to gather information (Schubert et al., 2004).

Consent from the juvenile and their parent or guardian was obtained prior to the baseline interview (Schubert et al., 2004). Interviewers met with juveniles at their homes or in an agreed-upon location to conduct the computer-assisted interviews (Schubert et al., 2004). The interviewer read interview questions aloud for juveniles with learning disabilities (Schubert et al., 2004). Participants with learning disabilities gave verbal responses to interview questions (Schubert et al., 2004). A portable keyboard was provided to encourage honesty when responding to questions regarding sensitive material (Schubert et al., 2004).

The interviews were conducted in private, and participants were guaranteed confidentiality of their responses (Schubert et al., 2004). Baseline interviews took place during two, 2-hour sessions (Schubert et al., 2004). Follow-up interviews lasted approximately 2 hours each (Schubert et al., 2004). Participants were paid $50 for completing the baseline interview (Schubert et al., 2004). Information gathered during the data collection process included background characteristics, indicators of individual functioning, factors related to psychosocial development, family dynamics, personal relationships, and community contexts (Schubert et al., 2004).

The datasets for the PTD study are stored within the ICPSR data management system. ICPSR maintains a data archive of over 250,000 social and behavioral science research files (ICPSR, 2020). Four of the five datasets required for this study have restricted access. Approval from the Walden University Institutional Review Board (IRB) is required before research data can be collected or requested. Restricted data request procedures and requirements are outlined in the Restricted Data Use Agreement for

Confidential Data (see Appendix) document (ICPSR, 2020). A researcher must submit an online request to access restricted data (ICPSR, 2020). The data request application must include a copy of a document signed by the institution's IRB approving the research project (ICPSR, 2020). The application must also include a signed agreement, supplemental agreement document signed by those who will have access to data, data security plan, confidential data order summary, pledge of confidentiality, and the researcher's curriculum vitae or resume (ICPSR, 2020).

Instrumentation and Operationalization of Constructs

Psychopathy

Psychopathy is a personality disorder characterized by antisocial behavior, emotional dissociation, and maladaptive interpersonal traits (Farina et al., 2018; Viding & McCrory, 2018). The PTD study researchers used the PCL-YV to measure psychopathy at baseline (Mulvey & Schubert, 2014). The PCL-YV is a 60 to 90-minute semistructured interview used for the assessment of psychopathy in juveniles (Mulvey & Schubert, 2014; Neumann et al., 2006). An interview of this length was not feasible for the PTD study (Mulvey & Schubert, 2014). Researchers instead incorporated questions from the PCL-YV interview guide into the baseline interview battery as open-ended questions (Mulvey & Schubert, 2014). Interviewers used responses provided by the juvenile and collateral information to score the PCL-YV (Mulvey & Schubert, 2014). The juvenile was not present during scoring (Mulvey & Schubert, 2014).

The interviewer rated each youth on 20 separate items on a 3-point ordinal scale: 0 = item does not apply, 1 = item applies to a certain extent, and 2 = item applies to the

juvenile (see Table 1). The four-factor model (Neumann et al., 2006) showed a good fit to the data (Mulvey & Schubert, 2014). The value for the comparative fit index (CFI) was .92 (Mulvey & Schubert, 2014). The Tucker-Lewis index was .89 (Mulvey & Schubert, 2014). The value for the root mean square error of approximation (RMSEA) was .06 (Mulvey & Schubert, 2014). Inter-rater reliabilities were acceptable for each Factor 4 antisocial psychopathic trait (Mulvey & Schubert, 2014). The PCL-YV Factor 4 items are poor anger control ($\kappa = .76$), early behavior problems ($\kappa = .75$), serious criminal behavior ($\kappa = .84$), revocation of conditional release ($\kappa = .68$), and criminal versatility ($\kappa = .83$). Psychopathy was treated as a time-stable variable and viewed as having relative stability across the life course (Mulvey & Schubert, 2014).

Childhood Trauma

Parental Warmth and Hostility. Childhood trauma is defined as traumatic experiences during adolescence and teenage years involving abuse, neglect, psychological maltreatment, or exposure to violence (Farina et al., 2018; Ireland et al., 2020). The Quality of Parental Relationships Inventory (Conger et al., 1994) was used to assess parental behavior and the parent-adolescent relationship (Mulvey & Schubert, 2014). The 42 items (21 items each for maternal and paternal) inventory was used to measure parental warmth and hostility (e.g. ‘How often does your mother tell you she really cares about you?” and “How often does your father throw things at you?”). Items were graded on a 4-point Likert scale ranging from “always” to “never” (Mulvey & Schubert, 2014). The researchers reverse coded the items to generate the composite scores (see Table 1). A more supportive and nurturing parental relationship is associated

with higher scores on the warmth scale (Mulvey & Schubert, 2014). A more hostile relationship is associated with higher scores on the hostility scale (Mulvey & Schubert, 2014). Cronbach's alphas for subscales yielded good results ranging from 0.85 to 0.95 (Mulvey & Schubert, 2014).

Exposure to Violence. A modified version of the ETV inventory (Selner-O'Hagan et al., 1998) was used to evaluate violence exposure (Mulvey & Schubert, 2014). There were six ETV items for direct victimization (e.g., Have you ever been chased where you thought you might be seriously hurt?). There were seven ETV items for indirect violence (e.g., Have you ever seen someone else being raped, an attempt made to rape someone, or any other type of sexual attack?). Participants indicated whether or not they had experienced each type of violence (0 = No or 1 = Yes). A multidimensional two-factor confirmatory factor analysis (CFA) model was fit to the baseline data (Mulvey & Schubert, 2014). The normed fit index (NFI) and the non-normed fit index (NNFI) were both .927 for this model (Mulvey & Schubert, 2014). The value of the CFI was .944 (Mulvey & Schubert, 2014). The value for RMSEA was .047 (Mulvey & Schubert, 2014). The researchers also conducted confirmatory factor analyses for the victim and witness subscales (Mulvey & Schubert, 2014). The values obtained for the witness subscale were NFI = .95, NNFI = .935, CFI = .957, and RMSEA = .069 (Mulvey & Schubert, 2014). The values obtained for the victimization subscale were NFI = .964, NNFI = .957, CFI = .977, and RMSEA = .035 (Mulvey & Schubert, 2014). Two scores (see Table 1) were computed, with higher scores indicating a greater exposure to violence (Mulvey & Schubert, 2014).

Gang Involvement

Gang involvement is defined as an affiliation with a group of delinquent or antisocial peers (Thornberry et al., 2018). Questions from Thornberry et al. (1994) and Elliott (1990) were used in the PTD study to assess gang involvement (Mulvey & Schubert, 2014). The researchers asked participants additional questions if gang involvement was endorsed (i.e., youth's position in the gang, the personal significance of the gang). This measure was self-reported and also relied on participants to define what constituted a gang (Mulvey & Schubert, 2014). The researchers computed a variable for "ever in a gang" (Mulvey & Schubert, 2014). This variable is a combination of two variables. The first variable is a member of a gang now (Mulvey & Schubert, 2014). The second variable is a member of a gang in the past (Mulvey & Schubert, 2014). The "ever in a gang" variable was used for this study because it includes both current and past gang involvement. The values for gang involvement were 0 = No and 1 = Yes (see Table 1).

Table 1

Operationalization of Constructs

Variable name	Variable type	Level of measurement	Values	Instrument
Antisocial psychopathic traits	Dependent variable	Ordinal	Item does not apply (0), item applies to a certain extent (1), or item applies (2)	PCL-YV
Childhood traumatic experiences	Independent variable	Continuous	ETV victim (6 items) and witness (7 items) Maternal and paternal warmth (composite scores) – mean of 9 items Maternal and paternal hostility (composite scores) – mean of 12 items	ETV Quality of parental relationships inventory
Gang involvement	Independent and moderator variable	Dichotomous	Yes (1) No (0)	Interview conducted by PTD researchers

Data Analysis Plan

IBM's Statistical Package for the Social Sciences (SPSS Version 27) was used for data analyses. The datasets were cleaned of errors and missing data prior to performing statistical analyses. Variables were recoded as needed to ensure that analyses could be appropriately conducted. Outlier data were removed. Outlier data could have a significant effect on the results of the analysis (Nurunnabi et al., 2010). Missing data for continuous variables were filled in using the mean of all responses for that specific question or item, when appropriate. The computed mean value will not be significantly different when the mean is used as a substitute for missing data (Maity et al., 2019). Cases with missing PCL-YV Factor 4 item responses were removed from the analysis.

Research Questions and Hypotheses

RQ1: Do childhood traumatic experiences significantly predict PCL-YV Factor 4 antisocial psychopathic traits?

$H_0 1_1$: Childhood traumatic experiences do not significantly predict poor anger control.

$H_a 1_1$: Childhood traumatic experiences do significantly predict poor anger control.

$H_0 1_2$: Childhood traumatic experiences do not significantly predict early behavior problems.

$H_a 1_2$: Childhood traumatic experiences do significantly predict early behavior problems.

$H_0 1_3$: Childhood traumatic experiences do not significantly predict serious criminal behavior.

$H_a 1_3$: Childhood traumatic experiences do significantly predict serious criminal behavior.

$H_0 1_4$: Childhood traumatic experiences do not significantly predict revocation of conditional release.

$H_a 1_4$: Childhood traumatic experiences do significantly predict revocation of conditional release.

$H_0 1_5$: Childhood traumatic experiences do not significantly predict criminal versatility.

$H_a 1_5$: Childhood traumatic experiences do significantly predict criminal versatility.

RQ2: Does gang involvement significantly predict PCL-YV Factor 4 antisocial psychopathic traits?

$H_0 2_1$: Gang involvement does not significantly predict poor anger control.

$H_a 2_1$: Gang involvement does significantly predict poor anger control.

$H_0 2_2$: Gang involvement does not significantly predict early behavior problems.

$H_a 1_2$: Gang involvement does significantly predict early behavior problems.

$H_0 2_3$: Gang involvement does not significantly predict serious criminal behavior.

$H_a 2_3$: Gang involvement does significantly predict serious criminal behavior.

$H_0 2_4$: Gang involvement does not significantly predict revocation of conditional release.

$H_a 2_4$: Gang involvement does significantly predict revocation of conditional release.

$H_0 2_5$: Gang involvement does not significantly predict criminal versatility.

$H_a 2_5$: Gang involvement does significantly predict criminal versatility.

RQ3: To what extent does gang involvement moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits?

$H_0 3$: Gang involvement does not moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits.

$H_a 3$: Gang involvement does moderate the relationship between childhood traumatic experiences and antisocial psychopathic traits.

Statistical Analysis

Descriptive statistics were presented to describe the study population. OLR was used to examine whether childhood traumatic experiences and gang involvement are statistically significant predictors of PCL-YV Factor 4 psychopathic traits. OLR is a statistical technique that is used to predict an ordinal level dependent variable with a set of categorical, ordinal, interval, or ratio predictor variables (Liu, 2009). PCL-YV Factor 4 antisocial psychopathic traits are measured on a 3-point ordinal scale (Neumann et al., 2006). A separate regression was conducted for each dependent variable. Gang involvement was examined as an independent and moderator variable. Interaction variables were included to determine if gang involvement influences the relationship

between childhood traumatic experiences and PCL-YV Factor 4 antisocial psychopathic traits.

The first two assumptions of OLR relate to the study design. The dependent variable for OLR must be measured on an ordinal scale (Liu, 2009). The second assumption is that one or more independent variables (continuous or categorical) are included in the regression model (Liu, 2009). The other two assumptions are the absence of multicollinearity and proportional odds (Liu, 2009; Marcoulides & Raykov, 2019). Multicollinearity and proportional odds can be tested using SPSS Statistics (Marcoulides & Raykov, 2019). Multicollinearity was assessed by calculating variance inflation factors (VIF). VIF values over ten will suggest the presence of multicollinearity (Marcoulides & Raykov, 2019). The proportional odds assumption, also known as the parallel regression assumption, assesses if the slope of the log-odds is equal for all dependent variable categories (Liu, 2009). The test of parallel lines was used to assess the proportional odds assumption (Liu, 2009). The parallel lines test compares the fit of the proportional odds location model to a model with varying location parameters (Liu, 2009). Each predictor will have as many coefficients as thresholds in the OLR model if proportional odds cannot be assumed (Liu, 2009). Only one coefficient needs to be calculated for each predictor if the assumption of parallel lines is met (Liu, 2009).

The overall model significance for the OLR was examined using the $\chi 2$ omnibus test of model coefficients (Liu, 2009). McFadden's R^2 was examined to assess the percent of variance accounted for by the independent variables (Liu, 2009). Predicted probabilities of an event occurring were determined by *Exp(B)*, also known as the odds

ratio (Liu, 2009). A 95% confidence interval was computed and reported. The results of the assumption tests were also be presented.

Threats to Validity

External Validity

Research validity is the extent to which the findings of a study are both accurate and trustworthy (Garcia-Perez, 2012). The research questions are accurately addressed, and results are appropriately interpreted in a study with high validity (Garcia-Perez, 2012). External validity refers to the generalizability of research findings (Garcia-Perez, 2012). Serious juvenile offenders are the study population. Juvenile offenders are a heterogeneous group (Farina et al., 2018). Juvenile offenders come from various backgrounds (Farina et al., 2018), and they present a wide variety of individual-level issues (Mulder et al., 2019). A study sample comprised of serious juvenile offenders from diverse settings was used for this study. This study has high population validity. High population validity means research findings may be generalizable to similar juvenile offender populations (Garcia-Perez, 2012).

Internal Validity

Internal validity is the extent to which a researcher can demonstrate a causal relationship between study variables (Garcia-Perez, 2012). Causal relationships were not examined in this study. A predictive relationship between the independent and dependent variables was assessed. Threats to internal validity include biased sampling, history effects, maturation, sample attrition, and testing effects. The entire dataset was analyzed. The only exclusions were cases with missing data and outliers. The decision to use the

entire PTD study sample addressed issues related to biased sampling. History effects, maturation, and sample attrition were not relevant to this study, as only baseline data were analyzed. The PTD study relied primarily on self-report information from research participants (Schubert et al., 2004). The researchers supplemented and validated information provided by participants using collateral information (Schubert et al., 2004). Researchers collected collateral information from interviews with parents or guardians, official records, FBI records of arrest, and court documents (Schubert et al., 2004). Collateral information usage reduced the potential effects of testing in the original study.

Statistical Conclusion Validity

Statistical conclusion validity refers to the extent to which research data can reasonably be regarded as revealing a relationship or lack thereof between the study variables (Garcia-Perez, 2012). The three aspects of statistical conclusion validity are sufficient statistical power to detect an effect if one exists, whether there is a risk that an effect will be detected that does not actually exist, and confident effect size estimations (Garcia-Perez, 2012). Sufficient data were collected to make valid conclusions. An appropriate number of measure variables was included in the regression models. Outliers were removed prior to data analysis. The assumptions of OLR were checked to ensure that the appropriate statistical method was used (Garcia-Perez, 2012).

Ethical Procedures

IRB approval was required before the restricted datasets could be requested from ICPSR (see Appendix). The IRB approval number for this study was 10-21-20-0745592. The PTD study researchers collected data following research and institutional ethical

guidelines (Schubert et al., 2004). The PTD study researchers obtained a certificate of confidentiality from the U.S. Department of Justice (Schubert et al., 2004). The researchers obtained informed consent from the participants and their parents or guardians before conducting baseline interviews (Schubert et al., 2004). The researchers also established the requirements and limits of confidentiality before data collection (Schubert et al., 2004).

The ICPSR has its own set of guidelines with regards to confidentiality. The ICPSR accepts data with identifying information under specific conditions. ICPSR staff members confirm the informed consent of the research participants and relevant IRB approvals (ICPSR, 2020). ICPSR staff members also work with data depositors to address ethical concerns related to confidentiality and disclosure risks (ICPSR, 2020). ICPSR staff members utilize strict procedures to protect the confidentiality of research participants and organizations once data are deposited (ICPSR, 2020). Procedures used to maintain data confidentiality include thoroughly reviewing datasets to assess disclosure risk, modifying data to reduce risk, and limiting access to datasets (ICPSR, 2020).

The ICPSR has several options for restricted data access. The options are a secure download, virtual data enclave, physical data enclave, and secure online analysis (ICPSR, 2020). The secure download option was used to access the required datasets for this study. Researchers using this option can download the requested data using a single-use password (ICPSR, 2020). Researchers must destroy the data at the end of the approved access period (ICPSR, 2020). The downloaded data and statistical analyses were stored on a password-protected computer. The computer was kept in a secure location and

accessible to only the principal researcher. The data collected was destroyed after analysis and before the approved access period ended.

Summary

This chapter included a detailed explanation of the research design for this study. A description of the archival dataset, study population, sampling strategy, and variables was provided. The instruments that were used in the PTD study to measure the study variables were discussed. The data analysis methods, including preparation procedures, were explained. Potential threats to validity and ethical considerations were also presented. A quantitative, nonexperimental, cross-sectional research design was used to assess the predictive ability of childhood traumatic experiences and gang involvement for antisocial psychopathic traits. OLR was the statistical analysis method used to answer the research questions. OLR is a statistical technique that is used to predict an ordinal level dependent variable with a set of categorical, ordinal, interval, or ratio predictor variables (Liu, 2009).

The variables used to examine childhood traumatic experiences were parental warmth, hostile parenting behaviors, and exposure to violence (Mulvey, 2017). Gang and nongang involved juvenile offenders were included in the study. Gang involvement served as a predictor and moderator variable in each regression model. Regression models, including interaction variables, can be used to examine the predictive ability of independent variables and moderation or interaction effects (Farina et al., 2018; Ridder & Kosson, 2018). A separate regression was conducted for each PCL-YV Factor 4 item. The dependent variables were poor anger control, early behavior problems, serious

criminal behavior, revocation of conditional release, and criminal versatility (Neumann et al., 2006).

The study population was serious juvenile offenders who participated in the PTD project. The PTD study was a seven-year longitudinal survey to investigate life changes associated with criminal behavior (Mulvey et al., 2014; Schubert et al., 2004). The culturally diverse sample of serious juvenile offenders was recruited from Arizona and Pennsylvania (Mulvey et al., 2014). There were 1,354 male and female juvenile offenders who were convicted of felony offenses or serious misdemeanors included in the PTD study (Mulvey et al., 2014). The majority of participants were males (Mulvey et al., 2014). The researchers included an adequate female sample in the study, which allowed for the examination of gender differences (Mulvey et al., 2014).

Archival data were requested from the ICPSR data management system. IRB approval was needed before the required datasets can be requested. Only baseline data were used for this study. The utilization of baseline data eliminates several threats associated with internal validity. The statistical analysis results are presented in Chapter 4. Additional information pertaining to data collection procedures, including the time frame, is discussed. Changes and discrepancies related to data collection are also explained.

Chapter 4: Results

Introduction

This quantitative study was designed to examine the predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits among serious juvenile offenders. The influence of gang involvement on the association between childhood trauma and antisocial psychopathic traits was also assessed. Childhood trauma (Boduszek et al., 2019; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson & Ray, 2019; Mallion & Wood, 2018) are associated with psychopathy among juvenile offenders. Researchers have not explicitly examined associations between childhood trauma, gang involvement, and antisocial psychopathic traits (Farina et al., 2018). The intent was to determine if childhood trauma and gang involvement are significant predictors of antisocial psychopathic traits among serious juvenile offenders.

The research questions and corresponding hypotheses were constructed to examine the relationships between the study variables. The independent variables were childhood traumatic experiences and gang involvement. The dependent variables were antisocial psychopathic traits as measured by the PCL-YV. Childhood trauma comprised lack of parental warmth, hostile parenting, and exposure to violence. RQ1 was used to examine the predictive ability of childhood trauma. RQ2 was used to examine the predictive ability of gang involvement. RQ3 was used to examine the moderation effects of gang involvement on the relationship between traumatic experiences and antisocial psychopathic traits.

This chapter includes a comprehensive discussion regarding the data collection process and statistical analysis results. Descriptive statistics and statistical assumption test results for OLR are discussed. The procedures used to address missing data points and outliers are described. The results of the analyses for each research question, including updated sample sizes, are presented. The findings of each OLR are presented with corresponding tables.

Data Collection

Data were collected in accordance with the IRB guidelines. There were no discrepancies in data collection from the plan presented in Chapter 3. Conditional IRB approval was granted on October 21, 2020. The required signatures for the confidential data agreement were received on November 16, 2020. Additional time was needed to obtain the institution's representative's signature for the confidential data agreement. Revisions to the agreement were required before the signature could be obtained. The additional time did not significantly impact the data collection process.

The completed restricted data online request application was submitted on November 17, 2020. An ICPSR representative reviewed the data request application from November 17, 2020 to December 18, 2020. Modifications and additional information were provided to the ICPSR representative during this period. Data access was granted on December 18, 2020. The data access notification from ICPSR was submitted to the IRB. Full IRB approval was granted on December 18, 2020. The notification to proceed to the final study stage was also received.

The requested data files were downloaded to a password-protected computer. An email was then sent to the ICPSR representative to obtain the password required to open the data files. The data were then prepared for analysis. Each dataset was reviewed for errors and missing information. Separate files were created for each dataset, with only the specific variables required for the study. The datasets were then merged using case identification numbers. An inspection of the final dataset was conducted to identify errors, outliers, and missing data.

Baseline Descriptive and Demographic Characteristics

There were 1,354 serious juvenile offenders from criminal justice systems in Maricopa County (Phoenix), Arizona (*n* = 654), and Philadelphia County, Pennsylvania (*n* = 700), who initially participated in the PTD study (Mulvey et al., 2014; Schubert et al., 2004). Summary statistics were calculated for age. Frequencies and percentages were calculated for gender, ethnicity, and gang involvement. The most frequently observed category of gender was male (*n* = 1170, 86%). The most frequently observed category of ethnicity was Black (*n* = 561, 41%). Frequencies and percentages are presented in Table 2. The observations for age had an average of 16.04 (*SD* = 1.14, Min = 14.00, Max = 19.00). The summary statistics can be found in Table 3. Frequencies and percentages were calculated for gang involvement. The most frequently observed category of the "ever in a gang" variable was No (*n* = 1035, 76%). Frequencies and percentages are presented in Table 4.

Table 2

Frequency Table for Gender and Ethnicity

Variable	*n*	%
Gender		
Male	1170	86.41
Female	184	13.59
Ethnicity		
White	274	20.24
Black	561	41.43
Asian	2	0.15
Native American	27	1.99
Hispanic	454	33.53
Other	36	2.66

Table 3

Summary Statistics Table for Age

Variable	*n*	*M*	*SD*	Min	Max
Age	1354	16.04	1.14	14.00	19.00

Table 4

Frequency Table for Gang Involvement

Variable	*n*	%
Ever in a gang		
No	1035	76.44
Yes	315	23.26
Missing	4	0.30

Study Results

SPSS Version 27 was used for data analyses. OLR was used to answer each research question. The ordinal dependent variables were poor anger control, early

behavior problems, serious criminal behavior, revocation of conditional release, and criminal versatility. The independent variables were maternal warmth, maternal hostility, paternal warmth, paternal hostility, victim of violence, witness to violence, and gang involvement. Cases with missing data for the dependent variables and gang involvement were not included in the analysis. Data imputation was utilized to replace missing values for scale variables. Missing values were replaced with the series mean. Mahalanobis distance was used to identify multivariate outliers. There were 20 cases identified as outliers and removed from the analysis.

There are four statistical assumptions for OLR. The first statistical assumption for OLR is the dependent variable must be measured on an ordinal scale (Liu, 2009). The second assumption is that one or more independent variables (continuous or categorical) are included in the regression model (Liu, 2009). The other two assumptions are the absence of multicollinearity and proportional odds (Liu, 2009; Marcoulides & Raykov, 2019). VIFs were calculated to detect the presence of multicollinearity between predictors. VIF values were obtained by using the collinearity diagnostics option for linear regression models. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern (Menard, 2009). VIFs of 10 should be considered the maximum upper limit (Menard, 2009). The test of parallel lines was conducted to test the proportional odds assumption. The test of parallel lines was selected from the output menu for ordinal regression models. Separate parameters are estimated for each pair of levels in the outcome variable when proportional odds are not assumed (Liu, 2009). A single parameter can be estimated for each predictor if proportional odds

can be assumed (Liu, 2009). The results of the assumption tests are reported for each OLR model.

The overall model significance for each OLR model was examined using the χ^2 omnibus test of model coefficients (Liu, 2009). McFadden's R^2 was calculated to examine the model fit (Liu, 2009; Louviere et al., 2000). McFadden's R^2 values greater than .2 are indicative of models with excellent fit (Louviere et al., 2000). Predicted probabilities of an event occurring were determined by *Exp(B)*, also known as the odds ratio (Liu, 2009). A 95% confidence interval was also computed.

There are two routes in SPSS that can be used to perform OLR. The first route is using the regression menu found in the analyze section and selecting ordinal for the analysis. The second route is using the generalized linear model option, which is also found in the analyze section. Routes 1 and 2 were used to analyze the data for this study. Route 1 was used to conduct the test of parallel lines and obtain pseudo R^2 values. Route 2 was used to obtain the odds ratios and corresponding 95% confidence intervals.

Poor Anger Control

The sample size for poor anger control was $n = 1277$. All predictors in the regression model had VIFs less than 10. The VIF for each predictor in the model is presented in Table 5. The test of parallel lines was not significant, $\chi^2(7) = 2.33$, $p = .94$. The assumption of proportional odds was met. The data did not have a significantly different fit between models. The model was evaluated based on an alpha of 0.05. The results of the model were significant, $\chi^2(7) = 185.64$, $p < .001$. The observed effects of maternal warmth, paternal warmth, maternal hostility, paternal hostility, violence

victimization, witness to violence, and gang involvement on poor anger control were unlikely to occur under the null hypothesis. The null hypothesis can be rejected. The McFadden R^2 value calculated for this model was 0.07.

Table 5

Variance Inflation Factors for Predictors

Variable	VIF
Maternal warmth	1.34
Maternal hostility	1.34
Paternal warmth	1.26
Paternal hostility	1.21
Victim of violence	1.57
Witness to violence	1.41
Gang involvement	1.13

Maternal warmth was significant, $B = -.27$, $\chi^2 = 8.64$, $p < .001$. A one unit increase in maternal warmth would decrease the odds of being in a higher category for poor anger control, *Exp(B)* = .76. Maternal hostility was significant, $B = .36$, $\chi^2 = 5.88$, $p = .02$. A one unit increase in maternal hostility would increase the odds of being in a higher category for poor anger control, *Exp(B)* = 1.44. Paternal warmth was not significant, $B = -.08$, $\chi^2 = .94$, $p = .33$. Paternal hostility was significant, $B = .47$, $\chi^2 = 7.80$, $p = .01$. A one unit increase in paternal hostility would increase the odds of being in a higher category for poor anger control, *Exp(B)* = 1.15. Witness to violence was significant, $B = .09$, $\chi^2 = 7.17$, $p = .01$. A one unit increase in witness to violence would increase the odds of being in a higher category for poor anger control, *Exp(B)* = 1.09. Violence victimization was significant, $B = .19$, $\chi^2 = 17.56$, $p < .001$. A one unit increase in violence victimization would increase the odds of being in a higher category for poor

anger control, *Exp(B)* = 1.21. Gang involvement was significant, $B = .71$, $\chi^2 = 27.37$, $p < .001$. The odds of gang-involved serious juvenile offenders being in a higher category for poor anger control were 2.04 times that of nongang members. The results of the ordinal regression model are summarized in Table 6.

Table 6

Ordinal Logistic Regression Results for Poor Anger Control

			Hypothesis test			95% CI	
Predictor	*B*	*SE*	χ^2	Sig.	*Exp(B)*	Lower	Upper
Maternal warmth	-.27	.09	8.64	.00	.76	.64	.91
Maternal hostility	.36	.15	5.88	.02	1.44	1.07	1.92
Paternal warmth	-.08	.09	.94	.33	.92	.78	1.09
Paternal hostility	.47	.17	7.80	.01	1.60	1.15	2.22
Witness to violence	.09	.03	7.17	.01	1.09	1.02	1.16
Victim of violence	.19	.05	17.56	.00	1.21	1.11	1.33
Gang involvement	.71	.14	27.37	.00	2.04	1.56	2.66

Early Behavior Problems

The sample size for early behavior problems was $n = 1276$. All predictors in the regression model had VIFs less than 10. The VIF for each predictor in the model is presented in Table 7. The test of parallel lines was not significant, $\chi^2(7) = 11.22$, $p = .13$. The assumption of proportional odds was met. The data did not have a significantly different fit between models. The model was evaluated based on an alpha of 0.05. The results of the model were significant, $\chi^2(7) = 124.09$, $p < .001$. The observed effects of maternal warmth, paternal warmth, maternal hostility, paternal hostility, victim of violence, witness to violence, and gang involvement on early behavior problems were

unlikely to occur under the null hypothesis. The null hypothesis can be rejected. The McFadden R^2 value calculated for this model was 0.05.

Table 7

Variance Inflation Factors for Predictors

Variable	VIF
Maternal warmth	1.34
Maternal hostility	1.34
Paternal warmth	1.26
Paternal hostility	1.20
Victim of violence	1.57
Witness to violence	1.41
Gang involvement	1.13

Maternal warmth was not significant, B = -.10, χ^2 = 1.17, p = .28. Maternal hostility was significant, B = 0.34, χ^2 = 5.19, p = .02. A one unit increase in maternal hostility would increase the odds of observing a higher category for early behavior problems, *Exp(B)* = 1.40. Paternal warmth was not significant, B = .00, χ^2 = .00, p = .98. Paternal hostility was significant, B = 0.63, χ^2 = 14.44, p < .001. A one unit increase in paternal hostility would increase the odds of being in a higher category for early behavior problems, *Exp(B)* = 1.88. Witness to violence was not significant, B = .04, χ^2 = 1.58, p = .21. Victim of violence was significant, B = 0.20, χ^2 = 19.70, p < .001. A one unit increase in violence victimization would increase the odds of being in a higher category for early behavior problems, *Exp(B)* = 1.22. Gang involvement was significant, B = 0.43, χ^2 = 10.22, p < .001. The odds of gang-involved serious juvenile offenders being in a higher category for early behavior problems were 1.53 times that of nongang members. The results of the ordinal regression model are summarized in Table 8.

Table 8

Ordinal Logistic Regression Results for Early Behavior Problems

			Hypothesis Test			95% CI	
Predictor	*B*	*SE*	χ^2	Sig.	*Exp(B)*	Lower	Upper
Maternal warmth	-.10	.09	1.17	.28	.91	.76	1.08
Maternal hostility	.34	.15	5.19	.02	1.40	1.05	1.87
Paternal warmth	.00	.09	.00	.98	1.00	.84	1.18
Paternal hostility	.63	.17	14.44	.00	1.88	1.36	2.61
Witness to violence	.04	.03	1.58	.21	1.04	.98	1.11
Victim of violence	.20	.05	19.70	.00	1.22	1.12	1.34
Gang involvement	.43	.13	10.22	.00	1.53	1.18	1.99

Serious Criminal Behavior

The sample size for serious criminal behavior was $n = 1277$. All predictors in the regression model had VIFs less than 10. The VIF for each predictor is presented in Table 9. The test of parallel lines was not significant, $\chi^2(7) = 12.36$, $p = .09$. The assumption of proportional odds was met. The data did not have a significantly different fit between models. The model was evaluated based on an alpha of 0.05. The results of the model were significant, $\chi^2(7) = 352.42$, $p < .001$. The observed effects of maternal warmth, paternal warmth, maternal hostility, paternal hostility, victim of violence, witness to violence, and gang involvement on serious criminal behavior were unlikely to occur under the null hypothesis. The null hypothesis can be rejected. The McFadden R^2 value calculated for this model was 0.17.

Table 9

Variance Inflation Factors for Predictors

Variable	VIF
Maternal warmth	1.34
Maternal hostility	1.34
Paternal warmth	1.26
Paternal hostility	1.21
Victim of violence	1.57
Witness to violence	1.41
Gang involvement	1.13

Maternal warmth was not significant, $B = -.01$, $\chi^2 = .01$, $p = .90$. Maternal hostility was not significant, $B = .09$, $\chi^2 = .25$, $p = .62$. Paternal warmth was not significant, $B = -.12$, $\chi^2 = 1.48$, $p = .22$. Paternal hostility was significant, $B = .54$, $\chi^2 = 7.40$, $p = .01$. A one unit increase in paternal hostility would increase the odds of being in a higher category for serious criminal behavior, *Exp(B)* = 1.72. Witness to violence was significant, $B = .38$, $\chi^2 = 94.66$, $p < .001$. A one unit increase in witness to violence would increase the odds of being in a higher category for serious criminal behavior, *Exp(B)* = 1.46. Victim of violence was significant, $B = .28$, $\chi^2 = 27.64$, $p < .001$. A one unit increase in violence victimization would increase the odds of being in a higher category for serious criminal behavior, *Exp(B)* = 1.32. Gang involvement was significant, $B = .74$, $\chi^2 = 21.81$, $p < .001$. The odds of gang-involved serious juvenile offenders being in a higher category for serious criminal behavior were 2.09 times that of nongang members. The results of the ordinal regression model are summarized in Table 10.

Table 10

Ordinal Logistic Regression Results for Serious Criminal Behavior

			Hypothesis Test			95% CI	
Predictor	*B*	*SE*	χ^2	Sig.	*Exp(B)*	Lower	Upper
Maternal warmth	-.01	.11	.01	.90	.99	.80	1.21
Maternal hostility	.09	.17	.25	.62	1.09	.78	1.53
Paternal warmth	-.12	.10	1.48	.22	.89	.73	1.08
Paternal hostility	.54	.20	7.40	.01	1.72	1.16	2.53
Witness to violence	.38	.04	94.66	.00	1.46	1.35	1.58
Victim of violence	.28	.05	27.64	.00	1.32	1.19	1.46
Gang involvement	.74	.16	21.81	.00	2.09	1.54	2.85

Violations of Conditional Release

The sample size for violations of conditional release was $n = 1276$. All predictors in the regression model had VIFs less than 10. The VIF for each predictor is presented in Table 11. The test of parallel lines was not significant, $\chi^2(7) = 6.34$, $p = .50$. The assumption of proportional odds was met. The data did not have a significantly different fit between models. The model was evaluated based on an alpha of 0.05. The results of the model were significant, $\chi^2(7) = 111.55$, $p < .001$. The observed effects of maternal warmth, paternal warmth, maternal hostility, paternal hostility, violence victimization, witness to violence, and gang involvement on conditional release violations were unlikely to occur under the null hypothesis. The null hypothesis can be rejected. The McFadden R^2 value calculated for this model was 0.04.

Table 11

Variance Inflation Factors for Predictors

Variable	VIF
Maternal warmth	1.34
Maternal hostility	1.34
Paternal warmth	1.26
Paternal hostility	1.21
Victim of violence	1.57
Witness to violence	1.41
Gang involvement	1.13

Maternal warmth was significant, $B = .22$, $\chi^2 = 5.25$, $p = .02$. A one unit increase in maternal hostility would increase the odds of being in a higher category for conditional release violations, *Exp(B)* = 1.25. Maternal hostility was not significant, $B = .02$, $\chi^2 = .02$, $p = .88$. Paternal warmth was not significant, $B = .03$, $\chi^2 = .12$, $p = .73$. Paternal hostility was not significant, $B = .13$, $\chi^2 = .61$, $p = .43$. Witness to violence was significant, $B = .13$, $\chi^2 = 14.95$, $p < .001$. A one unit increase in witness to violence would increase the odds of being in a higher category for conditional release violations, *Exp(B)* = 1.14. Victim of violence was significant, $B = .16$, $\chi^2 = 11.60$, $p < .001$. A one unit increase in violence victimization would increase the odds of being in a higher category for conditional release violations, *Exp(B)* = 1.17. Gang involvement was significant, $B = .61$, $\chi^2 = 20.94$, $p < .001$. The odds of gang-involved serious juvenile offenders being in a higher category for conditional release violations were 1.85 times that of nongang members. The results of the ordinal regression model are summarized in Table 12.

Table 12

Ordinal Logistic Regression Results for Violations of Conditional Release

			Hypothesis test			95% CI	
Predictor	*B*	*SE*	χ^2	Sig.	*Exp(B)*	Lower	Upper
Maternal warmth	.22	.10	5.25	.02	1.25	1.03	1.50
Maternal hostility	.02	.15	.02	.88	1.02	.76	1.38
Paternal warmth	.03	.09	.12	.73	1.03	.87	1.23
Paternal hostility	.13	.17	.61	.43	1.14	.82	1.59
Witness to violence	.13	.03	14.95	.00	1.14	1.07	1.22
Victim of violence	.16	.05	11.60	.00	1.17	1.07	1.28
Gang involvement	.61	.13	20.94	.00	1.85	1.42	2.40

Criminal Versatility

The sample size for criminal versatility was $n = 1275$. All predictors in the regression model had VIFs less than 10. The VIF for each predictor is presented in Table 13. The test of parallel lines was not significant, $\chi^2(7) = 5.96$, $p = .544$. The assumption of proportional odds was met. The data did not have a significantly different fit between models. The model was evaluated based on an alpha of 0.05. The results of the model were significant, $\chi^2(7) = 438.36$, $p < .001$. The observed effects of maternal warmth, paternal warmth, maternal hostility, paternal hostility, violence victimization, witness to violence, and gang involvement on criminal versatility were unlikely to occur under the null hypothesis. The null hypothesis can be rejected. The McFadden R^2 value calculated for this model was 0.16.

Table 13

Variance Inflation Factors for Predictors

Variable	VIF
Maternal warmth	1.34
Maternal hostility	1.34
Paternal warmth	1.26
Paternal hostility	1.21
Victim of violence	1.57
Witness to violence	1.41
Gang involvement	1.13

Maternal warmth was not significant, $B = .01$, $\chi^2 = .02$, $p = .90$. Maternal hostility was significant, $B = .39$, $\chi^2 = 5.81$, $p = .02$. A one unit increase in maternal hostility would increase the odds of being in a higher category for criminal versatility, *Exp(B)* = 1.47. Paternal warmth was not significant, $B = -.11$, $\chi^2 = 1.53$, $p = .22$. Paternal hostility was not significant, $B = .22$, $\chi^2 = 1.42$, $p = .23$. Witness to violence was significant, $B = .29$, $\chi^2 = 74.35$, $p < .001$. A one unit increase in witness to violence would increase the odds of being in a higher category for criminal versatility, *Exp(B)* = 1.34. Victim of violence was significant, $B = .41$, $\chi^2 = 66.30$, $p < .001$. A one unit increase in violence victimization would increase the odds of being in a higher category for criminal versatility, *Exp(B)* = 1.50. Gang involvement was significant, $B = .92$, $\chi^2 = 36.25$, $p < .001$. The odds of gang-involved serious juvenile offenders being in a higher category for criminal versatility were 2.51 times that of nongang members. The results of the ordinal regression model are summarized in Table 14.

Table 14

Ordinal Logistic Regression Results for Criminal Versatility

			Hypothesis Test			95% CI	
Predictor	*B*	*SE*	χ^2	Sig.	*Exp(B)*	Lower	Upper
Maternal warmth	.01	.10	.02	.90	1.01	.84	1.22
Maternal hostility	.39	.16	5.81	.02	1.47	1.08	2.02
Paternal warmth	-.11	.09	1.53	.22	.89	.74	1.07
Paternal hostility	.22	.18	1.42	.23	1.24	.87	1.77
Witness to violence	.29	.03	74.35	.00	1.34	1.25	1.43
Victim of violence	.41	.05	66.30	.00	1.50	1.36	1.66
Gang involvement	.92	.15	36.25	.00	2.51	1.86	3.39

Moderation Effects of Gang Involvement

OLR models using statistically significant predictors and interaction variables were examined to assess the moderation effects of gang involvement. The scale variables were mean-centered prior to computing interaction variables. The scale variables were mean-centered to avoid multicollinearity issues. There were no assumption violations. The VIF values for all predictors were less than 10. The tests of parallel lines were not significant. The proportional odds assumption was met for each model.

Gang involvement was a statistically significant predictor of poor anger control, early behavior problems, serious criminal behavior, conditional release violations, and criminal versatility. Maternal warmth, parental hostility, violence victimization, and witness to violence predicted poor anger control. Parental hostility and violence victimization predicted early behavior problems. Paternal hostility, violence victimization, and witness to violence predicted serious criminal behavior. Maternal warmth, violence victimization, and witness to violence predicted conditional release

violations. Maternal hostility, violence victimization, and witness to violence predicted criminal versatility.

Poor Anger Control

The overall model was statistically significant, $\chi^2(11) = 185.77$, $p < .001$. The interaction between maternal warmth and gang involvement was not significant, $B = .06$, $\chi^2(1) = .07$, $p = .79$. The interaction between maternal hostility and gang involvement was not significant, $B = -.04$, $\chi^2(1) = .01$, $p = .91$. The interaction between paternal hostility and gang involvement was not significant, $B = .16$, $\chi^2(1) = .17$, $p = .68$. The interaction between victim of violence and gang involvement was not significant, $B = -.05$, $\chi^2(1) = .26$, $p = .61$. The interaction between witness to violence and gang involvement was not significant, $B = -.04$, $\chi^2(1) = .17$, $p = . 68$. The results are summarized in Table 15.

Early Behavior Problems

The overall model was statistically significant, $\chi^2(7) = 122.30$, $p < .001$. The interaction between maternal hostility and gang involvement was not significant, $B = -.06$, $\chi^2(1) = .04$, $p = .84$. The interaction between paternal hostility and gang involvement was not significant, $B = .06$, $\chi^2(1) = .02$, $p = .88$. The interaction between victim of violence and gang involvement was not significant, $B = -.08$, $\chi^2(1) = .75$, $p = .39$. The results are summarized in Table 15.

Serious Criminal Behavior

The overall model was statistically significant, $\chi^2(7) = 350.50$, $p < .001$. The interaction between paternal hostility and gang involvement was not significant, $B = .19$, $\chi^2(1) = .17$, $p = .68$. The interaction between victim of violence and gang involvement

was not significant, B = -.03, $\chi^2(1)$ = .05, p = .81. The interaction between witness to violence and gang involvement was not significant, B = .02, $\chi^2(1)$ = .06, p = .81. The results are summarized in Table 15.

Violations of Conditional Release

The overall model was statistically significant, $\chi^2(7)$ = 112.85, p < .001. The interaction between maternal warmth and gang involvement was not significant, B = -.14, $\chi^2(1)$ = .53, p = .47. The interaction between victim of violence and gang involvement was not significant, B = -.11, $\chi^2(1)$ = 1.14, p = .29. The interaction between witness to violence and gang involvement was not significant, B = .00, $\chi^2(1)$ = .00, p = .96. The results are summarized in Table 15.

Criminal Versatility

The overall model was statistically significant, $\chi^2(7)$ = 435.64, p < .001. The interaction between maternal hostility and gang involvement was not significant, B = -.02, $\chi^2(1)$ = .00, p = .96. The interaction between victim of violence and gang involvement was not significant, B = -.08, $\chi^2(1)$ = .49, p = .48. The interaction between witness to violence and gang involvement was not significant, B = .12, $\chi^2(1)$ = 1.43, p = .23. The results are summarized in Table 15.

Table 15

Ordinal Logistic Regression Results for Predictors and Gang Involvement Interaction Terms

Predictor	*B*	*SE*	χ^2	*p*	95% CI
Poor anger control					
Maternal warmth	.06	.21	.07	.79	[-.36, .48]
Maternal hostility	-.04	.36	.01	.91	[-.75, .66]
Paternal hostility	.16	.38	.17	.68	[-.59, .90]
Victim of violence	-.05	.10	.26	.61	[-.25, .15]
Witness to violence	-.04	.09	.17	.68	[-.21, .13]
Early behavior problems					
Maternal hostility	-.06	.31	.04	.84	[-.68, .55]
Paternal hostility	.06	.37	.02	.88	[-.66, .77]
Victim of violence	-.08	.09	.75	.39	[-.25, .10]
Serious criminal behavior					
Paternal hostility	.19	.48	.17	.68	[-.74, 1.13]
Victim of violence	-.03	.12	.05	.81	[-.27, .21]
Witness to violence	.02	.10	.06	.81	[-.17, .22]
Violations of conditional release					
Maternal warmth	-.14	.19	.53	.47	[-.52, .24]
Victim of violence	-.11	.10	1.14	.29	[-.30, .09]
Witness to violence	.00	.08	.00	.96	[-.17, .16]
Criminal versatility					
Maternal hostility	-.02	.40	.00	.96	[-.81, .77]
Victim of violence	-.08	.12	.49	.48	[-.32, .15]
Witness to violence	.12	.10	1.43	.23	[-.07, .31]

Summary

Baseline data from the PTD study were analyzed to answer the research questions. Demographic information was presented to describe the study population. The most frequently observed category of gender was male (n = 1170). The most frequently observed category of ethnicity was Black (n = 561). The observations for age had an average of 16.04 years. The most frequently observed category for gang involvement was no (n = 1035).

OLR was used to analyze the data. A regression was conducted for each ordinal level dependent variable. The dependent variables were poor anger control, early behavior problems, serious criminal behavior, revocation of conditional release, and criminal versatility. The independent variables were maternal warmth, maternal hostility, paternal warmth, paternal hostility, victim of violence, witness to violence, and gang involvement. Additional analyses were conducted to examine the moderation effects of gang involvement on the relationship between statistically significant childhood traumatic experiences and antisocial psychopathic traits.

Gang involvement predicted poor anger control, early behavior problems, serious criminal behavior, conditional release violations, and criminal versatility. Maternal warmth, parental hostility, violence victimization, and witness to violence predicted poor anger control. Parental hostility and violence victimization predicted early behavior problems. Paternal hostility, violence victimization, and witness to violence predicted serious criminal behavior. Maternal warmth, violence victimization, and witness to violence predicted conditional release violations. Maternal hostility, violence

victimization, and witness to violence predicted criminal versatility. Statistically significant childhood trauma-related variables for each dependent variable, gang involvement, and interaction variables were analyzed. There were no statistically significant interactions.

The purpose of the study in regard to the need to fill the research gaps concerning antisocial psychopathic behavior among juvenile offenders is revisited in Chapter 5. The statistical analyses of the quantitative data and the findings are compared to the existing literature in the field. Limitations impacting the interpretation, reliability, and applicability of the research findings are discussed. Recommendations for future research based on the limitations of the study are presented. The implications for social change are addressed with further evaluation of the research findings.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine the predictive relationship between childhood trauma, gang involvement, and antisocial psychopathic traits among serious juvenile offenders. The influence of gang involvement on the association between childhood trauma and antisocial psychopathic traits was also examined. A quantitative nonexperimental cross-sectional research design was used to examine the associations between childhood trauma, gang involvement, and antisocial psychopathic traits among a sample of serious juvenile offenders. Baseline data from the PTD study were used for this research. The PTD study was a longitudinal survey of 1,354 serious juvenile offenders located in Phoenix, Arizona, and Philadelphia, Pennsylvania (Mulvey, 2017).

SPSS 27 was the statistical software used for this study. OLR was the statistical technique used to answer each research question. The ordinal dependent variables were PCL-YV Factor 4 antisocial psychopathic traits. The five dependent variables were poor anger control, early behavior problems, serious criminal behavior, revocation of conditional release, and criminal versatility. The independent variables were parental warmth, parental hostility, victim of violence, witness to violence, and gang involvement. Interactions between statistically significant childhood traumatic experiences and gang involvement were also analyzed.

Traumatic experiences (Baglivio et al., 2020; Farina et al., 2018; Tsang, 2018) and the influence of delinquent peers (Mallion & Wood, 2018; Ray, 2018; Sijtsema & Lindenberg, 2018) are important risk factors associated with psychopathic behavior.

Childhood trauma (Boduszek et al., 2019; Farina et al., 2018; Tsang, 2018) and gang involvement (Carson & Ray, 2019; Mallion & Wood, 2018) are associated with psychopathic behavior among juvenile offenders. The relationships between childhood trauma, gang involvement, and antisocial psychopathic behavior have not been explicitly investigated. The current study was conducted to address this gap in the literature. Researchers have primarily focused on affective psychopathic traits. Researchers have also mainly used factor analysis instead of trait level analyses to examine risk factors associated with psychopathy. The intention was to confirm findings from previous studies using a sample of serious juvenile offenders. The intent was also to investigate unexplored relationships between psychosocial risk factors and antisocial psychopathic traits.

Gang involvement predicted poor anger control, early behavior problems, serious criminal behavior, conditional release violations, and criminal versatility. Maternal warmth, parental hostility, violence victimization, and witness to violence predicted poor anger control. Parental hostility and violence victimization predicted early behavior problems. Paternal hostility, violence victimization, and witness to violence predicted serious criminal behavior. Maternal warmth, violence victimization, and witness to violence predicted conditional release violations. Maternal hostility, violence victimization, and witness to violence predicted criminal versatility. Gang involvement did not influence the relationship between childhood traumatic experiences and antisocial psychopathic traits.

Interpretation of Findings

The research literature concerning psychopathy among juvenile offenders predominately comprises studies about affective psychopathic traits (Salekin et al., 2018). Psychosocial risk factors that may be related to antisocial psychopathic behavior among juvenile offenders have been largely ignored by researchers in recent years. Associations between childhood trauma, gang involvement, and affective psychopathic traits among juvenile offenders have been investigated (Farina et al., 2018; Mendez et al., 2020; Salekin et al., 2018). The present study was conducted to examine the relationships between childhood trauma-related parental factors, violence exposure, gang involvement, and antisocial psychopathic traits among serious juvenile offenders.

Maternal warmth, parental hostility, exposure to violence, and gang involvement were statistically significant predictors of antisocial psychopathic traits among the study sample. Paternal warmth was not a statistically significant predictor for any of the five antisocial psychopathic traits. The McFadden R^2 values ranged from 0.04 to 0.17. Low McFadden R^2 values were expected because there are numerous risk factors associated with psychopathic behavior. The odds ratio values ranged from .76 to 2.51. Statistically significant though small effects were found for predictor variables. The identification of specific psychosocial risk factors related to antisocial psychopathic traits among serious juvenile offenders was accomplished in this research. The present study adds to the current research literature. Earlier research findings were also confirmed in this study. Psychosocial risk factors associated with affective psychopathic traits are also related to antisocial aspects of psychopathy.

Poor Anger Control

Maternal warmth, parental hostility, violence victimization, witness to violence, and gang involvement predicted poor anger control for this sample of serious juvenile offenders. Maternal warmth could be viewed as a protective factor for poor anger control among the study sample. An increase in maternal warmth decreased the odds of being in a higher category for poor anger control. There is a negative correlation between parental warmth and psychopathic traits (Ray, 2018). Low parental warmth is related to impulsive-irresponsible conduct and antisocial behavior among serious juvenile offenders (Ray, 2018). Maternal and paternal hostility predicted poor anger control. An increase in parental hostility increased the odds of being in a higher category for poor anger control. Parental hostility is associated with interpersonal and antisocial psychopathy features (Ray, 2018).

Violence victimization and witness to violence predicted poor anger control. Trauma exposure leads to behavioral problems, including aggression and impulse control issues (Ireland et al., 2020). Violence exposure is associated with antisocial behavior among serious juvenile offenders (Tsang, 2018). The association between violence exposure and antisocial behavior was confirmed in this research. Gang involvement was also a statistically significant predictor of poor anger control. Gang-involved serious juvenile offenders are more likely to be in a higher category for poor anger control than those with no affiliation. Impulse and behavioral control issues are associated with gang involvement among serious juvenile offenders (Merrin et al., 2020).

Early Behavior Problems

Parental hostility, violence victimization, and gang involvement predicted early behavior problems. Parental hostility and violence victimization were associated with an increase in the odds of being in a higher category for early behavior problems. Childhood trauma is associated with the development of severe maladaptive behaviors (Perez et al., 2018). Adverse childhood experiences are associated with aggression, impulsivity, delinquent peer imitation, academic difficulties, substance abuse, and psychological health problems (Perez et al., 2018). Gang involvement also predicted early behavior problems. Gang-involved serious juvenile offenders are more likely to be in a higher category for early behavior problems than those with no affiliation. Gang membership is associated with substance use, reduced school commitment, teen parenthood, unemployment, increased commitment to antisocial peers, and anger identity development (Thornberry et al., 2018).

Serious Criminal Behavior

Paternal hostility, violence victimization, witness to violence, and gang involvement predicted serious criminal behavior. Paternal hostility and violence exposure was associated with an increase in the odds of being in a higher category for serious criminal behavior. Childhood trauma is associated with violent criminal behavior (Altintas & Bilici, 2018; Johnson, 2018), sex-related offenses (Brown & Grady, 2019), and serious delinquency (Perez et al., 2018). Trauma is also related to violent felony arrests (Johnson, 2018; Perez et al., 2018). Juveniles who have experienced three or more types of trauma are 1.7 to 3 times more likely to have a violent felony arrest than those

experiencing only one traumatic event (Johnson, 2018). Juveniles who have experienced adverse events are more likely to engage in higher rates of violence, criminal behavior, and substance use than those not exposed to trauma-inducing events (Moreira et al., 2020).

Gang involvement was also a statistically significant predictor of serious criminal behavior. Gang-involved serious juvenile offenders are more likely to be in a higher category for serious criminal behavior than those with no affiliation. Gang members are involved in almost all types of criminal behavior at a higher level than nongang affiliated individuals (Thornberry et al., 2018). Criminal behavior related to gang involvement includes violent offenses, property crimes, drug use, drug sales, and gun violence (Connolly & Jackson, 2019; Stodolska et al., 2019; Thornberry et al., 2018). Gang members are perpetrators, victims, and witnesses of violent acts (Connolly & Jackson, 2019; Peterson et al., 2018; Stodolska et al., 2019). Violent acts perpetrated or witnessed by gang members include physical assaults, shootings, and sexual violence (Connolly & Jackson, 2019; Stodolska et al., 2019; Timchenko et al., 2020).

Conditional Release Violations

Maternal warmth, violence victimization, witness to violence, and gang involvement predicted conditional release violations. An increase in maternal warmth was associated with an increase in the odds of being in a higher category for conditional release violations. The finding for maternal warmth was unexpected. Low maternal warmth is associated with the development of psychopathic behavior (Bisby et al., 2017). Maternal rejection predicts criminal recidivism among male juvenile delinquents (Miloš

et al., 2019). Exposure to violence was associated with an increase in the odds of being in a higher category for conditional release violations. Maltreatment predicts recidivism for both male and female juvenile offenders (Vitopoulos et al., 2018). Posttraumatic stress and adverse childhood experiences were found to not be significant predictors of recidivism when criminogenic needs are also assessed (Vitopoulos et al., 2018). Adverse childhood experiences did not predict recidivism among serious juvenile offenders in a previous study (Craig et al., 2020). A serious juvenile offender's criminal justice history is a stronger predictor of recidivism (Craig et al., 2020). Gang involvement also predicted conditional release violations. Gang-involved serious juvenile offenders are more likely to be in a higher category for conditional release violations than those with no affiliation. Gang involvement is also associated with recidivism (Kennedy et al., 2019; Takahashi & Evans, 2018; Wolff, Baglivio, Limoncelli, et al., 2020). Gang status significantly increases the odds of rearrests among juvenile offenders (Wolff, Baglivio, Limoncelli, et al., 2020).

Criminal Versatility

Maternal hostility, violence victimization, witness to violence, and gang involvement predicted criminal versatility. Maternal hostility and exposure to violence were associated with an increase in the odds of being in a higher category for criminal versatility. Childhood traumatic experiences are associated with violent criminal behavior (Altintas & Bilici, 2018; Johnson, 2018), sex-related offenses (Brown & Grady, 2019), and serious delinquency (Perez et al., 2018). Gang involvement also predicted conditional release violations. Gang-involved serious juvenile offenders are more likely to be in a

higher category for criminal versatility than those with no affiliation. Gang members engage in different types of criminal behavior, including violent crime, property crime, substance use, drug sales, and gun crime (Thornberry et al., 2018).

Gang Involvement as a Moderator

The potential influence of gang involvement on the relationship between childhood traumatic experiences and antisocial psychopathic traits was also examined in this study. Violence exposure can contribute to the development of maladaptive behaviors, including aggression and antisocial behavior (Lujan & Fanniff, 2019; Tsang, 2018). Low parental warmth is related to antisocial behavior among serious juvenile offenders (Ray, 2018). Gang involvement is associated with antisocial behavior among juvenile offenders (Mallion & Wood, 2018; Carson & Ray, 2019). Childhood maltreatment (Kubik et al., 2019) and adverse experiences (Wolff, Baglivio, Klein, et al., 2020) are associated with gang involvement. Juveniles who have witnessed violence or murder, engaged in physical fights, and have experienced a life-threatening situation are more likely to associate with gangs than those with more positive experiences (Wolff, Baglivio, Klein, et al., 2020). High parental hostility and having a justice-involved father also increase the risk of gang involvement (Merrin et al., 2020). The connection between childhood trauma, gang involvement, and antisocial behavior is well documented. There were no statistically significant interaction effects found in this study. The hypothesis that gang involvement moderates the association between childhood trauma and antisocial psychopathic traits among serious juvenile offenders was disconfirmed in this research.

Interpretations in the Context of the Conceptual Framework - IPM-CSI

The IPM-CSI served as the conceptual framework for this research. The psychosocial risk factors specified in the IPM-CSI associated with psychopathic behavior were examined in this study. Psychopathy is associated with the development of CSI, antisocial behavior, and delinquent peer relationships (Boduszek et al., 2016). A dysfunctional living environment, poor parenting, and trauma-inducing events are related to psychopathy (Boduszek et al., 2016; Spink et al., 2020). The relationships between parenting factors and self-esteem were not investigated in this study. The emotional and cognitive aspects of gang membership were also not examined. There has only been one study in which all IPM-CSI components have been explored using a single sample (Spink et al., 2020). A correlational research design was used to examine the associations between parental factors, delinquent peer associations, self-esteem, in-group affect, in-group ties, and psychopathic traits among community-based juvenile offenders (Spink et al., 2020). The study population for this study was serious juvenile offenders. A similar research methodology using the IPM-CSI was utilized for this study.

There are four psychosocial risk factors identified in the IPM-CSI involved in the development of CSI. The first factor is an identity crisis resulting from weak societal bonds and rejection by peers (Boduszek et al., 2016). An identity crisis during adolescence is related to poor parental attachment and supervision (Boduszek et al., 2016). Parental warmth, hostile parenting, and violence exposure are related to the first IPM-CSI factor. The second factor is exposure to an antisocial or criminal environment (Boduszek et al., 2016). The third factor is the need to identify with a criminal or

antisocial group to protect one's self-esteem (Boduszek et al., 2016). Gang involvement is related to the second and third components. The fourth factor is the moderating role of personality traits (Boduszek et al., 2016). Personality characteristics influence the relationship between one's environment and CSI development (Boduszek et al., 2016). Antisocial psychopathic traits are related to the fourth component.

Identity Crisis

The development of CSI arises from an identity crisis that occurs during adolescence when relationships with peers play a critical role (Boduszek & Hyland, 2011). An individual will explore different identities to deal with this psychosocial crisis, eventually emerging with either a prosocial or antisocial personality (Boduszek et al., 2016). Maternal warmth, parental hostility, and violence exposure predicted antisocial psychopathic traits for the study sample. Low parental warmth can hinder the development of empathy and guilt (Boduszek et al., 2016). Parental rejection can reduce one's motivation to engage in prosocial behaviors, which results in antisocial behavior and criminality (Boduszek et al., 2016). Low parental supervision is associated with relationships with criminal peers and engagement in criminal behavior, which is influenced by those relationships (Boduszek et al., 2016). Parental control can indirectly affect the type of friends with whom individuals associate (Boduszek et al., 2016). This indirect effect demonstrates that ineffective parenting is a significant risk factor for the development of associations with criminal peers (Boduszek et al., 2016). Relationships with criminal peers contribute to criminal thinking and behavior (Boduszek et al., 2016).

Exposure to a Criminal or Antisocial Environment

Gang involvement predicted each of the five PCL-YV Factor 4 psychopathic traits. Individuals are initially introduced to delinquent behavior through differential associations with antisocial peers, according to the differential reinforcement theory (Boduszek et al., 2016). Individuals who associate with antisocial peers then develop an understanding of how to gain rewards and avoid punishments associated with their behavior (Boduszek et al., 2016). Individuals who have been socialized in a criminal environment and have acquired associated ways of thinking are more likely to engage in criminal behavior in the future (Boduszek et al., 2016). Delinquent juveniles develop cognitions, attitudes, and values that encourage illegal or antisocial behavior through interactions with group influences (Boduszek et al., 2016).

Antisocial peer associations influenced by low parental supervision play a significant role in the development of CSI (Boduszek & Hyland, 2011). Relationships with criminal or antisocial peers significantly contribute to the psychological perception of resemblance with others in the group (Boduszek et al., 2016). Associations with criminal peers are also significantly related to cognitive centrality (Boduszek et al., 2016). Individuals develop a strong belief about the importance and value of belonging to a criminal group through interactions with criminal peers (Boduszek et al., 2016). Criminal group membership subsequently becomes a predominant aspect of the individual's life and self-concept (Boduszek et al., 2016).

Identification with a Criminal Group

Group members increase positive self-evaluations by comparing themselves to individuals within their organization (Boduszek et al., 2016). Group members acknowledge their organization as more favorable by comparing themselves to individuals from other social groups (Boduszek et al., 2016). This comparison process is based on the social comparison theory (Boduszek et al., 2016). Peer rejection is associated with low self-esteem and antisocial behavior (Boduszek et al., 2016). Antisocial group members may increase their self-esteem by comparing themselves to more disadvantaged or marginalized groups (Boduszek et al., 2016). This comparison allows antisocial group members to perceive their clique more favorably, which results in positive evaluations (Boduszek et al., 2016). Criminal thinking patterns are related to negative self-evaluations (Boduszek et al., 2016). The emotional aspects of group membership and in-group ties are related to positive self-evaluations (Boduszek et al., 2016).

Personality Characteristics

Antisocial psychopathic traits were the dependent variables in this research. The relationship between psychosocial factors and CSI may be influenced by an individual's personality traits (Boduszek et al., 2016). Personality traits influence the relationship between CSI and criminal thinking styles among offenders (Boduszek et al., 2016). Psychopathic traits are also associated with and may influence the development of CSI (Boduszek et al., 2016). The period of incarceration has a significant positive effect on CSI development for offenders with high psychopathic tendencies (Boduszek et al.,

2016). Affective psychopathic traits influence the relationship between criminal or antisocial associations and in-group ties (Spink et al., 2020). Lifestyle and interpersonal psychopathic traits are positively associated with in-group ties (Spink et al., 2020). Antisocial psychopathic traits are associated with all three components of CSI (Spink et al., 2020). The processes involved in the development of CSI are unfavorable social comparisons, failures in prosocial roles, and persistent criminal behavior (Boduszek & Hyland, 2011).

Limitations of the Study

A limitation of this study was the inability to examine gender differences. There were significantly more male juvenile offenders included in the PTD study than females (Mulvey, 2017). Male and female juvenile offenders may experience trauma differently (Durand & de Calheiros Velozo, 2018; Farina et al., 2018). Male and female juvenile offenders also engage in different types of criminal behavior. Antisocial psychopathic behavior may be exhibited in unique ways due to gender differences. Male and female gang members may have different reasoning behind involvement. Childhood trauma, including low parental warmth, hostile relationships with parents, and exposure to violence, are associated with gang involvement (Kubik et al., 2019; Wolff, Baglivio, Klein, et al., 2020). Individual and gender differences might explain why some juvenile offenders with similar traumatic experiences may engage in gang activity while others do not.

A second limitation pertains to the use of secondary data. The accuracy and completeness of the dataset could not be verified. Potential bias-related issues associated

with data collection procedures could not be identified. Researcher bias during the data collection process for the PTD study might have affected the results of this study. Outliers and cases with missing data for key variables were removed from the analysis. Missing values for scale variables were imputed. Issues pertaining to statistical conclusion validity were addressed by utilizing a practically complete dataset, properly preparing the data for analysis, and checking statistical assumptions (Garcia-Perez, 2012).

A third limitation was a specific juvenile offender population was used for this study. The focus on one particular population limits the generalizability of findings. Serious juvenile offenders were the focus of this study. Serious juvenile offenders are more likely to have a history of trauma than young offenders who commit lesser crimes. Serious juvenile offenders are also more likely to be involved in gang activity than other youthful offender populations. Antisocial behavior is prevalent among serious juvenile offenders (Mulder et al., 2019). Juveniles who commit non-violent or misdemeanor offenses may have similar life experiences as those who perpetrate more serious crimes. Juveniles who commit minor crimes may also exhibit the same types of psychopathic behavior as serious offenders.

A fourth limitation pertains to the research design. Correlational research designs are commonly used in social sciences research. Correlational research designs are most useful for investigating factors associated with psychopathic behavior. OLR was used to examine the predictive ability of childhood traumatic experiences and gang involvement for antisocial psychopathic traits. Regression analysis results cannot and should not be

used to draw inferences about causation (Farina et al., 2018). Psychopathy is a complex personality disorder. The identification of risk factors associated with psychopathy is critical for appropriately addressing related behaviors.

Recommendations

Parental warmth and hostility were the only parental factors associated with psychopathy that were examined in this study. There are many other parental factors related to psychopathic behavior that could be investigated by researchers, including neglect, psychological harm, and specific forms of abuse (Boduszek et al., 2019; Farina et al., 2018). Data imputation was used to fill missing data points for parental warmth and hostility. There are various reasons why data were missing for parental factors, including a parent being absent, single-parent homes, or participants feeling uncomfortable about revealing certain information. Researchers could compare different living situations for juvenile offenders in relation to antisocial psychopathic behavior. Exposure to violence was also examined in this study. Violence exposure was investigated in a general manner. There are various types of violence exposure related to psychopathy, including domestic violence (Moreira et al., 2020) and community violence (Walters, 2018). Research to investigate specific types of violence exposure could help clarify which forms are more related to antisocial psychopathic behavior.

Many of the studies discussed in the literature review focused only on male juvenile offenders. Gender differences were not examined in this study. Female juvenile offenders were included in this research. There was an inadequate amount of female juvenile offenders included in the sample population to investigate gender differences.

Research should be conducted using samples of female juvenile offenders. Research to investigate gender differences is also needed to fully understand the etiology and trajectory of antisocial psychopathic behavior among serious juvenile offenders. Research that includes an equal number of males and females could be useful for the identification of psychosocial risk factors related to antisocial psychopathic traits, which are more prevalent based on gender. Gender studies may also clarify the role of psychopathy and childhood trauma in gang involvement.

Serious juvenile offenders were the focus of this study. The focus on one specific population limits the generalizability of research findings. The statistically significant psychosocial risk factors identified in this study may be applicable to juveniles who commit non-violent or misdemeanor offenses. Juveniles who commit minor crimes may also exhibit the same types of psychopathic behavior as serious offenders. Research using different populations of juvenile offenders should be conducted to examine the variables investigated in this study.

OLR was used to examine the predictive ability of childhood traumatic experiences and gang involvement for antisocial psychopathic traits. Inferences about causation cannot be drawn from this research (Farina et al., 2018). A cross-sectional research design was used to examine the study variables. Longitudinal studies to identify which antisocial psychopathic traits diminish or disappear as a result of maturation should be conducted. Longitudinal research could also be used to examine the effect of gang involvement on antisocial psychopathic behavior over time.

Implications

Positive Social Change

Psychopathy is characterized by antisocial behavior, emotional dissociation, and maladaptive interpersonal traits (Lewis, 2018; Viding & McCrory, 2018). Individuals who exhibit psychopathic tendencies can cause considerable harm to members of society (Geerlings et al., 2020). The societal costs related to this harm can be substantial (Viding & McCrory, 2018). The rehabilitation process for juvenile offenders does not end once the treatment program culminates and they are reintegrated into society. The communities to which juvenile offenders return after confinement should have programs designed to promote the prosocial behaviors emphasized during treatment. Community leaders could use the results of this study to develop and support the need for community-based programs for troubled youth. Prosocial behavior-related programs throughout the community could contribute to positive social change by reducing criminal behavior, gang membership, and recidivism. A reduction in criminal behavior, gang activity, and reoffending would improve public safety. Prosocial behavior-related programs could also lead to a positive and productive future for former youthful offenders.

Research Implications

The present study was designed with an effort to investigate the predictive ability of psychosocial risk factors related to antisocial psychopathic behavior among serious juvenile offenders. Additional consideration was also given to the possible interaction effects of statistically significant predictors for antisocial psychopathic traits. Research concerning the relationships between risk factors related to juvenile psychopathy is

substantial. The problem with the current body of literature is that researchers have mainly focused on affective psychopathic traits. The current study was conducted due to the scarcity of research on antisocial psychopathic traits among juvenile offenders.

Research regarding the relationships between childhood trauma, gang involvement, and antisocial psychopathic traits among juvenile offenders is not currently in circulation. The present study was designed to address this gap in the literature. The predictive ability of childhood trauma and gang involvement for antisocial psychopathic traits among serious juvenile offenders was examined in this study. Maternal warmth, parental hostility, exposure to violence, and gang involvement predicted antisocial psychopathic behavior for the sample of serious juvenile offenders included in the study. The research findings are an extension of what is already known about juvenile offenders with psychopathic tendencies and gang-involved youth. The importance of identifying psychosocial risk factors related to antisocial psychopathic behavior was highlighted in this study. There are many other psychosocial risk factors related to antisocial psychopathic behavior that were not included in this research. Researchers could investigate other psychosocial risk factors using similar research methods in the future.

Recommendations for Practice

Criminal justice professionals, forensic psychologists, treatment providers, and caregivers must have a complete understanding of the risk factors correlated with psychopathy to effectively rehabilitate juvenile offenders who exhibit psychopathic traits (Lewis, 2018). Treatment programs for juvenile offenders with psychopathic tendencies should include methods to address developmental factors, external influences, underlying

deficits, and maladaptive behaviors (Lewis, 2018). Juvenile offenders are not a homogenous group (Farina et al., 2018). Juvenile offenders come from diverse backgrounds (Farina et al., 2018) and present a wide variety of individual-level problems (Mulder et al., 2019).

Parents and caregivers have a responsibility to provide a positive and nurturing living environment for their children. There are many negative factors that could lead to dysfunctional living conditions or the breakdown of a family unit. The identification of juvenile offenders with abuse histories or less than favorable living conditions is critical. Juveniles who have come from homes that are void of love may engage in criminal or antisocial behavior (Spink & Woodfield, 2019). Juveniles who are not adequately supervised by parents or caregivers may associate with delinquent peers (Spink & Woodfield, 2019).

The importance of parental and social factors related to psychopathic behavior is emphasized in this research. Serious juvenile offenders with psychopathic tendencies who have experienced neglect, psychological trauma, or associate with gangs could be effectively rehabilitated if interventions, including functional family therapy and delinquency prevention programs, are appropriately implemented (Lewis, 2018; Ray, 2018; Viding & McCrory, 2018). The necessity of comprehensive forensic assessments, effective trauma-based interventions, and appropriate supervision measures for serious juvenile offenders who exhibit antisocial psychopathic behavior is highlighted in this research.

Conclusions

Psychopathy is a multifaceted personality disorder. Trait-level research may be ideal for investigating the risk factors and behaviors associated with psychopathy. Research to identify risk factors related to psychopathic behavior may be more informative when each trait or behavior is examined individually as opposed to factor level analysis. The associations between childhood traumatic experiences, gang involvement, and antisocial psychopathic traits among serious juvenile offenders were examined in this study. Maternal warmth, parental hostility, violence exposure, and gang involvement predict antisocial psychopathic traits among serious juvenile offenders. Psychosocial risk factors play a significant role in the development and trajectory of psychopathic behavior among juvenile offenders (Farina et al., 2018; Mallion & Wood, 2018; Ray, 2018; Sijtsema & Lindenberg, 2018).

Juveniles present a wide variety of individual, psychological, behavioral, and social difficulties (Mulder et al., 2019). Serious juvenile offenders are a priority target population for intervention and treatment (Mulder et al., 2019). The goal of treatment is to prevent these serious offenders from persisting in their criminal careers into adulthood (Mulder et al., 2019). Effective treatment plans could be developed for juveniles with psychopathic tendencies if associated risk factors and corresponding behaviors are identified (Farina et al., 2018; Viding & McCrory, 2018). The treatment and rehabilitation process for serious juvenile offenders with psychopathic tendencies could prove to be difficult when trauma and delinquent peer relationships are significant contributing factors. General treatment approaches may not be effective for juvenile

offenders with wide-ranging individual criminogenic and psychological needs. Extensive research to identify protective and risk factors associated with psychopathic behavior among juvenile offenders is crucial. The underlying causes of antisocial and criminal behavior should be the primary focus for criminal justice professionals and treatment providers.

Research on the relationships between affective psychopathic traits and related environmental risk factors is abundant (Glenn, 2019; Mendez et al., 2020). The emphasis on only affective traits impedes a comprehensive understanding of how risk factors may contribute to psychopathic behavior (Salekin et al., 2018). There was no found research concerning the relationships between childhood traumatic experiences, gang involvement, and antisocial psychopathic traits among juvenile offenders. The identified research problem was addressed in this study. The research findings could be used to identify other areas of concern related to psychopathic behavior among juvenile offenders that should be further investigated.

Juvenile offenders are ultimately a product of their environment. The findings in this present study may also be applicable to similar juvenile offender populations. Treatment providers within juvenile correctional settings must understand the associations between psychosocial risk factors and related behaviors to effectively rehabilitate young offenders. Treatment providers cannot successfully rehabilitate juvenile offenders without support. Parents, caregivers, and community leaders also have a responsibility to provide a means by which youthful offenders can develop the prosocial mentality to successfully integrate back into society.

References

Altintas, M., & Bilici, M. (2018). Evaluation of childhood trauma with respect to criminal behavior, dissociative experiences, adverse family experiences and psychiatric backgrounds among prison inmates. *Comprehensive Psychiatry, 82*, 100–107. https://doi.org/10.1016/j.comppsych.2017.12.006

Auyong, Z. E. G., Smith, S., & Ferguson, C. J. (2018). Girls in gangs: Exploring risk in a British youth context. *Crime & Delinquency*, *64*(13), 1698–1717. https://doi.org/10.1177/0011128718763130

Backman, H., Laajasalo, T., Jokela, M., & Aronen, E. T. (2018). Interpersonal relationships as protective and risk factors for psychopathy: A follow-up study in adolescent offenders. *Journal of Youth and Adolescence, 47*(5), 1022-1036. https://doi.org/10.1007/s10964-017-0745-x

Baglivio, M. T., Wolff, K. T., DeLisi, M., & Jackowski, K. (2020). The role of adverse childhood experiences (ACEs) and psychopathic features on juvenile offending criminal careers to age 18. *Youth Violence and Juvenile Justice, 18*(4), 337–364, 1-28. https://doi.org/10.1177/1541204020927075

Barroso, R., Figueiredo, P., Ramião, E., & Fanti, K. (2020). Using psychopathy to identify differences between variants of juveniles who have committed sexual offenses. *Journal of Sexual Aggression, 27*(1), 1-12. https://doi.org/10.1080/13552600.2019.1705407

Bisby, M. A., Kimonis, E. R., & Goulter, N. (2017). Low maternal warmth mediates the relationship between emotional neglect and callous-unemotional traits among

male juvenile offenders. *Journal of Child and Family Studies, 26*(7), 1790-1798. https://doi.org/10.1007/s10826-017-0719-3

Boccio, C. M., & Beaver, K. M. (2018). The influence of psychopathic personality traits, low self-control, and nonshared environmental factors on criminal involvement. *Youth Violence and Juvenile Justice, 16*(1), 37–52. https://doi.org/10.1177/1541204016684176

Boduszek, D., Debowska, A., Willmott, D., Jones, A. D., DeLisi, M., & Kirkman, G. (2019). Is female psychopathy linked with child abuse? An empirical investigation using a person-centered approach. *Journal of Child Sexual Abuse, 28*(6), 708–725. https://doi.org/10.1080/10538712.2019.1592272

Boduszek, D., Dhingra, K., & Debowska, A. (2016). The integrated psychosocial model of criminal social identity (IPM-CSI). *Deviant Behavior, 37*(9), 1023–1031. https://doi.org/10.1080/01639625.2016.1167433

Boduszek, D., & Hyland, P. (2011). The theoretical model of criminal social identity: Psychosocial perspective. *International Journal of Criminology and Sociological Theory, 4*(1), 604-615. https://pdfs.semanticscholar.org/095b/089b0e522ea16f319b04274ea6f8e8f1e410.pdf

Braga, T., Cunha, O., & Maia, Â. (2018). The enduring effect of maltreatment on antisocial behavior: A meta-analysis of longitudinal studies. *Aggression and Violent Behavior, 40*, 91–100. https://doi.org/10.1016/j.avb.2018.04.003

Brown, A., & Grady, M. D. (2019). Helplessness and hopelessness in adolescents who

commit sexual and nonsexual crimes. *Victims & Offenders, 14*(1), 15–31. https://doi.org/10.1080/15564886.2018.1539687

Bryson, S. L., Brady, C. M., & Ray, J. V. (2020). A longitudinal test of the mediational role of delinquent peer association on the link between psychopathy and offending. *Journal of Interpersonal Violence*, 1–26. https://doi.org/10.1177/0886260520922360

Cardwell, S. M., & Piquero, A. R. (2018). Does violence in adolescence differentially predict offending patterns in early adulthood? *International Journal of Offender Therapy and Comparative Criminology*, *62*(6), 1603–1628. https://doi.org/10.1177/0306624X16688978

Carson, D. C., & Ray, J. V. (2019). Do psychopathic traits distinguish trajectories of gang membership? *Criminal Justice and Behavior, 46*(9), 1337–1355. https://doi.org/10.1177/0093854819867388

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(*1*), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Colins, O. F., Fanti, K. A., Salekin, R. T., Mulder, E., & Andershed, H. (2018). Psychopathy in detained boys: The search for primary and secondary variants in a clinical setting. *Personality Disorders: Theory, Research, and Treatment, 9*(5), 408–419. https://doi.org/10.1037/per0000277

Conger, R., Ge, X., Elder, G., Jr. Lorenz, F., and Simons, R. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development, 65*, 541-561. https://doi.org/10.2307/1131401

Connolly, E. J., & Jackson, D. B. (2019). Adolescent gang membership and adverse behavioral, mental health, and physical health outcomes in young adulthood: A within-family analysis. *Criminal Justice and Behavior, 46*(11), 1566–1586. https://doi.org/10.1177/0093854819871076

Craig, J. M., Trulson, C. R., DeLisi, M., & Caudill, J. W. (2020). Toward an understanding of the impact of adverse childhood experiences on the recidivism of serious juvenile offenders. *American Journal of Criminal Justice*, 1-16. https://doi.org/10.1007/s12103-020-09524-6

Daigle, L. E., Harris, M. N., & Teasdale, B. (2020). Psychopathic traits and victimization: What mechanisms mediate the relationship? *Criminal Justice and Behavior, 47*(7), 886–904. https://doi.org/10.1177/0093854820919915

DeLisi, M., Tostlebe, J., Burgason, K., Heirigs, M., & Vaughn, M. (2018). Self-control versus psychopathy: A head-to-head test of general theories of antisociality. *Youth Violence and Juvenile Justice, 16*(1), 53-76. https://doi.org/10.1177/1541204016682998

Dierkhising, C. B., Sanchez, J. A., & Gutierrez, L. (2019). "It changed my life": Traumatic loss, behavioral health, and turning points among gang-involved and justice-involved youth. *Journal of Interpersonal Violence*, 1–23. https://doi.org/10.1177/0886260519847779

Durand, G., & de Calheiros Velozo, J. (2018). The interplay of gender, parental behaviors, and child maltreatment in relation to psychopathic traits. *Child abuse & neglect, 83*, 120-128. https://doi.org/10.1016/j.chiabu.2018.07.013

Elliot, D. S. (1990). *National Youth Survey*. Institute of Behavioral Science, University of Colorado.

Fang, J., Wang, X., Yuan, K.-H., & Wen, Z. (2020). Childhood psychological maltreatment and moral disengagement: A moderated mediation model of callous-unemotional traits and empathy. *Personality and Individual Differences, 157*, 1-7. https://doi.org/10.1016/j.paid.2020.109814

Farina, A. S. J., Holzer, K. J., DeLisi, M., & Vaughn, M. G. (2018). Childhood trauma and psychopathic features among juvenile offenders. *International Journal of Offender Therapy and Comparative Criminology, 62*(14), 4359–4380. https://doi.org/10.1177/0306624X18766491

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2013). G*Power (Version 3.1.7) [Computer software]. http://www.softpedia.com/get/Science-CAD/G-Power.shtml

Flanagan, I. M. L., Auty, K. M., & Farrington, D. P. (2019). Parental supervision and later offending: A systematic review of longitudinal studies. *Aggression and Violent Behavior, 47*, 215–229. https://doi.org/10.1016/j.avb.2019.06.003

Garcia-Perez, M. A. (2012). Statistical conclusion validity: some common threats and simple remedies. *Frontiers in Psychology, 3*, 1-11. https://doi.org/10.3389/fpsyg.2012.00325

Garofalo, C., Neumann, C. S., & Velotti, P. (2020). Psychopathy and aggression: The role of emotion dysregulation. *Journal of Interpersonal Violence*, 1–25. https://doi.org/10.1177/0886260519900946

Geerlings, Y., Asscher, J. J., Stams, G.-J. J. M., & Assink, M. (2020). The association

between psychopathy and delinquency in juveniles: A three-level meta-analysis. *Aggression and Violent Behavior, 50*, 1-10. https://doi.org/10.1016/j.avb.2019.101342

Glenn, A. L. (2019). Early life predictors of callous-unemotional and psychopathic traits. *Infant Mental Health Journal, 40*(1), 39-53. https://doi.org/10.1002/imhj.21757

Goulter, N., Kimonis, E. R., & Heller, E. (2018). Antisocial process screening device subscales predict recidivism in an Australian juvenile offender sample. *Journal of Psychopathology and Behavioral Assessment, 40*(2), 159–168. https://doi.org/10.1007/s10862-018-9669-3

Hawes, S. W., Byrd, A. L., Kelley, S. E., Gonzalez, R., Edens, J. F., & Pardini, D. A. (2018). Psychopathic features across development: Assessing longitudinal invariance among Caucasian and African American youths. *Journal of Research in Personality, 73*, 180–188. https://doi.org/10.1016/j.jrp.2018.02.003

Inter-university Consortium for Political and Social Research. (2020). *Access restricted data*. https://www.icpsr.umich.edu/web/ICPSR/studies/36800/datadocumentation

Ireland, J. L., Mann, S., Lewis, M., Ozanne, R., McNeill, K., & Ireland, C. A. (2020). Psychopathy and trauma: Exploring a potential association. *International Journal of Law and Psychiatry, 69*, 1-15. https://doi.org/10.1016/j.ijlp.2020.101543

Johnson, M. E. (2018). Trauma, race, and risk for violent felony arrests among Florida juvenile offenders. *Crime & Delinquency, 64*(11), 1437–1457. https://doi.org/10.1177/0011128717718487

Kennedy, T. D., Edmonds, W. A., Millen, D. H., & Detullio, D. (2019). Chronic juvenile

offenders: Exploring risk factor models of recidivism. *Youth Violence & Juvenile Justice*, *17*(2), 174–193. https://doi.org/10.1177/1541204018770517

Kubik, J., Docherty, M., & Boxer, P. (2019). The impact of childhood maltreatment on adolescent gang involvement. *Child Abuse & Neglect, 96*, 1-11. https://doi.org/10.1016/j.chiabu.2019.104096

Lee, Y., & Kim, J. (2020). Psychopathic traits among serious juvenile offenders: developmental pathways, multidimensionality, and stability. *Crime & Delinquency*, 1–29. https://doi.org/10.1177/0011128720926120

Lewis, M. (2018). Treatment of psychopathy: A conceptual and empirical review. *Journal of Criminological Research, Policy, and Practice, 4*(3), 186-198. https://doi.org/10.1108/JCRPP-06-2018-0019

Liu, X. (2009). Ordinal regression analysis: Fitting the proportional odds model using Stata, SAS and SPSS. *Journal of Modern Applied Statistical Methods, 8*(2), 632-645. https://digitalcommons.wayne.edu/jmasm/vol8/iss2/30/

Louviere, J. J., Hensher, D. A., & Swait, J. D. (2000). *Stated choice methods: Analysis and Applications*. Cambridge University Press. https://doi.org/10.1017/CBO9780511753831

Lujan, M. J. W. M., & Fanniff, A. M. (2019). Justice for all: Trauma and the need for safety and fairness within juvenile justice facilities. *Criminal Justice and Behavior*, *46*(1), 63–81. https://doi.org/10.1177/0093854818796060

Maity, A. K., Pradhan, V., & Das, U. (2019). Bias reduction in logistic regression with missing responses when the missing data mechanism is nonignorable. *American*

Statistician, 73(4), 340–349. https://doi.org/10.1080/00031305.2017.1407359

Mallion, J. S., & Wood, J. L. (2018). Emotional processes and gang membership: A narrative review. *Aggression & Violent Behavior, 43*, 56–63. https://doi.org/10.1016/j.avb.2018.10.001

Marcoulides, K. M., & Raykov, T. (2019). Evaluation of variance inflation factors in regression models using latent variable modeling methods. *Educational and Psychological Measurement, 79*(5), 874–882. https://doi.org/10.1177/0013164418817803

McCuish, E. C., & Lussier, P. (2018). A developmental perspective on the stability and change of psychopathic personality traits across the adolescence–adulthood transition. *Criminal Justice and Behavior, 45*(5), 666–692. https://doi.org/10.1177/0093854818761992

McGuigan, W. M., Luchette, J. A., & Atterholt, R. (2018). Physical neglect in childhood as a predictor of violent behavior in adolescent males. *Child Abuse & Neglect, 79*, 395–400. https://doi.org/10.1016/j.chiabu.2018.03.008

Menard, S. (2009). *Logistic regression: From introductory to advanced concepts and applications*. Sage Publications. https://doi.org/10.4135/9781483348964

Mendez, L., Mozley, M. M., & Kerig, P. K. (2020). Associations among trauma exposure, callous-unemotionality, race or ethnicity, and gang involvement in justice-involved youth. *Criminal Justice and Behavior, 47*(4), 457–469. https://doi.org/10.1177/0093854819897940

Merrin, G. J., Davis, J. P., Ingram, K. M., & Espelage, D. L. (2020). Examining social-

ecological correlates of youth gang entry among serious juvenile offenders: A survival analysis. *American Journal of Orthopsychiatry*, 1-10. https://doi.org/10.1037/ort0000491

Miloš, S., Nikola, S., Jelena, B., Jelena, S., Marina, H. P., & Milkica, N. (2019). The prediction of criminal recidivism in male juvenile delinquents. *Psihologija, 52*(3), 285–301. https://doi.org/10.2298/PSI181002005S

Moreira, D., Moreira, D. S., Oliveira, S., Ribeiro, F. N., Barbosa, F., Fávero, M., & Gomes, V. (2020). Relationship between adverse childhood experiences and psychopathy: A systematic review. *Aggression and Violent Behavior, 53*, 1-14. https://doi.org/10.1016/j.avb.2020.101452

Mulder, E., Brand, E., Bullens, R., & van Marle, H. (2019). Toward a classification of juvenile offenders: Subgroups of serious juvenile offenders and severity of recidivism. *International Journal of Offender Therapy and Comparative Criminology, 63*(6), 819–836. https://doi.org/10.1177/0306624X10387518

Mulvey, E. P. (2017). *Research on pathways to desistance [Maricopa County, AZ and Philadelphia County, PA]: Subject Measures - Scales, 2000-2010.* Inter-university Consortium for Political and Social Research [distributor], 2017-12-14. https://doi.org/10.3886/ICPSR36800.v4

Mulvey, E. P., & Schubert, C. A. (2014). *Pathways to desistance measures*. https://www.pathwaysstudy.pitt.edu/codebook/measures.html

Mulvey, E. P., Schubert, C. A., & Piquero, A. (2014). *Pathways to desistance – Final technical report*. https://www.ncjrs.gov/pdffiles1/nij/grants/244689.pdf

Neumann, C. S., Kosson, D. S., Forth, A. E., & Hare, R. D. (2006). Factor structure of the Hare Psychopathy Checklist: Youth Version (PCL: YV) in incarcerated adolescents. *Psychological Assessment, 18*(2), 142–154. https://doi.org/10.1037/1040-3590.18.2.142

Nurunnabi, A. A. M., Rahmatullah Imon, A. H. M., & Nasser, M. (2010). Identification of multiple influential observations in logistic regression. *Journal of Applied Statistics, 37*(10), 1605–1624. https://doi.org/10.1080/02664760903104307

Olvera Astivia, O. L., Gadermann, A., & Guhn, M. (2019). The relationship between statistical power and predictor distribution in multilevel logistic regression: a simulation-based approach. *BMC Medical Research Methodology, 19*(1), 1-20. https://doi.org/10.1186/s12874-019-0742-8

Pechorro, P., Braga, T., Kahn, R. E., Gonçalves, R. A., & Delisi, M. (2018). A retrospective study on how psychopathic traits differentiate recidivists from first-time female youth offenders in juvenile detention centers. *Journal of Forensic Psychology Research and Practice, 18*(4), 281–298. https://doi.org/10.1080/24732850.2018.1480848

Pechorro, P., Braga, T., Ray, J. V., Gonçalves, R. A., & Andershed, H. (2019). Do incarcerated male juvenile recidivists differ from first-time offenders on self-reported psychopathic traits? A retrospective study. *European Journal of Criminology, 16*(4), 413–431. https://doi.org/10.1177/1477370818772774

Pechorro, P., Seto, M. C., Ray, J. V., Alberto, I., & Simões, M. R. (2019). A prospective study on self-reported psychopathy and criminal recidivism among incarcerated

male juvenile offenders. *International Journal of Offender Therapy & Comparative Criminology, 63*(14), 2383–2405. https://doi.org/10.1177/0306624X19849569

Perez, N. M., Jennings, W. G., & Baglivio, M. T. (2018). A path to serious, violent, chronic delinquency: The harmful aftermath of adverse childhood experiences. *Crime & Delinquency, 64*(1), 3–25. https://doi.org/10.1177/0011128716684806

Peterson, D., Carson, D. C., & Fowler, E. (2018). What's sex (composition) got to do with it? The importance of sex composition of gangs for female and male members' offending and victimization. *Justice Quarterly, 35*(6), 941–976. https://doi.org/10.1080/07418825.2018.1424231

Ray, J. V. (2018). Developmental patterns of psychopathic personality traits and the influence of social factors among a sample of serious juvenile offenders. *Journal of Criminal Justice, 58*, 67–77. https://doi.org/10.1016/j.jcrimjus.2018.07.004

Ridder, K. A., & Kosson, D. S. (2018). Investigating the components of psychopathic traits in youth offenders. *Journal of Psychopathology and Behavioral Assessment, 40*(1), 60–68. https://doi.org/10.1007/s10862-018-9654-x

Rose, K., Woodworth, M., & Minton, J. (2020). An exploration of individual differences in a sample of youth charged with violent sexual and non-sexual crimes. *Psychiatry, Psychology & Law, 27*(1), 44–60. https://doi.org/10.1080/13218719.2019.1687043

Salekin, R. T., Batky, B. D., Bontemps, A. P., & Andershed, H. (2018). Are callous unemotional (CU) traits enough? *Journal of Psychopathology & Behavioral*

Assessment, *40*(1), 1–5. https://doi.org/10.1007/s10862-018-9663-9

Schubert, C. A., Mulvey, E. P., Steinberg, L., Cauffman, E., Losoya, S. H., Hecker, T., Chassin, L., & Knight, G. P. (2004). Operational lessons from the pathways to desistance project. *Youth Violence and Juvenile Justice*, *2*(3), 237–255. https://doi.org/10.1177/1541204004265875

Selner-O'Hagan, M. B., Kindlon, D. J., Buka, S. L., Raudenbush, S. W., & Earls, F. J. (1998). Assessing exposure to violence in urban youth. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, *39*(2), 215. https://doi.org/10.1017/S002196309700187X

Sijtsema, J. J., & Lindenberg, S. M. (2018). Peer influence in the development of adolescent antisocial behavior: Advances from dynamic social network studies. *Developmental Review*, *50*, 140–154. https://doi.org/10.1016/j.dr.2018.08.002

Smith, S., Gomez Auyong, Z. E., & Ferguson, C. (2019). Social learning, social disorganization, and psychological risk factors for criminal gangs in a British youth context. *Deviant Behavior*, *40*(6), 722–731. https://doi.org/10.1080/01639625.2018.1438059

Spink, A., Boduszek, D., & Debowska, A. (2020). Investigating the integrated psychosocial model of criminal social identity (IPM-CSI) within a sample of community based youth offenders. *Journal of Human Behavior in the Social Environment*, *30*(2), 118–137. https://doi.org/10.1080/10911359.2019.1648225

Spink, A. V., & Woodfield, R. (2019). A rapid evidence assessment of the correlates of criminal social identity (CSI). *Polish Psychological Bulletin*, *50*(2), 125–138.

https://doi.org/10.24425/ppb.2019.126028

Stodolska, M., Berdychevsky, L., & Shinew, K. J. (2019). Gangs and deviant leisure. *Leisure Sciences, 41*(4), 278-293. https://doi.org/10.1080/01490400.2017.1329040

Stylianou, I., Charalampous, K., & Stavrinides, P. (2019). Psychopathic traits and adolescents' delinquency: A short-term longitudinal study. *European Journal of Developmental Psychology, 16*(4), 417–432. https://doi.org/10.1080/17405629.2018.1438887

Takahashi, Y., & Evans, L. T. (2018). An application of machine learning for predicting rearrests: Significant predictors for juveniles. *Race and Social Problems, 10*(1), 42-52. https://doi.org/10.1007/s12552-017-9219-8

Thomson, N. D., Bozgunov, K., Psederska, E., & Vassileva, J. (2019). Sex differences on the four-facet model of psychopathy predict physical, verbal, and indirect aggression. *Aggressive behavior, 45*(3), 265-274. https://doi.org/10.1002/ab.21816

Thomson, N. D., & Centifanti, L. C. M. (2018). Proactive and reactive aggression subgroups in typically developing children: The role of executive functioning, psychophysiology, and psychopathy. *Child Psychiatry and Human Development, 49*(2), 197–208. https://doi.org/10.1007/s10578-017-0741-0

Thornberry, T. P., Kearley, B., Gottfredson, D. C., Slothower, M. P., Devlin, D. N., & Fader, J. J. (2018). Reducing crime among youth at risk for gang involvement: A randomized trial. *Criminology & Public Policy, 17*(4), 953-989.

https://doi.org/10.1111/1745-9133.12395

Thornberry, T. P., Lizotte, A. J., Krohn, M. D., Farnworth, M., & Jang, S. J. (1994). Delinquent peers, beliefs, and delinquent behavior: A longitudinal test of Interactional Theory. *Criminology*, *32*(1), 47-83. https://doi.org/10.1111/j.1745-9125.1994.tb01146.x

Timchenko, K., Rima, D., Mukhamadiyeva, G., Duzbayeva, S., & Beaver, K. M. (2020). Female involvement in the criminal justice system and risk of violent victimization: An examination of gang involvement. *American Journal of Criminal Justice*, 1-20. https://doi.org/10.1007/s12103-020-09526-4

Tsang, S. (2018). Troubled or traumatized youth? The relations between psychopathy, violence exposure, posttraumatic stress disorder, and antisocial behavior among juvenile offenders. *Journal of Aggression, Maltreatment & Trauma, 27*(2), 164–178. https://doi.org/10.1080/10926771.2017.1372541

Tsang, S., Bontemps, A., & Salekin, R. T. (2020). Co-occurring psychopathy symptoms in offending boys: Do patterns of interactions among symptoms depend on levels of psychopathic tendencies? *Personality and Individual Differences, 154*, 1-8. https://doi.org/10.1016/j.paid.2019.109682

Van der Zouwen, M., Hoeve, M., Hendriks, A. M., Asscher, J. J., & Stams, G. J. J. M. (2018). The association between attachment and psychopathic traits. *Aggression and Violent Behavior, 43*, 45–55. https://doi.org/10.1016/j.avb.2018.09.002

Van Domburgh, L., Geluk, C., Jansen, L., Vermeiren, R., & Doreleijers, T. (2019). Antisocial behavior and victimization over 2-year follow-up in subgroups of

childhood arrestees. *Journal of Interpersonal Violence, 34*(18), 3780–3806. https://doi.org/10.1177/0886260516672052

Viding, E., & McCrory, E. J. (2018). Understanding the development of psychopathy: Progress and challenges. *Psychological Medicine, 48*(4), 566-577. https://doi.org/10.1017/S0033291717002847

Vitopoulos, N. A., Peterson-Badali, M., Brown, S., & Skilling, T. A. (2018). The relationship between trauma, recidivism risk, and reoffending in male and female juvenile offenders. *Journal of Child & Adolescent Trauma, 12*(3), 351–364. https://doi.org/10.1007/s40653-018-0238-4

Walters, G. D. (2018). Exposure to violence as a mediator of the CU-aggression relationship: On the importance of establishing the causal direction of variables in a path analysis. *Journal of Psychopathology & Behavioral Assessment, 40*(2), 169–179. https://doi.org/10.1007/s10862-018-9670-x

Watkins, A. M., & Melde, C. (2018). Gangs, gender, and involvement in crime, victimization, and exposure to violence. *Journal of Criminal Justice, 57*, 11–25. https://doi.org/10.1016/j.jcrimjus.2018.02.005

Wolff, K. T., Baglivio, M. T., Klein, H. J., Piquero, A. R., DeLisi, M., & Howell, J. C. (Buddy). (2020). Adverse childhood experiences (ACEs) and gang involvement among juvenile offenders: Assessing the mediation effects of substance use and temperament deficits. *Youth Violence and Juvenile Justice, 18*(1), 24–53. https://doi.org/10.1177/1541204019854799

Wolff, K. T., Baglivio, M. T., Limoncelli, K. E., & Delisi, M. (2020). Pathways to

recidivism: Do behavioral disorders explain the gang-recidivism relationship during reentry? *Criminal Justice and Behavior*, *47*(7), 867–885. https://doi.org/10.1177/0093854820915631

Appendix: Restricted Data Use Agreement for Confidential Data

Restricted Data Use Agreement
for Confidential Data from
the National Addiction and HIV Data Archive Program

I. Definitions

A. "Investigator" is the person primarily responsible for analysis and other use of Confidential Data obtained through this Agreement.

B. "Research Staff" are all persons at the Investigator's institution, excluding the Investigator, who will have access to Confidential Data obtained through this Agreement.

C. "Institution" is the university or research institution at which the Investigator will conduct research using Confidential Data obtained through this Agreement.

D. "Representative of the Institution" is a person authorized to enter into legal agreements on behalf of Investigator's Institution.

E. "Confidential Data" consist of identifiable private information, linkable to a specific individual either directly or indirectly, for which the individual (whether a person or organization) has the expectation that the information will not be released in a manner that allows public identification of the individual or causes some harm to the individual.

F. "Private Person" means any individual (including an individual acting in his official capacity) and any private (i.e., non-government) partnership, corporation, association, organization, or entity (or any combination thereof), including family, household, school, neighborhood, health service, or institution.

G. "ICPSR" is the Inter-university Consortium for Political and Social Research.

H. "ICPSR Data Access Request System" is the web-based application system for data use agreements at ICPSR.

I. "Data Security Plan" is a component of the Agreement which specifies permissible computer configurations for use of Confidential Data through Investigator responses to a series of questions, and records what the Investigator commits to do in order to keep Confidential Data secure.

J. "Deductive Disclosure" is the discerning of an individual's identity or confidential information through the use of known characteristics of that individual. Disclosure risk is present if an unacceptably narrow estimation of an individual's confidential information is possible or if determining the exact attributes of the individual is possible with a high level of confidence.

K. "Derivative" is a file or statistic derived from the Confidential Data that poses disclosure risk to any Private Person in the Confidential Data obtained through this Agreement. Derivatives include copies of the Confidential Data received from NAHDAP/ICPSR, subsets of the Confidential Data, and analysis results that do not conform to the guidelines in Section VI.G.

II. Description of Disclosure Risk Section

Deductive disclosure of an individual's identity from research data is a major concern of federal agencies, researchers, and Institutional Review Boards. If a person is known to have participated in ANY survey or study or whose information is known to be included in a database from which the Confidential Data were obtained, then a combination of his or her personal characteristics may allow someone to determine which record corresponds to that individual. Investigators and Institutions who receive any portion of Confidential Data are obligated to protect the individual's confidential information from deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

III. Requirements of Investigator

A. The Investigator assumes the responsibility of completing the online restricted data access request and required documents, reports, and amendments.

B. The Investigator agrees to manage and use Confidential Data and implement all Confidential Data security procedures per the Data Security Plan.

IV. Requirements of Institution

The Institution must meet the following criteria:

A. Be an institution of higher education, a research organization, a research arm of a government agency, or a nongovernmental, not for profit, agency.

B. Have a demonstrated record of using Confidential Data according to commonly accepted standards of research ethics and applicable statutory requirements.

V. Obligations of NAHDAP/ICPSR

In consideration of the promises made in Section VI of this Agreement, NAHDAP/ICPSR agrees to:

A. Provide the Confidential Data requested by the Investigator in the Confidential Data Order Summary within a reasonable time of execution of this Agreement by appropriate NAHDAP/ICPSR officials and to make the Confidential Data available to Investigator via download or removable media.

B. Provide electronic documentation of the origins, form, and general content of the Confidential Data sent to the Investigator, in the same time period and manner as the Confidential Data.

C. Provide telephone and/or email consultation to the Investigator and/or Research Staff, to the extent that NAHDAP/ICPSR is able to respond to such inquiries.

NAHDAP/ICPSR MAKES NO REPRESENTATIONS NOR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE CONFIDENTIAL DATA WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS. Unless prohibited by law, Institution and Investigator assume all liability for claims for damages against them by third parties that may arise from the use or disclosure of the Confidential Data.

VI. Obligations of the Investigator, Research Staff, and Institution

Confidential Data provided under this Agreement shall be held by the Investigator, Research Staff, and Institution in strictest confidence and can be disclosed only in compliance with the terms of this Agreement. In consideration of the promises in Section V of this Agreement, and for use of Confidential Data from NAHDAP/ICPSR, the Investigator, Research Staff, and Institution agree:

A. That the Confidential Data will be used solely for research or statistical purposes relative to the research project identified in the request to obtain confidential data accompanying this Agreement, and for no other purpose whatsoever without the prior consent of NAHDAP/ICPSR. Further, no attempt will be made to identify private persons, no Confidential Data of private person(s) will be published or otherwise distributed, and Confidential Data will be protected against deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

B. To supply NAHDAP/ICPSR with a completed online request to obtain confidential data that will include the following:

   1. Signed Agreement
   2. Data Security Plan
   3. Confidential Data Order Summary specifying which files and documentation are requested
   4. Supplemental Agreement with Research Staff signed by each Research Staff member
   5. Pledges of Confidentiality for each Research Staff member
   6. Curriculum Vitae (CV) or resume for the Investigator and each Research Staff member
   7. A copy of a document signed by the Institution's Institutional Review Board (IRB) approving or exempting the research project.

C. To comply fully with the approved Data Security Plan at all times relevant to this Agreement.

D. That no persons other than those identified in this Agreement or in subsequent amendments to this Agreement, as Investigator or Research Staff and who have executed this Agreement, be permitted access to the contents of Confidential Data files or any files derived from Confidential Data files.

E. That within one (1) business day of becoming aware of any unauthorized access, use, or disclosure of Confidential Data, or access, use, or disclosure of Confidential Data that is

inconsistent with the terms and conditions of this Agreement, the unauthorized or inconsistent access, use, or disclosure of Confidential Data will be reported in writing to NAHDAP/ICPSR.

F. That, unless prior specific approval is received from NAHDAP/ICPSR, no attempt under any circumstances will be made to link the data to any individual, whether living or deceased, or with any other dataset, including other datasets provided by NAHDAP/ICPSR.

G. To avoid inadvertent disclosure of private persons by being knowledgeable about what factors constitute disclosure risk and by using disclosure risk guidelines, such as but not limited to, the following guidelines[1] in the release of statistics or other content derived from the Confidential Data.[2]

1. No release of a sample unique for which only one record in the Confidential Data obtained through sampling (e.g., not a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.
2. No release of a sample rare for which only a small number of records (e.g., 3, 5, or 10 depending on sample characteristics) in the Confidential Data provide a certain combination of values from key variables. For example, in no instance should the cell frequency of a cross-tabulation, a total for a row or column of a cross-tabulation, or a quantity figure be fewer than the appropriate threshold as determined from the sample characteristics. In general, assess empty cells and full cells for disclosure risk stemming from sampled records of a defined group reporting the same characteristics.
3. No release of a population unique for which only one record in the Confidential Data that represents the entire population (e.g., from a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.
4. No release of the statistic if the total, mean, or average is based on fewer cases than the appropriate threshold as determined from the sample characteristics.
5. No release of the statistic if the contribution of a few observations dominates the estimate of a particular cell. For example, in no instance should the quantity figures be released if one case contributes more than 60 percent of the quantity amount.
6. No release of data that permits disclosure when used in combination with other known data. For example, unique values or counts below the appropriate threshold for key variables in the Confidential Data that are continuous and link to other data from NAHDAP/ICPSR or elsewhere.
7. No release of minimum and maximum values of identifiable characteristics (e.g., income, age, household size, etc.) or reporting of values in the "tails," e.g., the 5th or 95th percentile, from a variable(s) representing highly skewed populations.

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[1] For more information, see the U.S. Bureau of the Census checklist. *Supporting Document Checklist on Disclosure Potential of Data, at* www.census.gov/srd/sdc/S14-1_v1.3_Checklist.doc; *NCHS Disclosure Potential Checklist* at http://www.cdc.gov/nchs/data/NCHS%20Micro-Data%20Release%20Policy%204-02A.pdf; and *FCSM Statistical Policy Working Paper 22 (Second Version, 2005)* at http://www.fcsm.gov/working-papers/SPWP22_rev.pdf.

[2] VI.G. can be customized with disclosure rules specific to the restricted-use dataset covered by the RDUA.

8. Release only weighted results if specified in the data documentation.
9. No release of ANOVAs and regression equations when the analytic model that includes categorical covariates is saturated or nearly saturated. In general, variables in analytic models should conform to disclosure rules for descriptive statistics (e.g., see #7 above) and appropriate weights should be applied.
10. In no instance should data on an identifiable case, or any of the kinds of data listed in preceding items 1-9, be derivable through subtraction or other calculation from the combination of tables released.
11. No release of sample population information or characteristics in greater detail than released or published by the researchers who collected the Confidential Data. This includes but is not limited to publication of maps.
12. No release of anecdotal information about a specific private person(s) or case study without prior approval.
13. The above guidelines also apply to charts as they are graphical representations of cross-tabulations. In addition, graphical outputs (e.g., scatterplots, box plots, plots of residuals) should adhere to the above guidelines.

H. That if the identity of any private person should be discovered, then:

1. No use will be made of this knowledge;
2. NAHDAP/ICPSR will be advised of the incident within five (5) business days of discovery of the incident;
3. The information that would identify the private person will be safeguarded or destroyed as requested by NAHDAP/ICPSR; and
4. No one else will be informed of the discovered identity.

I. Unless other provisions have been made with NAHDAP/ICPSR, all originals and copies of the Confidential Data, on whatever media, shall be destroyed on or before completion of this Agreement or within 5 days of written request from NAHDAP/ICPSR. Investigator will complete and notarize an Affidavit of Destruction, attesting to the destruction of the Confidential Data. Investigators requiring the Confidential Data beyond the completion of this Agreement should submit a request for continuation three months prior to the end date of the project. This obligation of destruction shall not apply to Investigator's scholarly work based upon or that incorporates the Confidential Data.

J. To ensure that the Confidential Data are managed and used only in compliance with the terms and conditions of this Agreement and with all applicable statutes and regulations. Noncompliance with this Agreement by any Research Staff hereto shall be deemed noncompliance and a breach by Investigator and Institution for purposes of Section VII below.

K. To include in each written report or other publication based on analysis of Confidential Data obtained from this Agreement, the following statement: Data used for this project were supported by the National Institute on Drug Abuse through a cooperative agreement that calls for scientific collaboration between the grantees and the National Institute on Drug Abuse staff.

L. That any books, articles, conference papers, theses, dissertations, reports, or other publications that employed the Confidential Data or other resources provided by NAHDAP/ICPSR reference the bibliographic citation provided by NAHDAP/ICPSR.

M. To provide annual reports to NAHDP/ICPSR staff (through ICPSR's online data access request system), which include:

1. A copy of the annual IRB approval for the Research Project;
2. A listing of public presentations at professional meetings using results based on the Confidential Data or derivatives or analyses thereof;
3. A listing of papers accepted for publication using the Confidential Data, or derivatives or analyses thereof, with complete citations;
4. A listing of research staff or graduate students using the Confidential Data, or derivatives or analyses thereof, for dissertations or theses, the titles of these papers, and the date of completion; and
5. A description in any change in scope of the Research Project being undertaken with the Confidential Data.

N. To notify NAHDAP/ICPSR of a change in institutional affiliation of the Investigator. Notification must be in writing and must be received by NAHDAP/ICPSR at least six (6) weeks prior to Investigator's last day of employment with Institution. Investigator's separation from Institution terminates this Agreement. Investigator may reapply for access to Confidential Data as an employee of the new institution. Re-application requires:

1. Execution of a new Agreement for the Use of Confidential Data by both the Investigator and the proposed new institution;
2. Execution of any Supplemental Agreement(s) with Research Staff and Pledges of Confidentiality by Research Staff at the proposed new institution;
3. Preparation and approval of a new Data Security Plan; and
4. Evidence of approval or exemption by the proposed new Institution's IRB.

These materials must be approved by NAHDAP/ICPSR before Confidential Data or any derivatives or analyses may be stored or accessed at the new institution. Investigator must also, prior to the date of relocation, destroy all electronic and paper files containing Confidential Data or derivatives or analyses thereof at the original Institution. This obligation of destruction shall not apply to Investigator's scholarly work based upon or that incorporates the Confidential Data.

O. If the Investigator is unable to establish and gain approval for the new location, all electronic and paper Confidential Data, will be returned to NAHDAP/ICPSR for storage. Upon approval of the new Confidential Data Security Plan, these stored files will be sent to the Investigator. The Investigator will assume all costs associated with the shipping and storage of these Confidential Data as associated files. Although the Confidential Data will be stored in a secure location, NAHDAP/ICPSR staff assumes no responsibility for the Confidential Data or associated files.

P. That use of the data will be consistent with the Institution's policies regarding scientific integrity and human subject's research.

Q. To respond fully and in writing within ten (10) working days after receipt of any written inquiry from NAHDAP/ICPSR regarding compliance with this Agreement .

VII. Violations of this Agreement

A. The Institution will treat allegations by NAHDAP/ICPSR or other parties of violations of this Agreement as allegations of violations of its policies and procedures on scientific integrity and misconduct. If the allegations are confirmed, the Institution will treat the violations as it would violations of the explicit terms of its policies on scientific integrity and misconduct.

B. In the event Investigator or Institution breaches any provision of this Agreement, they shall be jointly and severally responsible to promptly cure the breach and mitigate any damages. The Investigator and Institution hereby acknowledge that any breach of the confidentiality provisions herein may result in irreparable harm to NAHDAP/ICPSR and the National Institute on Drug Abuse not adequately compensable by money damages. Investigator and Institution hereby acknowledge the possibility of injunctive relief in the event of breach, in addition to money damages. In addition, NAHDAP/ICPSR may:

   1. Terminate this Agreement upon notice and require return of the Confidential Data and any derivatives thereof;
   2. Deny Investigator future access to Confidential Data; and/or
   3. Report the inappropriate use or disclosure to the Secretary of Health and Human Services.

C. Institution agrees, to the extent permitted under the law, to indemnify, defend, and hold harmless The University of Michigan, NAHDAP/ICPSR, and the sources of Confidential Data from any or all claims and losses accruing to any person, organization, or other legal entity as a result of Investigator's, Research Staff's, and/or Institution's acts, omissions, or breaches of this Agreement.

VIII. Confidentiality

The Institution is considered to be a contractor or cooperating agency of NAHDAP/ICPSR; as such, the Institution, the Investigator, and Research Staff are authorized to protect the privacy of the individuals who are the subjects of the Confidential Data by withholding their identifying characteristics from all persons not connected with the conduct of the Investigator's research project. "Identifying characteristics" are considered to include those data defined as confidential under the terms of this Agreement.

IX. Incorporation by Reference

All parties agree that the following documents are incorporated into this Agreement by reference:

A. The application information entered in the online data access request system.

B. A copy of the Institution's IRB approval or exemption of the research project.

C. The Data Security Plan proposed by the Investigator and approved by NAHDAP/ICPSR.

X. Miscellaneous

A. All notices, contractual correspondence, and return of Confidential Data under this Agreement on behalf of the Investigator shall be made in writing and delivered to the address below:

National Addiction and HIV Data Archive Program
ICPSR
P.O. Box 1248
Ann Arbor, MI 48106-1248
nahdap@icpsr.umich.edu

B. This agreement shall be effective for 24 months from execution.

C. The respective rights and obligations of NAHDAP/ICPSR and Investigator, Research Staff, and Institution pursuant to this Agreement shall survive termination of the Agreement.

D. This Agreement, the Investigator's research project, Data Security Plan, or Supplemental Agreement with Research Staff may be amended or modified only by the mutual written consent of the authorized representatives of NAHDAP/ICPSR and Investigator and Institution. Both parties agree to amend this Agreement to the extent necessary to comply with the requirements of any applicable regulatory authority.

E. The persons signing this Agreement have the right and authority to execute this Agreement, and no further approvals are necessary to create a binding agreement.

F. The obligations of Investigator, Research Staff, and Institution set forth within this Agreement may not be assigned or otherwise transferred without the express written consent of NAHDAP/ICPSR.

Institutional Signatures (please use black ink)

Investigator

Signature _____

Date _____

Print Name _____

Title _____

Institution _____

Building/Room Number _____

Street Address _____

City/State/ZIP _____

Telephone _____

Email _____

The below signer represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Agreement on behalf of the Institution. He/she represents and warrants that the execution and delivery of the Agreement and the performance of such party's obligations hereunder have been duly authorized and that the Agreement is a valid and legal agreement binding on such party and enforceable in accordance with its terms.

Representative of Your Institution

Signature _____

Date _____

Print Name _____

Title _____

Institution _____

Building/Room Number _____

Street Address _____

City/State/ZIP _____

Telephone _____

Email _____