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Adverse Childhood Experiences, Attachment, and PTSD Symptoms Among Male Offenders in Court-Ordered Diversion

Michael A. Quinones

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**Adverse Childhood Experiences, Attachment, and PTSD Symptoms Among Male
Offenders in Court-Ordered Diversion**

By

Michael Quinones, M.S.

A Dissertation Presented to the School of Psychology
of Nova Southeastern University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

NOVA SOUTHEASTERN UNIVERSITY

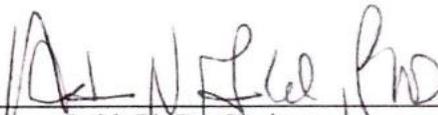
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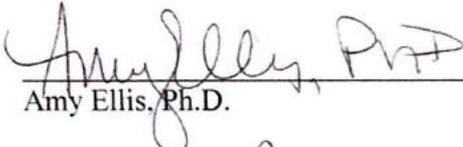
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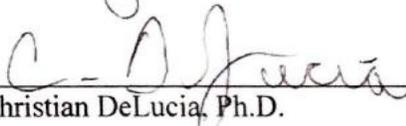
This dissertation was submitted by Michael Quinones, M.S., under the direction of Dr. Steven N. Gold, Ph.D., Chairperson of the dissertation committee listed below. It was submitted to the College of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.

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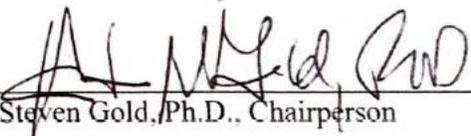
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ABSTRACT

There are millions of adult male offenders currently involved with U.S. corrections system, many of which report a wide range of mental health difficulties and a history of traumatic experiences. Mental health and trauma-related difficulties are important considerations in the treatment and rehabilitation of adult male offenders. The relationship between adverse childhood experiences (ACEs), attachment style, and PTSD symptoms were studied in a sample of adult male participants in a court-ordered diversion program. The sample consisted of 59 men, ranging in age from 19 to 68-years-old, who endorsed a history of at least one prior arrest. Data were collected during a psychoeducational group-therapy class offered at a post-arrest diversion program. Primary study measures included the use of the ACEs questionnaire, Attachment Style Questionnaire (ASQ-40), and the Posttraumatic Stress Disorder Checklist-5 (PCL-5). A priori hypotheses proposed, 1) there is a significant correlation among ACEs, ASQ subscales, and PTSD symptoms, and 2) insecure attachment subscales mediate the relationship between ACEs and PTSD symptoms. Correlation, regression, and mediation analyses evaluated the relationship among ACEs, ASQ subscales and PCL-5 scores. As predicted, ACEs and PTSD symptoms were negatively correlated with secure attachment and positively correlated with insecure attachment. Also as predicted, insecure attachment style (i.e. discomfort from closeness) mediated the relationship between ACEs and PTSD symptoms. Results suggested that the confidence and discomfort with closeness attachment scales shared a significant relationship between and ACEs and PTSD symptoms. These findings suggest that the relationship between ACEs, attachment style, and PTSD symptomatology can further inform conceptualizations and treatments oriented toward improving outcomes for adult male offenders and successful reintegration into their communities.

Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the Student Handbook of Nova Southeastern University. This dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

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CHAPTER 1

Review of the Literature and Problem

Mental Health Issues of Adult Offenders

The total number of individuals currently involved in the U.S. correctional system is staggering, with many of those individual reporting a wide range of mental health difficulties with implications for rehabilitation and reoffending. In 2013, the population of adult individuals in the United States' correctional system stood at 6.9 million (James & Glaze, 2014a). Approximately 4.75 million individuals were under community supervision (i.e. probation or parole) and 2.2 million were incarcerated (James & Glaze, 2014a). Of the total population of individuals in the U.S. correctional system there were 1.3 million female and 5.6 million male offenders accounted for that year. In 2006, James and Glaze (Bureau of Justice Statistics; BJS) published a report on the prevalence of mental health issues of inmates in prisons and jails within the United States. Data for the study was collected by BJS from Federal and State prison records from 2004 and local jails in 2002 (shown in Table 1). In this study, the design included a stratified two-stage sample, where state and federal prisons as well as local jails were selected in the first stage and offenders were interviewed in the second stage. Interviewers from the Census Bureau systematically selected a sample of inmates and conducted the interview with computer-assisted personal interviewing (CAPI). Table 1 presents data related to the mental health issues and background characteristics of the study, such as rates of mental health issues, co-occurring mental health issues and substance abuse, having ever received mental health treatment, and violent and non-violent offenders reporting mental health issues.

Table 1

Mental Health Issues and Background Characteristics as a Percentage of a sample of Jail and Prison Inmates (James & Glaze, 2006)^a

Year data collected	2002	2004	2004
Type of correctional facility	Local Jail (n = 6,982)	State Prison (n = 14,499)	Federal Prison (n = 3,6,86)
Rates of Mental Health Issues			
Male	63	55	44
Female	75	73	61
Co-occurring mental health issues and substance abuse	49	42	29
Ever Received Mental Health Treatment	43	49	35
During year prior to arrest	23	22	15
Received treatment after admission	18	34	24
Violent and Non-violent reoffenders reporting mental health issues			
Violent	32	47	27
Non-violent	33	32	40
Offenders reporting a mental health issue while growing up-			
Lived most of the time with one parent	44	40	45
Parental substance abuse	39	33	37
Family member incarcerated	52	45	52

Note. Adapted from “Mental health problems of prison and jail inmates (NCJ Publication 213600). by James, D. & Glaze, L. U.S. Department of Justice, Office of Justice Programs, p. 1, 2006.

^aOriginal data reported as percentage rounded to the nearest percent

Mental health issues were defined by two measures: (1) a recent history (i.e. symptoms must have occurred in the twelve months prior to intake interview) and/or (2) current symptoms of a mental health problem (James & Glaze, 2006). A recent history of mental health issues included a clinical diagnosis (i.e., major depression, mania, psychotic disorder) or receiving treatment by a

mental health professional. Symptoms of a mental health problem included those specifically related to a diagnosis of major depression, psychotic disorder, or mania based on criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) (James & Glaze, 2006). A substantial number of offenders across local jails and state and federal prisons reported mental health issues. The study reported that 56% of state, 45% of federal, and 64% of adult offenders in local jails qualified as having a mental health issue (James & Glaze, 2006). The vast majority met criteria for mania (43% of state prisoners and 54% of jail inmates), followed by depression (23% of state prisoners and 30% of jail inmates), and psychosis (15% of state prisoners and 24% of jail inmates). The report also found substantial rates of offenders who had re-offended also reported mental health issues. For violent recidivists, 47% (state), 27% (Federal), and 32% (local jail) had reported a mental health issue (James & Glaze 2006). A substantial number of nonviolent recidivists (32% state, 40% federal, and 33% local jail) also reported a mental health issue. The BJS (2014b) released a report on the recidivism rates of adult offenders for offenses classified as violent, property-based, drug-based (i.e. possession, trafficking, and/or miscellaneous drug offenses), and by public order. The report tracked a five-year period from 2005-2010 to assess the rate of recidivism for both overall and each of the classified offenses, and over the five-year span 76% of inmates were rearrested. In the sample of prisoners studied, 73% of male inmates were rearrested for a new crime within 3 years of release (with 23% of re-arrested for violent offenses).

With the large number of male inmates with mental health issues in the U.S. corrections system and the high rates of recidivism for those that are released, it is reasonable to question the rehabilitation process that serves this population. According to these statistics, these individuals are likely to return to a correctional system that provides inadequate resources for mental health

treatment and a low likelihood of improved outcomes. With the large number of male inmates with mental health issues in the U.S. corrections system and the high rates of recidivism for those that are released, it is reasonable to question the rehabilitation process that serves this population. This research (James & Glaze, 2006, 2014a, 2014b) highlights the likelihood of mental health issues among adult offenders, insight about family environment characteristics (e.g. parental substance use, parental separation/divorce, and incarcerated family member), and high rates of recidivism contributing to the outcomes of adult offenders.

Adult Offenders and Adverse Childhood Experiences

Adverse childhood experiences (ACEs) (e.g. parental substance use, physical and/or sexual abuse, family member incarceration etc.) are risk factors associated with a wide range of health issues and criminality in adulthood (Felitti et. al., 1998, 2003). The ACE Questionnaire contains 10 items that identify abuse (i.e. emotional, physical, and sexual), neglect (i.e. emotional and physical), and household dysfunction (i.e. domestic violence, parental substance abuse, parental abandonment, incarcerated and/or mentally ill family member) to which the respondent was exposed before the age of 18. A range of mental health issues (e.g. depressions, substance abuse, suicidality) and physical health issues (e.g. heart disease, cancer) have been found to be related to the presence and quantity of these factors in a respondent's childhood. Additionally, these relationships follow a "dose-response" pattern: the more ACEs in a person's childhood, the greater the risk for adulthood psychological, behavioral, and health problems (Felitti, V. J. et. al., 1998, 2003). Retrospective studies with self-report measures have found exposure to each of the 10 ACEs is associated with criminal offending and substance abuse in

both adult male and female offenders (Reavis, Looman, Franco, & Rojas, 2013; Skarupski, Parisi, Thorpe, Tanner, & Gross, 2016). Skarupski, et al. (2016) studied the relationship of ACEs, mental health symptoms, and quality of life in a sample of maximum-security male offenders ($N = 192$). For the purposes of the study they administered several items from the ACEs measure related to death, trauma, and abuse. For items related to abuse occurring in the home more than once, 50% experienced witnessing a parent being physically abusive to the other, 50% reported physical abuse by a parent as a child, and 70% reported verbal abuse from a parent. Almost half the sample (46%) reported that a family member was imprisoned and 32% reported a family member being murdered. Reavis et al., (2013) conducted a study on the occurrence of ACEs in a sample consisting of four groups of adult male offenders (i.e. nonsexual child abusers, domestic violence offenders, sexual offenders, and stalkers) and a normative sample of non-offender adult males (presented in Table 2).

Table 2

Adverse Childhood Experiences (ACE) Questionnaire Scores from Sample of Male Offenders and Comparison with Normative Sample (Reavis, Looman, Franco & Rojas, 2013)

ACE Score	Offender Sample (n = 151), %	Normative Sample (n = 7970), %	t-value	O/R (95% CI)
0	9.3	38.0	7.22 ^a	0.24 [0.1409 to 0.4226]
1	13.2	26.0	3.56 ^a	0.48 ^a [0.2996 to 0.7818]
2	13.9	15.9	0.67	0.87 [0.5521 to 1.3862]
3	15.2	9.5	2.36 ^a	1.60 ^b [1.0277 to 2.5025]
+4	48.3	12.5	10.86 ^a	3.82 ^c [2.8598, 5.0907]

Note. Adapted from “Adverse Childhood Experiences and Adult Criminality: How Long Must We Live before We Possess Our Own Lives?” by Reavis, Looman, Franco & Rojas, 2013, p. 46, 2013.

^a $p < .01$, ^b $p < .05$, ^c $p < .001$

A relatively small percentage of offenders reported no ACEs (only 9.3%) as compared to a larger percentage of the normative sample (38%), suggesting that offenders were more likely to endorse at least one exposure to ACEs. Additionally, the odds of being an offender and having an ACEs score of 4 or more was 3.82. The authors also reported eight out of ten adverse childhood events were found to be present at statistically significantly higher levels ($p < .05$) among the sample of offenders as compared to the normative sample (i.e. psychological abuse, physical abuse, sexual abuse, household substance use, household mental illness, parental divorce, criminal behavior in household). Data from this study provides further support for the increased likelihood of adult male offenders being exposed to a wide array of ACEs. Adult offenders (i.e. both male and female) are more likely to be exposed to ACEs as compared to a normative sample from the general population (Reavis et. al., 2013; Grella & Messina, 2006).

Prospective studies on childhood risk factors (i.e. deficient family environment, adverse childhood experiences) and long-term negative consequences (e.g. mental health issues, incarceration) can strengthen the inferences derived from retrospective data regarding adult offenders. For research on adult offenders, prospective studies can provide insight about the relationship between ACEs and pathways that lead to juvenile and adult offending. Mersky, Topitzes, and Reynolds (2013) conducted a prospective cohort study on the impacts of ACEs on health, mental health, and substance use in early adulthood for mixed-gender and gender-specific models. The sample consisted of minority urban youth ($N = 1,451$; 93% African American, 7% Hispanic). Data were originally collected for the Chicago Longitudinal Study from participants beginning when they were in preschool and kindergarten through 26 years-of-age. The data for the study was derived from child welfare, juvenile court, and criminal court records. The cohort consisted of two groups: “non-maltreatment” ($n = 1,321$) and “maltreatment” ($n = 130$). The authors found that childhood maltreatment (i.e. physical and/or sexual abuse, neglect) significantly increased the chances of being convicted of a non-violent or a violent adult weapons charge, and results showed no significant moderating effect of gender on the maltreatment-violence link. They found that environmental instability (i.e. out-of-home placement, moving to different schools), childhood externalizing behavior (i.e. trouble making behavior as indication of dysregulation), and adolescent peer social skills fully mediated the association between child maltreatment and violent crime for males. This study supports the connection between childhood abuse, environmental instability, and childhood externalizing

behaviors in the developmental pathway for male offenders. These factors share a relevant parallel to the ACEs, background and mental health characteristics reported by adult male offenders. English, Widom, and Brandford (2002) conducted a prospective study on delinquency, adult criminality, and violence from a sample of abused and/or neglected children (n = 877) compared to a control group matched for age, race/ethnicity, gender, and approximate family social class (n = 877). Data was initially collected in 1980-84 from court dependency records substantiating cases of child abuse and neglect, while follow up data was collected from Local, State, and Federal law enforcement agencies through 1998. Participants were on average aged 24 when criminal histories were checked (SD = 2.8 years). The authors reported results that supported the relationship between childhood abuse and neglect and increased risk of juvenile and adult criminality, including: 1) the abuse and neglect group (19.6%) were 4.8 times more likely to have a juvenile arrest record than controls (4.1%); 2) the abuse and neglect group were two times more likely to be arrested for an offense as an adult (41.7% as compared to 21.0% for controls); 3) up until approximately age 24, the abuse and neglect group had a significantly higher risk of ever being arrested (45.3%) compared to the control group (21.9%). These studies highlight the associations between childhood risk factors (i.e. abuse, neglect, household dysfunction, externalizing behaviors) and a likelihood of adolescent and adult offending. Research from retrospective and prospective studies support the association between adverse childhood experiences, trauma-related symptoms, and offending for adolescent and adult offenders.

Aspects of these contextual factors may vary in their degree of negative impact on the developmental pathways of adult offenders as well as their trauma-related impacts on psychological and behavioral functioning. Few studies have established the relationship between exposure to ACEs and the corresponding effect on psychological functioning (i.e. trauma-related symptomology) of offenders. However, observations of both juvenile and adult offenders indicates children who experience an array of maladaptive contextual (e.g. deficient family environment, poor modeling of coping and interpersonal skills), psychological (e.g. co-occurring mental health issues, deficient coping skills), behavioral (e.g. substance use, interpersonal conflict), and outcome-related factors (e.g. recidivism, poor coping skills, distrust of others) may be at risk for entering into the correction system during adolescence and/or adulthood.

Abuse, Neglect, and Mental Health Characteristics of Adult Offenders

Prior research indicates a substantial relationship between a wide array of ACEs and mental health characteristics of adult offenders. It is important to consider the prevalence and specific impact of ACEs among adult offenders (e.g. physical and/or sexual abuse, emotional abuse, and neglect) and their relationship to various difficulties exhibited by this population (e.g. trauma-related symptomology, interpersonal difficulties, aggression). Previous studies on non-offender populations have provided empirical support for an association of childhood abuse and neglect with PTSD symptoms in adulthood (Grassi-Oliveira & Stein, 2008; Goldberg & Garino, 2005). As studies provide empirical support that adult male offenders are more likely to be exposed to ACEs, they may also be likely to report PTSD symptoms and other mental health difficulties in adulthood. Wolff, Huening, Shi, and Frueh (2014) studied the prevalence of PTSD symptoms and trauma exposure among a random sample (n = 592) of male offenders from a high-security prison. The study found much of the sample reported exposure to childhood

trauma, with over two-thirds of the sample (71%) being exposed to physical abuse, nonconsensual sexual contact, and/or abandonment. Of the sample of male offenders, a substantial number (58%) reported moderate-to-high PTSD symptoms with 28% reporting severe symptoms. Results also revealed that 37% of the sample met criteria for a "serious mental health or other Axis I disorder" (i.e. primary psychotic symptoms, bipolar disorder, or major depressive disorder per DSM IV) showing a strong likelihood of co-morbid trauma symptoms and mental illness.

Other recent studies provide concurrent empirical support for the relationship among ACEs and co-morbid mental health issues among adult offenders. Wolff and Shi (2012) studied a sample of 3,986 male offenders from a state correctional facility in the northeast U.S. They examined (1) the rates of childhood and adult traumatic experiences and (2) the impact of age-of-onset and type of trauma on emotional and behavioral issues among the sample. Of the total sample, 77% of male offenders experienced physical trauma, 45% as a minor (age < 18), 32% as an adult, and 25% both as a minor and as an adult. Bivariate associations (via Hierarchical Linear Model) were found between emotional (i.e. depression, anxiety, and substance abuse symptoms) and behavioral health issues (i.e. interpersonal issues, self-regulation issues, aggression, and hopelessness) and trauma-related characteristics among the sample of incarcerated male offenders. Significant associations were found between each of the behavioral health variables, physical trauma, sexual trauma, and abandonment in both childhood and adulthood. Results indicated that depression, anxiety, and substance use symptoms showed significant associations with childhood physical and sexual trauma and abandonment. Wolff and Shi (2009) assessed the behavioral health, criminal, and victimization histories from a sample of incarcerated male (n = 6,964) adult offenders. Male offenders were initially categorized as either having "no mental

disorder” (n = 5,300) or “reported mental disorder” (male, n = 1568). Offenders were classified as having a “reported mental disorder” if they answered questions indicating they had been previously treated for the following problems: depression, schizophrenia, PTSD, bipolar disorder, or an anxiety disorder. Of males who reported a mental health disorder two-thirds (72%) also reported a history of community victimization (i.e. physical or sexual interpersonal trauma) prior to age 18, as compared to male inmates without a reported mental disorder (54%). Male offenders who reported a mental health disorder also reported substantial rates of community victimization after the age of 17 (44%). Of the male offenders reporting a mental health disorder, 42% also reported a co-occurring addiction disorder. It is worth noting a substantial number of male adult offenders (35%) without a reported mental disorder had a history of community victimization. The study also categorized offenders who reported a mental health problem as having a “serious mental health disorder” (i.e. schizophrenia or bipolar disorder; males, n = 465) or “other mental disorder” (i.e. depression, anxiety, or posttraumatic stress disorder; males, n = 1103). For male offenders with a SMD, a majority reported at least one form of physical trauma prior to the age of 18. Male offenders reporting an “other mental health disorder” indicated similarly high rates of any physical trauma prior to the age of 18. Nearly half of male offenders (43%) with a “serious mental health disorder” and a reported history of physical and/or sexual victimization prior to the age of 18 also reported a co-occurring substance use disorder. As evidenced by increasing empirical support, adult male offenders involved with the corrections system (with or without a mental health disorder) have frequently experienced a history of victimization in childhood and adulthood and report substantial rates of co-occurring mental health issues. However, characteristics of childhood abuse and trauma-related symptomology do not occur independently of the household environment these

individuals experienced during development. Aspects of their household environment are likely to be a contributing factor in the etiology of this population's behavioral and mental health-related difficulties.

Household Dysfunction and Mental Health Characteristics of Adult Offenders

Various aspects of household dysfunction beyond abuse and neglect (i.e. parental substance abuse, household mental illness, domestic violence, incarcerated family member, and parental separation or divorce) are likely to have a detrimental impact on psychological development and functioning in adolescence and adulthood. James and Glaze (2006) collected prevalence data of three background characteristics in their samples of adult offenders: 1) whether the offender had experienced physical or sexual abuse before age 18; 2) whether they grew up with parents who abused alcohol and drugs, and 3) whether they grew up in a household in which a family member was incarcerated before the respondent turned 18 years old. Over a third of State (39%), Federal (33%), and Local jail (37%) inmates with a mental health issue endorsed parental substance abuse while nearly half of mentally ill inmates endorsed having a family member previously incarcerated (i.e. 52% State and Local jail, 44% Federal). Messina et al. (2007), gathered self-report data on ACEs from a sample of male ($n = 427$) offenders placed in the California prison system. ACEs were comprised of nine variables based on self-report of childhood trauma and adverse household events from administration of a self-report measure the Life Stressor Checklist- Revised (LSC-R; Wolfe, Kimerling, Brown, Chrestman., & Levin 1996). The nine ACEs were split among two categories, (1) Abuse and Neglect (e.g. emotional

abuse and neglect, physical neglect, physical and/or sexual abuse) and (2) Household Dysfunction (e.g. family violence, incarcerated family member, parental separation and/or substance use). The authors found 49% of male offenders reported a substantial number of ACEs including parental substance use (54%), family violence (49%), incarcerated family member (42%), parental separation (45%), physical abuse (20%), and being exposed to emotional abuse and neglect (20%). The study included data on the number of ACEs reported by offenders and age-of-onset for characteristics such as first arrest, first incarceration, first alcohol use, and first drug use (presented in Table 3).

Table 3

Offense-related Characteristics by Number of Adverse Childhood Experiences for male offenders (n = 427) (Messina & Grella, 2007)

	No. of adverse childhood experiences						Total (n = 427)
	0 (n = 49)	1 (n = 75)	2 (n = 100)	3 (n = 91)	4 (n = 55)	>5 (n = 57)	
Mean age at first arrest	17.3	16.9	15.6	15.0	15.0	12.9	15.4
Mean age at first incarceration	17.7	17.6	16.0	15.3	15.0	13.4	15.9
Mean age at first alcohol use	14.2	13.1	12.1	11.7	11.1	10.7	12.1
Mean age at first drug use	13.9	14.1	13.2	13.2	12.7	11.8	13.2

Adult male offenders exposed to a greater number of ACEs were shown to have lower age-of-onset for offender related characteristics, with almost half of the sample (48%) having reported exposure to three or more ACEs. Male offenders reporting exposure to five or more ACEs (n = 57) showed the lowest age-of-onset for each of the offender characteristics shown in the table.

Research on juvenile offenders provides further support for the relationship among abuse and

household dysfunction, trauma-related symptomology, and mental health difficulties. These studies further highlight how adult male offenders exposed to a variety of ACEs that include both abuse (e.g. physical and emotional abuse) and household dysfunction (e.g. domestic violence, familial incarceration, and parental separation) may be at a greater risk for earlier age-of-onset for offending, substance use, and possible co-occurring mental health issues.

As previously mentioned, a risk factor associated with mental health issues for incarcerated offenders is the age-of-onset for offending-related characteristics (e.g. age of first arrest, age when first using a substance etc). Research on contextual factors (e.g. family environment, adverse childhood experiences) associated with the traumatic experiences (and trauma-related symptoms) of juvenile offenders may add to our understanding about the relationship among trauma-related and contextual factors (i.e. household dysfunction) and their relationship to adult offending. Baglivio et al. (2014) performed an analysis of ACEs gathered from a sample of juvenile male offenders (n = 48,844) detained by the Florida Department of Juvenile Justice (FDJJ). Of the sample of juvenile males who reported at least one ACE, 89% reported two or more, 71% reported three or more, 48% reported four or more, and 28% reported five or more. ACEs endorsed most by male juveniles were family violence (81%), parental separation or divorce (78%), family member incarcerated (65%), and emotional abuse (31%). Male juveniles also endorsed physical abuse (26%), household substance use (24%), and emotional neglect (31%). Dierkhising et al. (2013) assessed the traumatic experiences, mental health issues, and associated risk factors among juvenile offenders using data from the National

Child Traumatic Stress Network Core Data Set (NCTSN-CDS). The study consisted of a total sample of 658 (male, n = 303; female, n = 355) justice-involved adolescent offenders aged 13-18 years. Participants were administered: (1) the UCLA-PTSD Reaction-Index, (2) the Trauma History Profile, and (3) the Child Behavior Checklist. Among the sample of juvenile male offenders, results indicated a wide array of traumatic experiences with 16% endorsing sexual maltreatment/abuse, 39% physical maltreatment/abuse, 27% physical assault, 46% emotional abuse/psychological maltreatment, 51% domestic violence, 59% traumatic loss/bereavement, 40% community violence, and 23% school violence. The study found that 62% of the total sample of juvenile offenders experienced trauma during the first five years of their childhood, with 23% reporting current symptoms in the clinical range for PTSD symptom clusters (per DSM-IV criteria). Much of the sample were found to be within the clinical range of specific PTSD clusters. Results indicated that a substantial proportion reached the clinical range for externalizing problems (66%) and/or internalizing problems (46%). For externalizing problems, juvenile male offenders endorsed rule-breaking (37%) and aggressive behavior (34%) most often. Internalizing symptoms were also endorsed by juvenile males, (i.e. depressive symptoms/thought problems 22%; anxious/depressed symptoms 21%; somatic complaints 20%). These results suggest many male juvenile offenders experience a wide array of trauma-related and contextual risk factors (e.g. family history, family environment, exposure to physical/sexual abuse, household substance use) during their development, paralleling research on these factors for adult offenders. Adolescent and adult offenders share trauma-related and contextual risk

factors that are associated with the corresponding deficits exhibited by these populations. These parallels further support the consideration of a deficient and traumatic family context and its role in the etiology of trauma-related symptoms, psychological and behavioral deficits of adult offenders.

Traumatic and Deficient Family Environments

Both adult and juvenile offenders experience a wide array of developmental adversity (e.g. ACEs, household dysfunction, socioeconomic status, traumatic experiences, attachment difficulties) that impact their functioning and increase their risk of reoffending. Research has also indicated a substantial number of offenders are likely to return to incarceration within a few years and be unlikely to receive mental health treatment while incarcerated (James & Glaze, 2006; James & Glaze, 2014b). Based on previous research, adult offenders frequently experience traumatic childhood abuse and a history of household dysfunction. Household dysfunction can also perpetuate the impact of trauma-related symptoms and deficits in psychological and behavioral functioning into adulthood (Wolff et al., 2014; Reavis et al., 2013). Utilizing a model that can incorporate these factors can provide a conceptual map for the etiology of psychological and behavioral difficulties, trauma-related symptoms, and corresponding deficits and impairments male and female offenders experience in adulthood. Gold (2000) developed a contextual trauma model for conceptualization and treatment of individuals who are survivors of prolonged childhood abuse (PCA). He proposed that individuals coming from backgrounds that consisted of both a deficient family context (e.g. abusive home environment, modeling of poor

coping and interpersonal skills) and persistent experiences of neglect and emotional abuse, are likely to have substantially impaired adjustments in adulthood. These impairments are associated with maladaptive coping skills, deficient interpersonal skills, and limited functional capacities (e.g. self-care, maintaining employment) (Gold). The etiology of these functional impairments and aforementioned difficulties may lead to the same maladaptive coping skills that result in some of these individuals being incarcerated. Gold's model incorporates a deficient family environment in childhood (e.g. deficient and/or defective social learning) that leads to gaps and warps in the development of an individual's emotional, interpersonal, and instrumental capacities. The model describes these impaired capacities as limiting opportunities for remedial learning (e.g. to develop adaptive coping and interpersonal skills, improved emotion communication), resulting in continued impairment into adulthood. These difficulties are evidenced by research associated with the traumatic experiences and trauma-related symptoms reported by juvenile and adult offenders.

Gold's (2000) contextual trauma model also emphasizes the role of attachment style as a relevant factor to conceptualizing the impacts of PCA and household dysfunction on adult functioning. The model describes how the combined impact of PCA and growing up in a deficient family environment leads to "disturbed and disrupted" attachment to parental figures resulting in the absence of a secure attachment relationship. Prior research indicates a substantial number of adult male offenders grow up under unfavorable conditions for developing capacities needed for adequate behavioral, interpersonal, and psychological functioning. Gold explains that

this combination of insecure attachment, PCA, and household dysfunction is responsible for impairments in domains of functioning and “inadequate transmission of essential living skills,” (e.g. adequate self-care, appropriate social skills, maintaining employment). Both adult and juvenile male offenders exposed to childhood abuse, neglect, and household dysfunction are more likely to exhibit trauma-related symptoms, difficulties with interpersonal and psychological functioning, and offender related characteristics. The contextual trauma model prioritizes these attachment-related difficulties for implications regarding conceptualizations of difficulties, treatment, and establishing a therapeutic and collaborative relationship as the foundation of treatment. Attachment-style is likely to have important implications regarding adult male offenders due to the substantial risk factors they are likely to be exposed to during development.

Role of Attachment

According to Bowlby’s (2008) attachment theory, children develop internal working models of self and relationships with others based on their relationship with their primary caregiver beginning in infancy (Benoit, 2004). The quality of the attachment experience for the infant is established in the primary caregiver’s ability to maintain a consistent degree of attunement and responsiveness for the infant that promotes a sense of safety and security during early childhood. The quality of attachment experiences promotes the development of the psychological (i.e. cognitive and affective capacities) and interpersonal patterns (i.e. internal working models of self and other) that shape the beliefs, behaviors, and interactions during childhood and through adulthood (Benoit). These attachment-based internal working models (i.e.

of self and others) develop through childhood into a persistent pattern of self-concept and relating to others in adulthood (Feeney, Noller, & Hanrahan, 1994).

Bartholomew and Horowitz (1991) developed a dimensional model of attachment utilizing multiple methods of assessment (i.e., self-report, trained evaluators, and the accounts of romantic partners and peers) with a large community-based sample. As shown in Figure 1, Bartholomew and Horowitz proposed internal working models of the self and others as dichotomized, with positive or negative frames of reference regarding the self and others. They proposed four combinations of this attachment/internal working model: secure (positive model of self and other), preoccupied (negative self and positive other), fearful (negative self and other), and dismissing (positive self and negative other).

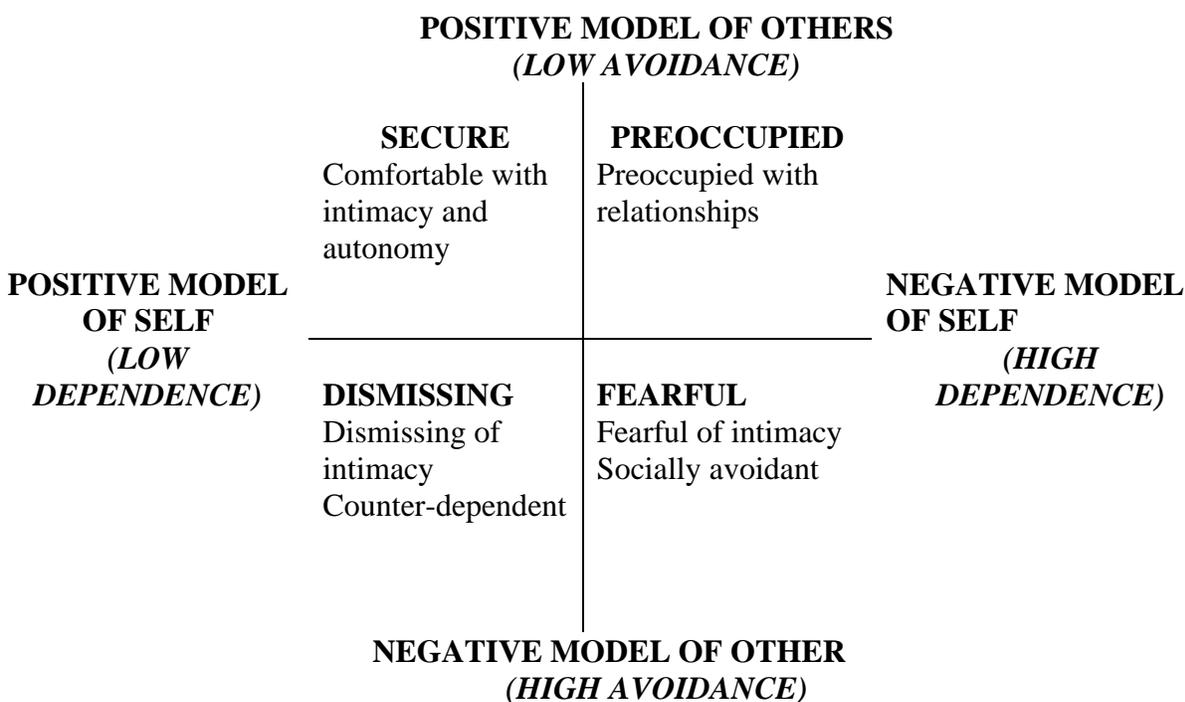


Figure 1. Dimensional model of adult attachment (Bartholomew & Horowitz, 1991)

Secure attachment (positive model of self and others) is promoted when caregivers consistently respond to distress in sensitive and caring ways (e.g. responding to an infant promptly and reassuring them that they are safe). Individuals with a secure attachment style are

comfortable with both autonomy and intimacy and described as having “a sense of worthiness (lovability) plus an expectation that other people are generally accepting and responsive,” (Bartholomew & Horowitz, p. 227, 1991). They are more likely to exhibit adaptive self-esteem and effectively utilize their coping and interpersonal resources to address difficulties.

Preoccupied attachment (negative model of self and positive model of others) relates to a sense of unworthiness (e.g. being unlovable) in contrast to a positive evaluation of others, and qualities associated with striving for self-acceptance by gaining the acceptance of valued others.

Individuals with a preoccupied style of attachment have difficulty with developing self-confidence and managing distress due to anxiety and fear focused on dependency on others (e.g. anxiety about abandonment experienced by others as demanding). A fearful-avoidant attachment (negative model of self and others) consists of feelings of unworthiness and an expectation that others will be untrustworthy and rejecting. This style of attachment lends itself to avoidance of close involvement with others to protect against anticipated rejection by others (i.e. due to self-doubt and fear of rejection). A dismissive-avoidant attachment style (positive model of self, negative model of others) combines a self-concept of worthiness and a negative disposition toward other people to suppress their distress and needs for closeness from others. Individuals with this attachment style are described as avoidant of close relationships in order to protect themselves from disappointment and preserve a sense of autonomy (Bartholomew & Horowitz).

Attachment and Adverse Childhood Experiences

Research supports that ACEs (i.e. traumatic childhood abuses and deficient family environment) can lead to disruptions in the development of secure attachment with caregivers and result in the development of insecure attachment styles. Baer and Martinez (2006) conducted a meta-analysis on 8 studies (n = 791) examining the relationship between child maltreatment

(i.e. physical and emotional abuse, neglect, and failure-to-thrive) and insecure attachment style. Each of the studies in the analysis reported a significant effect size (ranging from $d = 3.4$ to 21.8 , $p < .001$) for the relationship between maltreatment and insecure attachment. The study found maltreated infants were significantly more likely to have insecure attachment as compared to controls (Baer & Martinez). There were major limitations in the meta-analysis (i.e. heterogeneity among sample inclusion criteria, procedural variation among studies, small sample size) but results suggest further investigation into the role of childhood maltreatment and its impact on attachment style.

Previous research on ACEs and incarcerated offenders indicates they are more likely to experience household dysfunction and traumatic experiences during childhood (Messina, Grella, Burdon, & Prendergast, 2007; Wolff & Shi, 2012; Wolf et al. 2014). Few studies have researched the relationships between ACEs and attachment style for adult offenders (Levinson & Fonagy, 2004; Sirkia, 2000). Ratip (2013) reviewed nine studies on the relationship between attachment style and offenders (i.e. sexual and non-sexual offenders) and found insecure attachment to be over-represented in offending populations (i.e. ranging from 64% to 97% across studies). Research has indicated an over-representation of ACEs, trauma symptomology, and insecure attachment style in offender populations. Prior studies have also established the relationship among ACEs and trauma-symptomology among adult offenders with- and without mental health issues. However, there is a strong likelihood that attachment style is a contributing factor to the relationship between ACEs and trauma-related symptomology for adult offenders. Levinson and Fonagy (2004) studied the likelihood of insecure attachment styles (i.e. dismissive attachment) among a group of adult male offenders as compared to a sample of male individuals with a personality disorder and normal male controls. The offender and personality disorder

samples were controlled for the presence of a psychiatric condition to further understand and differentiate the relationship of insecure attachment style among offender characteristics. The authors utilized the Adult Attachment Interview (AAI) to evaluate childhood trauma and attachment patterns among the samples. The study found that offenders experienced more abuse and neglect (64% physical abuse, 18% sexual abuse, 18% neither) compared to both the personality disorder (36%, 5%, and 59% respectively) and normal control group (100% neither) when controlling for psychiatric conditions. They also found the offender group was more likely to exhibit either a dismissive or disorganized (i.e. a combination of dismissive and preoccupied) attachment style as compared to the personality disorder and normal control group. The authors suggested the outcome of the study indicates offender's development is characteristic of both childhood abuse and a dismissive interpersonal style toward attachment-related experiences.

Sirkia (2000) studied the relationship of childhood maltreatment experiences and adult attachment style among adult male offenders and normal male controls. The study consisted of a sample of adult male offenders ($n = 40$) from a medium-security federal prison and a sample of male undergraduate students ($n = 23$) from a university. The author gathered experiences related to childhood maltreatment and other familial experiences using the Family Attachment Interview (FAI; Bartholomew & Horowitz, 1991) and attachment styles were analyzed by the Peer Attachment Interview (PAI; Bartholomew & Horowitz, 1991) and coded using the four-category framework of attachment developed by Bartholomew (1990). Per their responses on the PAI, the offender participants' attachment styles were rated as secure (2.5%), fearful (40%), preoccupied (30%), and dismissing (27.5%). In comparison, the undergraduate sample attachment styles were rated as secure (30%), fearful (40%), preoccupied (17%), and dismissing (13%). Results of a chi-square analysis indicated a significantly higher proportion of the offender group, as

compared to controls, experienced five out of six childhood maltreatment characteristics (i.e. physical discipline $\chi^2 = 9.47$, $p = .002$; physical abuse $\chi^2 = 18.18$, $p < .000$; sexual abuse $\chi^2 = 14.90$, $p < .000$; psychological abuse $\chi^2 = 13.27$, $p < .000$; and physical neglect $\chi^2 = 9.42$, $p = .002$). The study provides further support for the relationship between insecure attachment styles and childhood abuse characteristics among adult male offenders. Male offenders are more likely than the general population to experience traumatic childhood experiences and develop in a deficient family environment that leads to the likelihood of developing insecure attachment. The combination of deficient family environment and insecure attachment may result in a more severe impact on adjustment from childhood traumatic experiences (e.g. emotion dysregulation, distrust of others, aggressive behavior). This pattern can lead to maladjustment (e.g. mental health issues, incarceration) and reliance on maladaptive coping (e.g. substance use, violent behavior) in adulthood. There is currently a need for further research to evaluate the relationship of ACEs, attachment style, and PTSD symptoms in offending populations (e.g. with- or without a mental disorder) and the possible implications they may for addressing the mental health needs of adult offenders.

Integrative Conclusions

To better serve the mental health needs of adult male offenders, possibly reduce their likelihood of re-offending, and improve the possibility of better outcomes, it is necessary to better understand: 1) the underlying risk factors (i.e. adverse childhood experiences; trauma-related and contextual) that predispose adult offenders to the above-mentioned deficits in functioning and related mental health issues, 2) the predominant symptoms and disorders present among incarcerated offenders, and 3) the impact of these symptoms and disorders on their behavioral and psychological functioning. In doing so, it may be possible to provide more

effective mental health services for adult offenders and improve their outcomes post-incarceration. Research shows that a substantial number of adult male offenders are exposed to two domains of ACEs that impair their psychological development and adjustment: 1) traumatic experiences during development and throughout the lifespan, and 2) having been reared in a chaotic, unsupportive, and otherwise deficient family environment. Male offenders (with and without a reported mental health problem) frequently experience deficient family environments and traumatic experiences in childhood and adulthood (Wolff & Shi, 2009; Wolff, N. et al., 2014). Developing in a deficient family environment can be a substantial risk factor for difficulties with emotion regulation, coping, and interpersonal skills, as well as criminality (Wolff and Shi, 2012; Baglivio, et al., 2014; English, Widom, & Brandford, 2002).

Current literature has established that offenders are more likely to have difficulties with psychological, behavioral, and interpersonal functioning, and have higher rates of mental health problems than the general population (Dierkhising et al., 2013; Messina, Grella, Burdon, & Prendergast, 2007; Wolff & Shi, 2012). Few studies have established a relationship between adverse childhood experiences, trauma symptomology, and criminality among incarcerated offenders (Reavis et al., 2013; Wolff & Shi, 2012; Wolff et al., 2014). Moreover, prior research has established a positive relationship between ACEs and insecure attachment style in adult sexual offenders (Grady, Levinson, & Bolder, 2017), but has not been expanded to a general sample of incarcerated offenders and/or incorporated the impact of trauma symptoms on the relationship among these factors. Research limited to non-offender samples has shown a strong association between attachment style and severity of trauma symptoms (Muller, Sicoli, & Lemieux, 2000; Woodhouse, Ayers, & Field, 2015). This research suggests that attachment style is likely to have a mediating effect on the relationship between ACEs and trauma-related

symptomology for incarcerated male offenders, such that insecure attachment is likely to strengthen the relationship between ACEs and trauma symptoms. For example, holding the total number of ACEs constant, inmates who report higher insecure attachment scores may be more likely to show more severe trauma-related symptomology, as compared to inmates with lower insecure attachment scores. There is a strong likelihood that the relationship among ACEs, attachment style, and trauma-related symptoms is substantial for offenders whether or not having also been identified as having a mental health disorder.

Contribution to the Field

Previous studies have gathered data on the ACEs and presence of PTSD in samples of adult male offenders, however there is currently a need in the literature to study the likelihood of a direct relationship among ACEs, attachment style, and the prevalence and severity of PTSD (or trauma related symptoms) in a sample of adult male offenders with or without a reported mental health disorder. There is limited literature on the attachment style of adult male offenders (Sirki, 2000) and there is a substantial opportunity to expand the current literature on the relationship between ACEs, attachment style, and trauma-related symptoms for adult male offenders.

Research in the past few decades has focused on many of the risk factors and pathways associated with juvenile and adult offending. As there continues to be a growing population of incarcerated offenders with high rates of recidivism, a main goal for improving the outcomes for adult male offenders post-release is the capacity to successfully re-integrate into society and engage in adaptive psychological, behavioral, and interpersonal functioning. Studies have shown that a substantial proportion of adult male offenders experience traumatization and household disruption during childhood and adolescent development. These risk factors can result in substantial impairments in the capacity to develop a secure attachment and adaptive internal

working models of self and others, resulting in a detrimental and long-standing impact on an adult offender's capacity to successfully function in society.

The aim of this study is to clarify the relationship between the array of trauma-related and contextual factors that previous research has shown to be prevalent among adult offenders. This study will explore the relationship among ACEs (i.e. related to traumatic experiences and deficient family environment), attachment style (e.g. secure and insecure types of attachment), and prevalence and severity of PTSD symptoms (e.g. reactivity, avoidance, hypervigilance, etc.) in a sample of adult male offenders. The proposed study seeks to contribute to and expand upon the current literature on the association among adverse childhood experiences and attachment style on the presence and severity of PTSD and trauma-related symptoms among incarcerated male offenders. The findings from this study may contribute to a foundation for: (1) incorporating research on developmental and trauma-related risk factors into a model for conceptualizing emotional, psychological, and behavioral deficits found in this population; and (2) integrating awareness of these developmental and contextual factors into a model (e.g. mediation model) to provide a conceptual map for the etiology and treatment of forms of psychological impairment among adult male offenders that are likely to increase their risk for criminal behavior and recidivism.

Hypotheses and Proposed Analyses

Based on evidence from existing research, five a priori hypotheses were formed for this study:

Hypothesis 1: Number of ACEs will be positively correlated to PTSD symptoms

Hypothesis 2: Secure attachment (i.e. confidence) will be negatively correlated with severity of

PTSD symptoms.

Hypothesis 3: Insecure attachment (i.e. preoccupation with relationships, need for approval, discomfort with closeness, and relationships as secondary) will be positively correlated to PTSD symptoms.

Hypothesis 4: Number of ACEs will be positively correlated with insecure attachment scales (i.e. preoccupation with relationships, need for approval, discomfort with closeness) and negatively correlated with secure attachment (i.e. confidence)

Hypothesis 5: Insecure attachment scales (i.e. preoccupation with relationships, need for approval, relationships as secondary, discomfort with closeness) will mediate the relationship between number of adverse childhood experiences and severity of PTSD symptoms.

Based on a sample of adult male offenders the purpose of this study is to explore the prevalence and relationship of: 1) traumatic experiences and deficient aspects of family environment (per participants ACEs responses), 2) PTSD and trauma-related symptoms (i.e. based on PCL-5 scores and ACEs responses), 3) attachment style classifications of the sample (e.g. insecure forms with negative model of self and other), 4) correlation among participants ACEs and ASQ-40 scores to assess the relationship between frequency/type of ACEs and attachment style scores and classifications, 5) correlation among participants' PCL-5 scores (i.e. severity of PTSD, trauma-related symptoms) and attachment scale scores, and 6) the possible

mediating effect of attachment style on the relationship between ACEs scores and severity of PTSD and trauma-related symptoms via PCL-5 scores.

Chapter 2

Method

Procedure

Participants were recruited from a court-ordered post-arrest diversion program. Participants are allowed entry into the program after meeting prerequisites that include a history of non-violent, 3rd-degree felony charges, and a history of mental illness, specifically concerning serious, long-term mental illnesses. For the purpose of this study, male participants were recruited prior to the beginning of a weekly psychoeducational group-therapy class offered at the diversion program. Before the start of the psychoeducational group, participants were informed of the purpose of the study. Male participants who elected to participate in the study were provided a survey packet consisting of consent forms and IRB-approved documentation, a brief demographics questionnaire, and the following assessments: ACEs, ASQ-40, and PCL-5. Participants completed the packets in 15-20 minutes on average. Participants were informed that results from the surveys were for research purposes only and would not contribute to psychological assessment or legal capacity per the diversion program. Participants were not provided with any form of compensation for the study.

Participants

Participants ranged in age from 19 to 68 years of age ($M = 36.39$, $SD = 13.53$). The sample consisted of only male participants ($N = 59$) and was predominantly composed by individuals who identified as African American (28.3%), with the remaining portion of individuals identifying as Multi-racial (18.3%), Hispanic (16.7%), Caucasian (13.3%), Black

(Not of U.S. origin; 6.7%), and Other (16.8%). Seventy-three percent of the sample reported having a previous diagnosis for a mental health disorder by a medical professional and/or mental health professional and 88% of the sample reported at least one arrest prior to the arrest that lead to their participation in the diversion program. On the following page, Table 4 provides demographic characteristics and Table 5 includes offender-related characteristics from the sample.

Table 4

Educational Attainment, Relationship status, and Household Income

Variable	Frequency	Percentage
Educational Attainment		
Less than 9 th grade	8	13.7
9 th grade	3	5.0
10 th or 11 th grade	9	15.0
High school diploma/GED	18	30.0
Some college	10	16.7
Associates degree/Vocational training	4	6.7
Bachelor's degree	5	8.3
Some graduate	1	1.7
Doctoral degree	1	1.7
Missing Data	1	1.7
Relationship Status		
Single	36	56.7
In a Relationship	6	10.0
Cohabiting	1	1.7
Engaged	2	3.3
Married	5	8.3
Separated	1	1.7
Divorced	8	13.3
Widowed	1	1.7
Missing Data	2	3.3
Household Income		
\$9,999 and under	37	61.7
\$10,000 to \$19,999	10	16.7
\$20,000 to 29,999	6	10.0
\$30,000 to 39,999	3	5.0
\$40,000 to 49,999	1	1.7
\$75,000 or more	2	3.3
Missing Data	1	1.7

Table 5

Number of arrests, Prior arrest for violent or sexual offense, Previously received any mental health treatment

Variable	Frequency	Percentage
Number of times arrested		
0	2	3.3
1	16	26.7
2	14	23.3
3 or more times	28	46.7
Prior arrest for a violent offense		
No	51	85.0
Yes	5	8.3
Missing data	4	6.7
Prior arrest for a sexual offense		
No	56	93.3
Yes	2	3.3
Missing data	2	3.3
Previously received any mental health treatment (i.e. medication prescribed for a psychiatric condition, treatment from a mental health provider		
No	16	26.7
Yes	40	66.7
Missing data	4	6.7

Measures

Demographics. Demographic factors such as age, ethnicity, educational status, and marital status were included in analyses as covariates, however they were eliminated from analysis due to nonsignificant correlations with the outcome measures and the reduced sample size that resulted from non-response.

Adverse Childhood Experiences Questionnaire (ACES; Felitti et al., 1998). The ACEs Questionnaire consists of 10 items. Each item assesses for whether the respondent encountered a particular traumatic (i.e. abuse by category) or problematic household experience (i.e. household dysfunction by category) before the age of 18. The items for the abuse category are associated: 1) psychological abuse, 2) physical abuse, 3) sexual abuse, 4) physical neglect, and 5) emotional neglect. The items for the household dysfunction category are: 1) household substance use, 2) household mental illness, 3) violence towards maternal caregiver, 4) criminal behavior in household, and 5) incarcerated family member. A large body of research indicates that the ACEs are strongly related to the development and prevalence of a wide range of mental health problems, health risk behaviors, and medical disorders in adulthood (Felitti et al. 1998).

Attachment Style Questionnaire (ASQ-40; Feeney, Noller, and Hanrahan, 1994). The ASQ is a 40-item self-report questionnaire that requires participants to rate 40 attachment-related items on a six-point Likert scale in terms of level of agreement (1 = totally disagree; 2 = strongly disagree; 3 = slightly agree; 4 = slightly agree; 5 = strongly agree; 6 = totally agree). The ASQ incorporates previous research by attachment theorists (e.g., Bowlby, Bartholomew, Horowitz) and measures attachment across five dimensions: confidence (secure attachment; positive self, positive other), preoccupation with relationships (anxious-preoccupied; negative self, positive others), need for approval (fearful-preoccupied; negative self, positive or negative other), discomfort with closeness (fearful-avoidant; negative self, negative other), and relationships as secondary (dismissive-avoidant; positive self, negative others) (Feeney et al., 1994). The scales are treated as continuous with no official cut-off scores indicating a specific type of attachment style. The five scales have shown adequate internal consistency, with Cronbach's alpha coefficients ranging from .76 to .84 and 10-week retest reliability coefficients

of the scales ranging from .67 to .78 (Feeney et al., 1994). Fossati and colleagues (2003) standardized the ASQ on Italian clinical ($N = 605$) and community ($N = 487$) samples. This normative data, which supported the ASQ five-factor structure, is illustrated in Table 7.

Table 6

Normative Means and Standard Deviations for the Attachment Style Questionnaire (Fossati et al., 2003)

Attachment Scale	Community Sample ($n = 605$)	Psychiatric Sample ($n = 487$)
Confidence	32.25 (5.74)	27.43 (6.58)
Preoccupation with Relationships	28.81 (6.08)	33.83 (6.63)
Discomfort with Closeness	37.95 (7.12)	39.81 (7.95)
Need for Approval	20.82 (5.99)	25.95 (7.16)
Relationships as Secondary	16.71 (5.96)	17.02 (5.62)

PTSD Checklist for DSM-5 (PCL-5; Weathers, Litz, Keane, Palmieri, Marx, Schnurr and, 2013). The PCL-5 is a self-report questionnaire with 20-items that corresponds to the 20 PTSD symptoms listed in the DSM-5. The PCL-5 is a revised version of the PCL, which corresponded to the three symptom clusters associated with the DSM-IV criteria for PTSD. The PCL-5 was revised to accommodate the current DSM-5's four-factor conceptualization of PTSD, i.e. re-experiencing, avoidance, negative alteration in cognition and mood, and increased arousal and reactivity. Each self-report item is scored 0-4 on a 5-point Likert scale with the same possible responses for each item (i.e. 0 = "Not at all," 1 = "A little bit," Moderately," "Quite a bit," and "Extremely"). The items can be interpreted as a total score ranging from 0-80 and include subscale scores for each symptom cluster associated with PTSD (i.e. Cluster B = Re-experiencing, Cluster C = Avoidance, Cluster D = Negative cognitions and mood, and Cluster E

= Increased arousal and activity). Blevins and colleagues (2015) reported that in a sample of trauma-exposed college students PCL-5 scores demonstrated strong internal consistency ($\alpha = .94$), test-retest reliability ($r = .82$), and convergent ($r_s = .74$ to $.85$) and discriminant ($r_s = .31$ to $.60$) validity.

Reliability Statistics. The internal consistency of each instrument was evaluated using Cronbach's alpha. The ACEs ($\alpha = .854$, $n = 10$), PCL-5 ($\alpha = .959$, $n = 20$), and the ASQ ($\alpha = .836$; $n = 40$) overall showed good reliability. Each of the subscales for the PCL-5 were significantly correlated and are presented on the following page in table 8.

Table 7

Correlations among PCL-5 subscales (N = 59)

	PCL-5	Re-experiencing	Avoidance	Negative cognitions/ mood	Arousal/reactivity
PCL-5	1				
Re-experiencing	.926*	1			
Avoidance	.834*	.793*	1		
Negative cognitions and mood	.941*	.786*	.763*	1	
Arousal/ reactivity	.927*	.810*	.651*	.834*	1

* $p < .001$

There were varying degrees of reliability within the ASQ scales. Confidence ($\alpha = .719$; $n = 8$), preoccupation with relationships ($\alpha = .773$; $n = 8$), relationships as secondary ($\alpha = .726$; $n = 7$), and discomfort with closeness ($\alpha = .743$; $n = 10$) showed acceptable reliability whereas need for approval ($\alpha = .677$; $n = 7$) showed questionable reliability.

Chapter 3

Results

Assumptions Required by Statistical Tests

Prior to the analyses, the assumptions of normality, linearity, homoscedasticity, and absence of multicollinearity were assessed. According to the Shapiro-Wilk test, the assumption of normality was met for three of the four ASQ subscales: confidence ($p = .797$), discomfort with closeness ($p = .235$), and preoccupation with others ($p = .895$). The PCL-5, ACEs, and ASQ scales for relationships as secondary and need for approval did not meet the assumption for normality per the Shapiro-Wilk test ($p < .05$). The examination of scatterplots revealed linearity, and a series of Levene's tests showed that homoscedasticity could be assumed. Variance Inflation Factors (VIFs) ranged from 1.00 to 2.26, indicating that the assumption of absence of multicollinearity was met.

Descriptive Statistics

Analyses were conducted in several stages. First, an analysis of descriptive statistics was done to assess participants scores on the ACEs, PCL-5, and ASQ. Fifty-one percent of the sample ($n = 30$, $M = 3.3$, $SD = 3.1$) reported three or more ACEs. Using the PCL-5 recommended cut-off score of 33, 49% of participants in the present study had clinically significant symptoms of PTSD. Table 9 contains the descriptive statistics for each of the scales for the ASQ as compared to data from Fossati et. al. (2003). Analyses also revealed significant differences in means scores among attachment scales for each sample.

Table 8

Current Sample and Normative Means, Standard Deviations for the Attachment Style Questionnaire

ASQ Attachment Scales	Current Sample (<i>n</i> = 59)	Community Sample (<i>n</i> = 605)	Psychiatric Sample (<i>n</i> = 487)
Confidence	30.76 (7.91) ^a	32.25 (5.74)	27.43 (6.58) ^a
Preoccupation with Relationships	25.37 (8.58) ^{bc}	28.81 (6.08) ^b	33.83 (6.63) ^c
Discomfort with Closeness	38.51 (9.67)	37.95 (7.12)	39.81 (7.95)
Need for Approval	22.07 (7.37) ^d	20.82 (5.99)	25.95 (7.16) ^d
Relationships as Secondary	19.90 (7.11) ^e	16.71 (5.96) ^e	17.02 (5.62) ^e

Note. Independent samples analysis used to test for significance difference among groups based on mean values on attachment scales.

Means that share a subscript were significantly different, $p < .05$.

Hypotheses Testing

Correlational Analyses

As predicted by hypothesis one, Pearson correlational analyses showed that the total number of ACEs were positively correlated with PCL-5 scores ($r = .46, p < .01$). As predicted by hypothesis two, confidence (secure attachment) was negatively correlated with PCL-5 scores ($r = -.37, p < .01$). Regarding hypothesis three, of the insecure attachment scales, discomfort with closeness was positively correlated with PCL-5 scores ($r = .37, p < .01$). Per hypothesis four, of the insecure attachment scales, only discomfort with closeness was positively correlated with total number of ACEs ($r = .31, p < .05$). The correlations among ACEs, PCL-5 scores, and the ASQ attachment scales are presented on the following page in Table 10.

Table 9

Correlations among ACEs, PCL-5 scores, and ASQ Scales (N = 59)

	ACEs	PCL-5	Confidence	Preoccupation with Others	Discomfort with Closeness	Relationships as Secondary	Need for Approval
ACEs	1						
PCL-5	.463**	1					
Confidence	-.459**	-.373**	1				
Preoccupation with others	0.171	0.202	0.037	1			
Discomfort with Closeness	.306*	.373**	-0.199	.544**	1		
Relationships as Secondary	-0.050	0.147	0.158	.259*	.435**	1	
Need for Approval	0.113	0.082	0.159	.564**	0.214	0.234	1

* $p < .05$, ** $p < .01$

Mediational Analyses

Per hypothesis five, indirect effect analyses were conducted to assess the mediational paths of specific insecure attachment styles in the relationship between ACEs and PCL-5 scores. These analyses were conducted utilizing the approach by Preacher and Hayes (2004), which does not require the existence of a significant relationship between the predictor (i.e. ACEs) and dependent variable (PCL-5 total score) as a condition of mediation. Preacher and Hayes (2004) propose that two conditions should be met: 1) the pathway among the predictor and mediator, as well as the mediator and outcome variable must be significant, and 2) the indirect effect of this pathway must be statistically significant in the proposed direction of mediation. For this study, the 95% confidence interval of the indirect effects was obtained with 10,000 bootstrap resamples. Per Preacher and Hayes, confidence intervals excluding zero indicate a statistically significant indirect effect (i.e. mediation), with confidence intervals including zero indicating the indirect effect as non-significant. The fifth hypothesis predicted that forms of insecure attachment would mediate the relationship between ACEs and PCL-5 scores. Based on previous analysis of correlations among ACEs, insecure attachment styles, and PCL-5 scores, discomfort with closeness was tested as a mediator due to having a statistically significant correlation among the predictor and the outcome variable.

Discomfort with closeness. A multiple regression analysis was conducted to assess both the a-path (i.e. ACEs as a predictor of discomfort with closeness) and the b-path (i.e. discomfort with closeness as a predictor of PCL-5 scores) of a model where discomfort with closeness would mediate the relationship between ACEs and PCL-5 scores. Regression analyses indicated that ACEs significantly predicted discomfort with closeness ($B = .969, t(57) = 2.43, p < .05$) and discomfort with closeness significantly predicted PCL-5 scores ($B = .819, t(57) = 3.04, p < .01$).

Regression analyses indicated the a-path and b-path were significant and a mediation analysis was tested using the bootstrapping method with bias-corrected and accelerated confidence estimates (MacKinnon et al., 2004; Preacher & Hayes, 2004). The proposed mediator, discomfort with closeness, was a significant predictor of PCL-5 scores ($B = .56$, $t(57) = 2.14$, $p < .05$) and ACEs was a significant predictor of discomfort with closeness ($B = .97$, $t(57) = 2.43$, $p < .05$). The mean estimate of the indirect effect in the discomfort with closeness model was .54 and the 95% CI [.01, 1.21] indicated there was significant mediation because it did not contain zero. As shown in Figure 6, the direct effect of ACEs on PCL-5 scores remained significant ($B = 2.67$, $t(57) = 3.21$, $p < .01$) when discomfort with closeness was introduced as a mediator. The analysis supported hypothesis five, insecure attachment (i.e. discomfort with closeness) would mediate the relationship between ACEs and PCL-5.

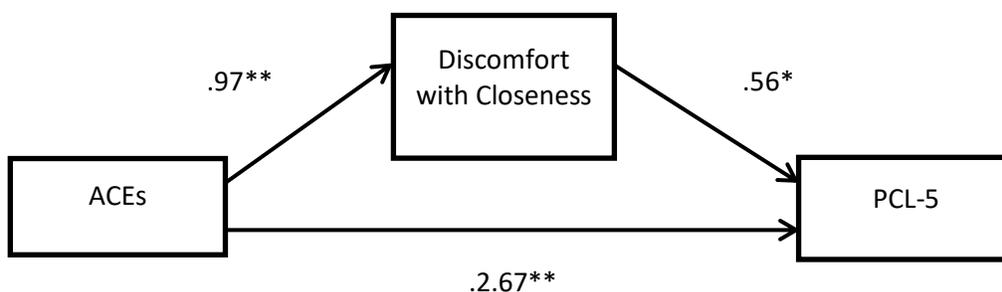


Figure 6. Indirect effects of ACEs on PTSD through discomfort with closeness

Note: unstandardized coefficients were used

* $p < .05$, ** $p < .01$

Chapter 4

Discussion

The goal of the present study was to examine the relationship among ACEs, attachment style, and PTSD symptoms among a sample of adult male offenders participating in a court-ordered diversion program. A priori hypotheses suggested that: 1) ACEs would be negatively correlated with secure attachment style; 2) ACEs would be positively correlated with insecure attachment style; 3) PTSD symptoms would be positively correlated with insecure attachment scales; 4) PTSD symptoms would be negatively correlated with secure attachment, and 5) insecure attachment style would mediate the relationship between ACEs and PTSD symptoms.

Prevalence

The overall prevalence of ACEs and PTSD symptoms found in the sample suggests that adverse childhood experiences of abuse and household dysfunction are associated with PTSD in adulthood for male offenders. In the current study, 51% of the sample reported three or more ACEs, which is comparable to rates previously found in samples of adult male offenders (Reavis, Looman, Franco & Rojas, 2013; Messina & Grella, 2007). On the PCL-5, 49% of the sample met the suggested cut off score of 33 indicating the presence of clinically significant symptoms of PTSD. This prevalence is comparable to the rate (59%) found by Wolff and colleagues among incarcerated adult male offenders (2014). Attachment scores, as shown in Table 8, showed statistically significant differences among the mean scores for the current sample as compared to the community and psychiatric samples from the study by Felitti, et al. (1998). An in-depth review of the current literature did not yield studies associated with ASQ scores among a sample of high-risk or current adult male offenders to compare with this sample.

Correlational Analyses

As initially predicted, ACEs were positively correlated with PTSD symptoms (hypothesis one) and insecure attachment style (i.e. discomfort with closeness; hypothesis two). As also predicted, insecure attachment (i.e. discomfort with closeness) was positively correlated with PTSD symptoms (hypothesis three) while secure attachment (i.e. confidence) was negatively correlated with PTSD symptoms (hypothesis four). Previous studies have established the prevalence of both ACEs and PTSD symptoms in samples of adult male offenders. However, there is a deficit in the current literature on the relationship attachment style shares with these factors. Additionally, previous research highlights how adult male offenders are at greater risk of being exposed to ACEs, leading to greater susceptibility to PTSD symptoms in adulthood. Being at greater risk of abuse, neglect, and household dysfunction can also lead to greater susceptibility to disruptions in the development of a more secure attachment style promoting positive internal working models of self and other. Still few studies have analyzed the relationship among ACEs and attachment style in adult male offenders, necessitating further study of the causal relationship among ACEs and insecure attachment style.

As indicated by Table 11, ACEs shared a moderate correlation with PTSD symptoms ($r = .46$) and the ASQ scales for confidence ($r = -.46$) and discomfort with closeness ($r = .31$). There were no significant correlations found among ACEs and PTSD symptoms with the other ASQ scales (i.e. preoccupation with others, need for approval, and relationships as secondary). These findings suggest the negative impact of ACEs may be reflected in both the insecure (i.e. discomfort with closeness) and secure (i.e. confidence) attachment scales. Prior research has shown that survivors of childhood abuse are at greater risk of reporting an insecure attachment style and PTSD symptoms in adulthood (Muller, Sicoli, & Lemieux, 2000). Discomfort with

closeness is associated with a fearful-avoidant attachment (negative model of self and others) which consists of feelings of unworthiness and an expectation that others will be untrustworthy and rejecting. Experiences of abuse and household dysfunction may perpetuate a lack of safety and security during development and a greater likelihood of a fearful-avoidant attachment style. Studies on childhood abuse and attachment style have found a significant relationship among physical abuse, neglect, and fearful-avoidant attachment (Yumbul, C., Cavusoglu, S., & Geyimci, B., 2010; Unger, J. A. M. & De Luca, R. V., 2014). This style of attachment lends itself to avoidance of close involvement with others to protect against anticipated rejection by others (i.e. due to self-doubt and fear of rejection) and threat of abuse. These results also parallel the contextual framework posited by Gold (2001) that emphasizes the concurrent impact of household dysfunction and childhood abuse and neglect on an individual's attachment style and capacities for psychological and emotional functioning. Results (as shown in Table 11) further indicated the confidence ($r = -.37$) and discomfort with closeness ($r = .37$) scales showed a moderate correlation with PTSD symptoms. This adds further support for the association among secure and insecure attachment and PTSD symptoms. This association seems plausible as the negative impact of childhood abuse and household dysfunction on attachment style may be a predisposing risk-factor for PTSD symptoms among adult male offenders.

Mediation Analyses

As predicted by hypothesis five, insecure attachment style (i.e. discomfort with closeness) mediated the relationship between ACEs and PTSD symptoms, whereas secure attachment (i.e. confidence) did not. However, the other insecure attachment scales (i.e. need for approval, preoccupation with relationships, relationships as secondary) were not tested for mediation due to each not being significantly predicted by ACEs. The results of the analysis

indicate that some aspects of insecure attachment (i.e. discomfort with closeness) can have a meaningful impact on the relationship between ACEs and PTSD symptoms. The significant mediating effects of insecure attachment supports prior research that highlights adult attachment as a possible mechanism of action through which childhood abuse can affect psychological adjustment later in life (Alexander, 1992; Sandberg, 2010). Previous research has also shown support for the role of childhood abuse in perpetuating PTSD symptoms by facilitating insecure attachment (Roche et al., 1999; Twaite & Rodriguez-Srednicki, 2004). The present study contributed to these findings by exploring the role of secure and insecure attachment style in mediating the path between ACEs and PTSD symptoms in a sample of adult male offenders.

Limitations

There are several limitations to the current study. As with any cross-sectional design, data was gathered at only one time point limiting the ability to generalize findings in terms of longitudinal validity and causal interpretations. Therefore, further study is needed to better understand the effect of ACEs on adult attachment for this population. There are several limitations with each assessment utilized for this study. The ACEs questionnaire is a self-report measure that relies on retrospective data from participants. This can result in validity concerns regarding participants' responses about events that occurred during childhood. Male respondents may not see experiences as abusive or characterize them as such, and therefore may underreport. The PCL-5 is a self-report questionnaire based on a respondent's experience of PTSD symptoms (i.e. per DSM-5 criteria) in the past month. This leads to a vulnerability in causal assumptions regarding the relationship between ACEs and participants' PCL-5 scores, as there are other possible inferences that can be made. The sample's demographic characteristics (i.e. adult male offenders, low income, history of prior arrest and/or incarceration) may be predisposing risk

factors for experiencing PTSD symptoms that contribute more significantly to their PCL-5 scores (and PTSD symptoms) in the past month. Participants may have reported elevated PTSD symptoms due to psychological distress from prior arrests or during incarceration. There are also limitations with the ASQ-40 that was utilized to measure adult attachment in the current study. Prior research on attachment measures has emphasized the utility of a continuous scale for measuring attachment style as compared to a strictly categorical classification (Ravitz, et al., 2010). Attachment style is a multi-dimensional construct whereby individuals are more likely to endorse various aspects of both secure and insecure attachment than strictly endorse one specific category. The study addressed this by analyzing each of the attachment scales in the measure to assess their relationship with ACEs and PTSD symptoms. Further study is needed of the concurrent validity of adult attachment measures to establish normative data of attachment styles for this population. Participant motivation was also a possible limitation of the study. Participants were informed during the consent process that participation would have no bearing on their involvement in the diversion program, however they may have been motivated to report a greater number of ACEs due to the perception of preferential treatment and/or services in the program. The administration of a malingering measure (i.e. Test of Memory Malingering; TOMM, Tombaugh, 1996) may have strengthened the study by helping differentiate participants who may have been exaggerating their responses.

Conclusions, Strengths, and Future Directions

Conclusions

Research and advocacy efforts have increasingly emphasized the relevance of developmental and family-related risk-factors in the study of adult male offenders. Empirical studies have established that adult male offenders are at-risk of being exposed to a substantial

number of ACEs and experiencing PTSD symptoms in adulthood. However, there is a substantial need for further research on the role of attachment style for adult male offenders and its relationship to exposure to ACEs and PTSD symptoms in adulthood. This study investigated the relationship among ACEs, attachment style, and PTSD symptoms among a sample of adult male offenders. Moderate associations were found among 1) ACEs and both secure (i.e. confident) and insecure attachment scales (i.e. discomfort with closeness), and 2) both secure and insecure attachment scales and PTSD symptoms. The study also found a predictive relationship among ACEs, insecure attachment style, and PTSD symptoms supporting a simple mediation model where insecure attachment mediated the relationship between ACEs and PTSD symptoms. Both secure and insecure attachment appear to share a significant relationship between and ACEs and PTSD symptoms among a sample of adult male offenders. Discomfort with closeness, as opposed to insecure attachment in general, was related to ACEs and PTSD symptoms and mediated the relationship between them. An important consideration is the element of distrust in discomfort with closeness. If one grows up in circumstances that lead others to be viewed as untrustworthy, then it is easy to conclude that it is a "dog eat dog," "every man for himself" world where it doesn't make sense to "follow the rules" or engage in cooperative behavior. Society (and the mental health professions) view offenders as cold, manipulative people who are anti-social, but the relationship of discomfort with closeness to offending, ACEs and PTSD suggests that these are people who grew up uncared for and rebuffed and who therefore may see cooperative, affiliative behavior as effective or reasonable. Instead, pro-social (i.e. affiliative) behavior it is likely to be viewed as foolish, naive and even dangerous.

Strengths

This study included noteworthy strengths. Empirical support has increased for further study of the relationship between ACEs and PTSD symptoms among adult male offenders. However, there is currently a gap in the literature to empirically support the relevance of adult attachment style among these factors for this population. This study is a first in contributing to the current literature by investigating the relationship among ACEs, attachment style, and PTSD symptoms for this population. The inclusion of the ASQ is another strength of the study. The ASQ is a psychometrically sound instrument that provides a profile of continuous secure and insecure attachment scales to assess the varying dimensions of adult attachment in the sample. Utilizing the ASQ allowed for a more thorough exploration of the varying attachment style scales and their associations and predicative relationships with ACEs and PTSD symptoms. Further understanding of the role of attachment style may have a beneficial impact on the study of precipitating risk-factors (i.e. childhood abuse and household dysfunction) and mental health issues for adult male offenders.

Future Directions

An overarching goal of this study is to facilitate future studies on the role of attachment style in improving the conceptualization and treatment of psychological, emotional, and behavioral difficulties for adult male offenders. Prior research has emphasized the relevance of developmental risk-factors and PTSD symptoms among this population; however, the role of attachment style has largely gone unaccounted for among these factors. The inclusion of attachment style in future research on this population can assist the development of empirically and clinically relevant insights about the impact of developmental risk-factors on male offenders' view of self and others (e.g. as indicated via attachment scales). Future studies could benefit from incorporating the ASQ (or other continuous scale attachment measures) and larger sample

sizes of adult male offenders to develop a standardized set of norms for specific attachment scales. Prospective studies could also measure changes in attachment style in a pre/postintervention to evaluation if offender-based interventions are facilitating changes in view of self and others. Additionally, this study highlights the importance of investigating attachment disruptions that emerge from dysfunctional childhood upbringings. Further understanding the relationship between adverse experiences, insecure attachment style, and their relationship to trauma can inform treatment for this population. Future research on the relationship between adult male offenders' attachment style and PTSD symptomatology can further inform conceptualizations and treatments oriented toward improving outcomes for adult male offenders and successful reintegration into their communities. Offender-focused treatments that emphasize the repair of attachment disruptions can possibly reduce trauma symptoms, improve behavioral and psychological difficulties, and thus reduce recidivism.

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