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ABUSE VICTIMIZATION AND IMPULSIVITY IN INCARCERATED MALES:
EXAMINING THE ROLES OF AFFECTIVE INSTABILITY AND TRAUMA SYMPTOMS

by

JACQUELINE K. DOUGLAS

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York 2023

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ABSTRACT

Abuse Victimization and Impulsivity in Incarcerated Males: Examining the Roles of Affective Instability and Trauma Symptoms

by

Jacqueline K. Douglas

Advisor: Peggilee Wupperman

Incarcerated individuals with a history of physical and/or sexual abuse have been found to exhibit increased levels of impulsivity compared to those with no abuse history (Carli et al., 2014; Davis et al., 2017; Sergentanis et al., 2014). Given that impulsivity is a risk factor for criminal delinquency (Carroll et al., 2006; Kamaluddin et al., 2015; Zimmerman, 2010), it is important to gain a thorough understanding of psychological factors that may contribute to higher levels of impulsivity in incarcerated populations. The present study examined the mechanisms underlying the relationship of physical and/or sexual abuse history to impulsivity in a sample of incarcerated males ($N = 138$). Mediation hypotheses were investigated using Model 4 on PROCESS macro in SPSS 28 (Hayes & Preacher, 2013). Results indicated that history of physical abuse, sexual abuse, and a composite of physical/sexual abuse were each positively correlated with affective instability, trauma symptoms, total impulsivity, and motor impulsivity. Affective instability and trauma symptoms were shown to fully mediate the relationship between each type of abuse and total impulsivity. Results also indicated that affective instability, but not trauma symptoms, had at least a partial mediating effect on the relationship between abuse and motor impulsivity in the full model. Although preliminary, these findings have implications for determining the psychological factors that can be targeted in interventions aimed at reducing behavioral problems in incarcerated males with abuse histories.

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CHAPTER 1: INTRODUCTION

Decades of research have underscored the role of interpersonal abuse experiences as major risk factors for negative behavioral, physical, and mental health outcomes in individuals throughout the world (Sergentanis et al., 2014; Papalia et al., 2018). In particular, physical and sexual abuse have been identified as common major health concerns across diverse populations (Sergentanis et al., 2014). According to the National Incidence Study of Child Abuse and Neglect, approximately one in every 58 children in the United States endorsed experiencing at least one instance of physical, sexual, or emotional abuse (Sedlak et al., 2010). Physical abuse can be defined as any act resulting in a non-accidental physical injury, including but not limited to shaking, throwing, dropping, pushing, grabbing, dragging, pulling, punching or kicking (Sedlak et al., 2010; Villagr a et al., 2019). Sexual abuse can be defined as unwanted, forced sexual activity of one person by another (Villagr a et al., 2019).

In a national random sample of 1,442 individuals in the United States, researchers found that approximately 14% of men and 32% of women endorsed being a survivor of childhood sexual abuse, whereas 22% of men and 19% of women endorsed histories of childhood physical abuse (Briere & Elliott, 2003). Roughly 21% of individuals with early abuse histories reported experiencing both physical and sexual abuse throughout their lifetime (Briere & Elliott, 2003). Moreover, those who suffered from early physical and/or sexual abuse in childhood were more likely than those with no early abuse histories to report experiencing physical abuse or sexual abuse in adulthood (Briere & Elliott, 2003). This association of childhood victimization and adult revictimization is consistent with other studies which have found that persons who suffer from early abusive experiences have an increased risk of experiencing subsequent revictimization later in life (Mej a et al., 2015; Papalia et al., 2018).

Empirical evidence of the impact of physical and sexual abuse experiences on survivor's long-term behavioral, physical, and mental health outcomes has been well established. Mental health outcomes associated with physical and sexual abuse experiences include but are not limited to increased rates of depression (Roxburgh & Macarthur, 2014), suicidality (Easton et al., 2013), antisocial characteristics (Krischer & Sevecke, 2008), psychopathic characteristics (Dargis et al., 2017), aggression (Sarchiapone et al., 2009), self-injurious behaviors (Sakelliadis et al., 2010), and post-traumatic stress disorder (Dixon et al., 2005). A history of at least one physically and/or sexually abusive experience during childhood appears to be significantly associated with nearly every type of anxiety disorder, mood disorders, disruptive behavior disorder, attention-related disorder, and substance use disorder in both males and females (Cuomo et al., 2008; King et al., 2011; Lown et al., 2011; Papadodima et al., 2010). Physical and sexual abuse victimization have also been linked to engagement in violent acts (Papalia et al., 2018) and criminality (Mejía et al., 2015; Papalia et al., 2018; Trauffer, 2021). These findings underscore the deleterious effects of abuse victimization on an individual's risk of psychological suffering (Mejía et al., 2015).

Abuse Victimization in Incarcerated Individuals

Among the more severe behavioral outcomes associated with physical and/or sexual abuse victimization is an increased risk of engaging in criminal behavior (James & Glaze, 2006; Johnson et al., 2006; Krischer & Sveche, 2008; Mejía et al., 2015; Papalia et al., 2018). Extensive amounts of research have provided consistent evidence of the link between victimization and criminal offending across various populations, including juveniles, adults, males and females. Recent meta-analyses of studies examining the prevalence of abuse victimization histories in incarcerated populations have yielded above-average prevalence rates

compared to non-incarcerated individuals, with mean physical abuse prevalence rates of ranging from 32.2 to 47.7% and mean sexual abuse prevalence rates ranging from 33.8% to 50.4% (Bodkin, et al., 2019; Dalsklev et al., 2021; Holmes & Slap, 1998). Furthermore, large longitudinal studies (Widom et al., 2018; Widom & Massey, 2015; Widom & Maxfield, 2001) have found that individuals with a history of early physical abuse, sexual abuse, and/or neglect were arrested more frequently and committed criminal offenses at approximately two-to-three times the rate as those with no maltreatment histories.

Previous research findings suggests that risk of criminal offending does not significantly differ according to abuse type (Papalia et al., 2018; Widom & Maxfield, 2001); indicating that one type of abuse may not predispose an individual to criminal offending more so than another form of abuse. However, incarceration status in and of itself may pose a risk of revictimization, as incarcerated persons with a history of childhood physical and/or sexual abuse have been found to have a heightened risk of being physical or sexually abused in prison (Wolff et al., 2009).

Historically, research investigating the link between physical and/or sexual abuse history and criminal offending was conducted largely within female incarcerated populations. Male experiences of abuse victimization have historically not been discussed openly due to stigmatization and societal myths of the male experience, leading many male survivors to remain silent about their experiences (Johnson et al., 2006). In this way, stigma surrounding the topic of physical and sexual abuse in male survivors is believed to have contributed to the historical dearth of research regarding the experiences of victimized males (Johnson et al., 2006). Given that incarcerated males outnumber their female counterparts at a ratio of nine to one (Stephan, 2008), it is imperative to gain a better understanding of the sequel of physical and/or sexually abusive experiences in male incarcerated populations.

Fortunately, research conducted on this topic within the last two decades has become increasingly focused on examining abuse histories in incarcerated male populations. Findings of such research conducted to date indicates that, in spite of potential underreporting and stigmatization, physical and sexual abuse appear to be common experiences within incarcerated or previously incarcerated males (Johnson et al., 2006). Roughly 26-59% of incarcerated males endorse having a history of physical abuse, sexual abuse and/or neglect (Johnson et al., 2006; Sergeantanis et al., 2014). Differences in the operational definitions of physical and sexual abuse across studies have been attributed to variability in reported prevalence rates of abuse (Johnson et al., 2006). It is likely that statistical rates reported are underestimations of the true prevalence given evidence of underreporting of abusive experiences, especially in male populations (Johnson et al., 2006; Widom & Morris, 1997).

Societal Impacts of Criminal Offending

According to a Bureau of Justice report, approximately 1 in every 140 adult American citizens were under some form of correctional supervision as of 2018 (Maruschak & Minton, 2020). An estimated \$2.3 trillion is spent per year in the United States on crime-related costs via the financial burdens of jails and prisons, costs for police departments, criminal justice system staff and resources, and loss of property (Kiehl & Hoffman, 2011). These statistics underscore the fact that incarceration is a normative experience for many individuals in the United States, making the implications of incarceration an important public health and societal concern.

Research evidence indicates that there are various ways in which incarceration can impact communities with high incarceration rates, including but not limited to lower quality and access to health care (Shannon et al., 2017); poor mental health outcomes as evidenced by higher rates of depression and anxiety; and physical health consequences such as higher rates of

sexually transmitted infections, HIV/AIDS, cardiovascular and lung health issues (Gillford, 2019). Family members of incarcerated individuals also appear to suffer from socioeconomic, physical and mental health consequences of incarceration such as financial stress from loss of income and burden of legal fees, incarceration stigma, behavioral and conduct problems, higher body mass index, and cognitive and learning-related issues in children of incarcerated individuals (Gillford, 2019; Haskins & McCauley, 2019).

Examining the Abuse-to-Prison Pipeline

Efforts to better understand the link between abuse victimization and criminal offending through empirical and theoretical research have resulted in the establishment of frameworks such as the cycle of violence (Widom, 1989) and cumulative risk models (Papalia et al., 2018). The cycle of violence theory is rooted in social learning theories and is related to the fact that perpetrators of crimes or violence are often found to have suffered from abuse victimization or violence themselves (Brewer-Smyth, 2004; Papalia et al., 2018). According to the theory, criminal and violent behaviors become learned behaviors modeled after previously observed or experienced violence (Papalia et al., 2018; Widom, 1989). Continued exposure to violence, abuse, and crime over time can lead to the internalized beliefs that these behaviors are normal and acceptable means of dealing with conflict or expressing and regulating affect (Craig & Sprang, 2007; Trauffer, 2011). The cycle of violence theory has been supported by prospective and retrospective study findings of childhood abuse as a risk factor for criminal offending in various populations (Fagan, 2005; Jennings et al., 2014; Maxfield & Widom, 1996; Widom, 1989).

Alternatively, cumulative risk models posit that victimized individuals may engage in abusive, violent, or criminal behavior due to the presence of risk factors that accumulate and

interact to predict negative behavioral outcomes (Papalia et al., 2018). Risk factors include but are not limited to the nature and severity of abusive experiences, age at the time of abuse exposure, quality of social relationships and caregiver attachment, coping resources, the extent of corrective support experiences post-abuse, and environmental factors such as poverty, disordered neighborhood and communities, parental incarceration, and discrimination (Kitzmler, 2019; Papalia et al., 2018; Ross & Jang, 2000). Several studies have found that experiencing multiple instances of abuse victimization, earlier age of abuse victimization, history of homelessness, racial minority status, low family income, lack of high school degree, and living in a disordered neighborhood are associated with a heightened risk of criminal justice system involvement (Fagan, 2005; Papalia et al., 2018; Trauffer, 2021; Wolff et al., 2009; Wu et al., 2016).

When discussing risk factors in the abuse-to-prison pipeline, it is important to consider the role of race in criminal offending and criminal justice system involvement. According to prior research, the emotional processing of chronic discriminatory experiences may influence impulse control issues in racial minority individuals (Riley et al., 2021). Each experience of racial discrimination and/or societal aggression may heighten emotional arousal and reactivity until such arousal and reactivity becomes dispositional (Blackmon et al., 2017). In other words, chronic race-related stress may contribute to the development of impulsive responding as an emotional stress response (Riley et al., 2021).

Such heightened emotional arousal and reactivity can decrease an individual's ability to regulate emotions and impair the ability to thoroughly consider the consequences of their reactions—thus contributing to impulsive responding tendencies (Riley et al., 2021). The association of chronic discriminatory experiences to impulsive responding may be particularly strong in individuals already vulnerable to affective and behavioral control issues due to histories

of physical or sexual abuse (Dargis et al., 2017; Krischer & Sevecke, 2008). Discriminatory experiences can also further validate negative views an abused individual may hold about themselves and the world as an unjust place that poses a direct threat to their safety and stability.

In addition, decades of research indicate that persons of color are disproportionately more likely to be arrested, criminally charged, and sentenced than their white counterparts (Stewart et al., 2017; Wu et al., 2016). Persons of color are more likely to experience discrimination, coercion, verbal threats, and physical aggression by police and members of the criminal justice system (Holmes & Smith, 2012), perceivably simply due to their race (Brooms & Perry, 2016). Racial discrimination is considered to play a considerable role in accounting for racial disparities observed in the criminal justice system, including the treatment of minority individuals prior to and during incarceration (Stewart et al., 2017).

Impulsivity in Incarcerated Individuals

A vast body of empirical evidence has identified deficits in impulse control as the most common primary predictor of delinquency and criminal behavior, over and above other trait-based constructs (Carroll et al., 2006; Kamaluddin et al., 2015; Zimmerman, 2010). Impulsivity is a complex, multidimensional construct (Carroll et al., 2006; Zimmerman, 2010). Trait impulsivity can be defined as a predisposition to respond to internal and external stimuli in a rash manner without planning, forethought, or consideration of the consequences of impulsive reactions (Carli et al., 2014; Patton et al., 1995). Further, impulsivity can be conceptualized as nonplanning impulsiveness, a cognitive bias towards present moment focus without regard for future consequences, and motor impulsiveness, or the inability to exercise self-control over dominant urge responses and tendency to act quickly without thinking (Carroll et al., 2006; Patton et al., 1995; de Wit et al., 2007).

Robust theoretical and empirical support has been found for the importance of impulsivity in criminal offending (Carroll et al., 2006; Chapple & Johnson, 2007; Jones & Lynam, 2009). Significant associations between impulsivity and criminal behavior have been established in both general incarcerated and forensic psychiatric inpatient populations (Alford et al., 2020). Compared to non-incarcerated populations, incarcerated juveniles and adults have been shown to exhibit significantly more impulsive control difficulties (Brunelle et al., 2009; Carroll et al., 2006). Indeed, longitudinal studies throughout the world have shown that impulse control difficulties in childhood significantly predict risk of engaging in deviant behaviors and criminal offending in adolescent and adulthood (Vazsonyi et al., 2006).

Consistently, the General Crime Theory (GCT) proposed by Gottfredson and Hirschi, (1990) posits that self-control, or impulse-control deficits, is the main enduring personality trait underlying criminal behavior (Gottfredson & Hirschi, 1990; Vazsonyi et al., 2006). Low self-control decreases the ability to weigh potential consequences of actions, which increases the tendency to seek immediate personal pleasure through impulsive and/or risk-taking behaviors (Gottfredson & Hirschi, 1990; Trauffer et al., 2012). These impulse-control deficits are posited to be largely determined by parental behavioral patterns and tendencies observed during childhood, which shape the child's behavior, attitudes, and capacity for self-control (Trauffer et al., 2021). Consistently, a longitudinal study demonstrated that early parental sensitivity, warmth, and attentiveness predicted low impulsiveness in children over a two-year period (Spinrad et al., 2012).

Furthermore, prenatal and perinatal factors such as prenatal substance exposure (tobacco, alcohol, cocaine, etc.), premature birth, and low birth weight appear to be associated with

offspring impulsivity risk (Galéra et al., 2011; Lees et al., 2020). Genetic factors have also been shown to contribute to individual differences in impulsivity (Sanchez-Roige et al., 2019).

Motor Impulsivity and Criminal Behavior

The impulsivity factor most consistently implicated in the risk of criminal offending is *motor impulsiveness*, which can be defined as the inability to contemplate and inhibit behavioral impulsive urges (Chapple & Johnson, 2007; Jones & Lynam, 2009). Motor impulsivity has been linked to higher rates of criminal recidivism (Ros et al., 2020) as well as homicidal and violent criminal offending (Armiya'u et al., 2020; Meijers et al., 2017). The tendency to not contemplate the consequences of behavior(s) before acting and instead respond reactively to urge cues appears to be a risk factor for offending behavior (Jones & Lynam, 2009). Individuals who are convicted of criminal offending appear to be more reactive to impulsive urge cues and less responsive to punishment cues that would facilitate disinhibition or avoidance tendencies than their non-offending counterparts (Brunelle et al., 2009). Accordingly, the inability to inhibit motor impulsive urges and defer emotional gratification appears to be one of the most predictive factors of lifetime offending (Chapple & Johnson, 2007).

Situational factors may also exacerbate dispositional motor impulsiveness tendencies. For example, empirical evidence suggests that trait impulsivity levels are especially predictive of externalizing behavioral problems in the context of emotional distressing situations or stimuli (Carli et al., 2014; Chapple & Johnson, 2007). Thus, as emotional arousal increases, the ability to resist acting on impulsive urges decreases in children with low impulse control, which may culminate in subsequent engagement in risky or criminal behaviors (Bousardt et al., 2016).

Impulsivity and the Abuse-to-Prison Pipeline

Consistent with the cycle of violence model, the cumulative risk model, and the results of chronic discrimination, abuse victimization has been identified as a contributing risk factor in the development of impulse control deficits that can lead to subsequent criminal offending (Krischer & Sevecke, 2008). Evidence suggests that individuals with histories of abuse may be more susceptible to developing trait impulsivity and exhibit more pronounced impulsiveness (Brodsky et al., 2001; Shin et al., 2016). Abuse may affect impulse control by impairing an individual's ability to regulate behavioral responses to emotional distress. In this way, abuse may diminish an individual's capacity to adaptively regulate negative emotional states such as anger, aggression, and fear (Krischer & Sevecke, 2008), which may increase urges to engage in maladaptive behavioral responses (e.g., substance abuse, criminal behavior) in an attempt to regulate distressing emotions (Messman-Moore et al., 2013). Chronic abuse experiences are believed to impede the development of emotional coping processes as well as cognitive impulse control functioning (Bradley, 2003).

Abuse may also impact cognitive pathways to impulsivity through its effect on inhibitory and stress response processes in the brain (Braquehais et al., 2010; Oshri et al., 2017). Chronic trauma exposure has been shown to lead to alterations in various brain regions, including the prefrontal cortex, corpus callosum, and mesolimbic pathways (Oshri et al., 2017; Shin et al., 2016). Such neurological changes may impair impulse response selection, behavioral planning, premeditation, emotion regulation abilities, cognitive focus tendencies, and executive functioning (Oshri et al., 2017; Shin et al., 2016),).

These emotional and cognitive impairments may also explain the manner through which abuse leads to violent and criminal behaviors. Researchers postulate that early abuse and maltreatment are pivotal determining factors in the course of externalizing behavioral problem

development and criminality propensity (Sergentanis et al., 2014). In this way, impaired inhibitory and stress response processes may play a role in exacerbating the likelihood of impulsive behaviors problems and criminality in abuse survivors.

Consistently, abuse victimization, often assessed in the literature as a composite of physical abuse and/or sexual abuse, has been associated with a heightened risk motor impulsivity in adult justice system-involved males (Dargis et al., 2016; Krischer & Sevecke, 2008; Poythress et al., 2006). Compared to non-abused incarcerated males, researchers found that males with abuse histories were significantly more likely to exhibit above average impulsivity scores (Sergentanis et al., 2014). Furthermore, abuse has been shown to predict impulsivity outcomes over and above the effects of unfavorable family conditions, interpersonal and affective components of psychopathology (Dargis et al., 2016; Sergentanis et al., 2014). Such findings providing support for the unique role of impulsivity in criminal offending propensity in persons with abuse histories.

Correlates of abuse victimization in adulthood have been far less examined, although a few studies have yielded support for the link between adult victimization and impulsivity. Adults who experience interpersonal violence, including both physical and sexual abuse, have been shown to exhibit elevated levels of positive urgency, the tendency to act impulsively in response to positive emotional experiences, and negative urgency, the tendency to act impulsively when experiencing negative emotions (Dodaj et al., 2020). Survivors of physical and sexual abuse in adulthood exhibiting high rates of impulsivity may be prone to engage in externalizing behaviors, such as substance use or criminal behaviors, to cope with post-assault distress (Combs et al., 2014).

Empirical investigations into differential associations between abuse victimization, impulsivity, and offending according to abuse type have been extremely limited, although differences have been evidenced in some studies (Dargis et al., 2016; Krischer & Seveche, 2008; Shin et al., 2016). For example, research suggests that justice system-involved males with a history of physical abuse appear to exhibit higher levels of impulsivity and criminal behavior engagement than justice system-involved males with a history of sexual abuse or those with no abuse histories (Dargis et al., 2016; Krischer & Seveche, 2008). Another study of justice system-involved males and females found that physical abuse victimization directly predicted impulsive sensation seeking and criminal engagement, whereas sexual abuse directly predicted criminal engagement but not impulsivity (Shin et al., 2016). The present study aims to further inform the current understanding of the relationship between abuse victimization type and impulsivity outcomes in justice system-involved males.

Affect Instability in Abuse Survivors

The effects of abuse on impulsivity and criminality may be at least partially attributable to self-regulation processes such as affective instability and reactivity (Harris et al., 2021; Poythress et al., 2006). Affective instability, also referred to as affective reactivity, is defined as the tendency to experience strong emotional responses to affect-inducing experiences (Ma, 2020). High levels of affective instability may reflect deficits in the ability to effectively regulate negative emotional arousal in everyday life (Ma, 2020). Affectively reactive individuals are often described as irritable or defensive in response to provocation (Weinshenker & Siegel, 2002). Such persons may tend to interpret others' behaviors, even seemingly benign behaviors, as potentially harmful or threatening (Weinshenker & Siegel, 2002), and are thus prone to experience unstable and intense affective reactions to such stimuli or experiences.

When emotionally aroused, individuals engage in self-regulation processes in which they draw their attention to the current situation and then respond with efforts to regulate and reduce their emotional distress (Bird et al., 2019). When used adaptively, such self-regulatory processes can serve as a protective factor against the development of impulsive behavioral and affective reactivity (Covell & Scalora, 2002). Disruptions in early stages of affect development, in the form of early childhood abuse and adverse experiences, threatens successful self-regulation development and may impede the development of impulse control (Charak et al., 2018; Covell & Scalora, 2002; Messman-Moore et al., 2010). Abusive environments and experiences may inhibit optimal development of emotional awareness and understanding due to heightened threat arousal systems (Oshri et al., 2017). This impairs an individual's ability to rationally process emotionally distressing situations and effectively control behavioral responses (Oshri et al., 2017; Trauffer, 2021). As a result, the person may become avoidant of emotional distress or seek external means of self-regulation, such as impulsive aggression, criminal acts, and in some cases the reenactment of traumatic abuse onto others (Baltieri & Andrade, 2007; Gobin et al., 2015; Shin et al., 2016).

Accordingly, an affect instability model of abuse-to-offending identifies abuse as an experience that increases susceptibility to affective instability in adolescence and adulthood (Poythress et al., 2006), which exacerbates risk of impulsivity and criminal offending across the lifetime (Aebi et al., 2014). Consistently, participants who reported experiencing traumatic physical and/or sexual abuse experiences exhibited higher levels of dysregulated affect expression and emotion inhibition coping than those with non-abuse-related trauma and non-traumatized controls (Ma & Li, 2014). Thus, individuals who experience physical and/or sexual

abuse victimization may be particularly at risk for developing affective instability and subsequent impulsive behavioral reactivity (Silvern & Griese, 2012).

Moreover, deficits in adaptive emotional coping and a propensity towards externalizing behaviors may be particularly relevant in male survivors of early abusive experiences (Topitzes et al., 2011), as the mediating effect of affective regulation on the association between abuse and behavioral problems has been shown to be stronger for males than females (Langevin et al., 2015). Furthermore, lack of adaptive emotional coping skills fully explained the link between maladaptive childhood experiences (conceptualized as childhood abuse and neglect) and criminal offending in a sample of male juveniles, but not their female counterparts (Topitez et al., 2011). Although this finding was yielded in a sample of survivors of any type of childhood abuse or neglect rather than physical and/or sexual abuse specifically, such findings provide preliminary support for the specific role of emotional regulatory deficits in later offending in male survivors of abusive experiences.

Research has yielded mixed findings regarding differences in affective instability according to abuse victimization type. For example, greater neurological activity in brain regions responsible for affective regulation and stability have been observed in survivors of sexual abuse compared to survivors of physical abuse (Duque-Alarcon et al., 2019). Furthermore, non-justice system-involved individuals with a history of physical abuse have been shown to exhibit greater levels of affective arousal/intensity and persistence, but not emotional sensitivity, while those with a history of sexual abuse exhibit greater levels of affective arousal/intensity and emotional sensitivity, but not affective persistence (Heleniak et al., 2016).

Traumatic Stress in Abuse Survivors

Another common response to abuse victimization that is associated with impulse-control deficits in incarcerated populations is traumatic stress. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), traumatic stress is a psychological consequence of trauma exposure characterized by efforts to avoid of trauma-related cues, alterations in mood and cognitive processes, changes in arousal and reactivity, and intrusive thoughts, memories, and/or nightmares about the traumatic event (American Psychiatric Association, 2013). Individuals who report a history of abuse victimization have been shown to exhibit greater levels of traumatic stress symptoms than their non-abused counterparts (Kim & Choi, 2020; Powers et al., 2015).

Abuse victimization may alter individual's perception and cognitive framework such that hypervigilance and hyperarousal make them more prone to overreact in interpreting stimuli as threatening, thus resulting in overexaggerated emotional and behavioral responses (Powers et al., 2015). These symptoms take away finite attentional cognitive resources that could instead be used to reduce emotional arousal and reactivity (Powers et al., 2015). Consequently, heightened arousal may leave such individuals susceptible to violent and impulsive reactions (Brewer-Smyth, 2004).

Researchers have found that youth who exhibit high levels of traumatic stress symptoms also exhibit high levels of arousal and low levels of behavioral inhibition, which may suggest that traumatic stress symptoms have the potential to increase one's susceptibility to motor impulsivity deficits (Weiss et al., 2014). Internal distress associated with trauma symptoms may facilitate engagement in impulsive and risky behaviors as a means of reducing felt emotional distress (Contractor et al., 2016). The impulsive tendency to act prematurely and without forethought has been directly linked to trauma symptomatology in abuse survivors (Kim & Choi,

2020). In this way, high levels of arousal and distress may diminish one's motor control abilities and leave abuse survivors who suffer from trauma symptoms susceptible to impulsive action (Baumeister, 2003; Kim & Choi, 2020).

This is in line with the compulsive re-exposure hypothesis, which posits persons with trauma symptoms may have high levels of impulsive sensation seeking that increases their risks of seeking emotionally arousing experiences that mimic the arousal they felt from traumatic experiences (Joseph et al., 1997; Contractor et al., 2016). Such re-exposure to emotionally arousing experiences is believed to reduce the emotional distress symptoms (Contractor et al., 2016), thus serving as a form of emotion regulation. Consistently, trauma symptoms of arousal, reactivity, and negative alterations in mood and cognition are significantly associated with the impulsivity factor of sensation seeking (Contractor et al., 2016).

Furthermore, individuals who suffer from traumatic stress may have difficulty controlling behaviors they perceive will reduce emotional distress in the moment, and thus are prone to act without forethought of potential consequences (Contractor et al., 2016). In addition, intrusive and avoidant trauma symptoms are believed to represent a form of maladaptive affect regulation side effects in survivors of physical and/or sexual abuse. When negative affect expression is punished in children who have been physically abused, it promotes the use of suppression, avoidance, and dissociation as forms of self-regulation (Stevens et al., 2013). These self-regulation techniques inhibit the ability to flexibly respond to and engage in emotionally charged environments or stimuli, thus paving the way for the development of affect regulation difficulties and maladaptive efforts to regulate emotions—potentially through impulsive behaviors (Powers et al., 2015; Stevens et al., 2013). Accordingly, difficulties with affect regulation have been shown to

underlie the link between abuse victimization and trauma symptoms in a sample of survivors of childhood physical, sexual, or emotional abuse (Stevens et al., 2013).

Neurological evidence of changes in various brain regions and biological stress system activation in persons with trauma symptoms also provides support for the link between abuse, trauma symptoms, and affect regulation. Decreased prefrontal cortex functioning, an area of the brain responsible for emotional processing, affect regulation, and behavior planning, has been observed in survivors of childhood sexual abuse (Kerig & Becker, 2010; Thomaes et al., 2010). Furthermore, increased activation in the orbitofrontal cortex and anterior temporal lobes in survivors of sexual abuse with traumatic stress symptoms compared to those without such symptoms suggest that individuals with trauma symptoms may have heightened sensitivity to and awareness of emotionally-charged stimuli (Blanco et al., 2015). Sexual and physical abuse survivors have also been shown to exhibit dysregulated Hypothalamic-Pituitary-Adrenal (HPA) axis and catecholamine system functioning, two stress systems responsible for regulating internal homeostasis and flight or fight responses in the perception of threat (Chivers-Wilson, 2006; De Bellis et al., 1999).

Overactivation in these internal systems may contribute to trauma symptoms of persistent hyperarousal and re-experiencing of trauma (Chivers-Wilson, 2006; Kerig & Becker, 2010). In this way, trauma changes the body's reaction to stress by disturbing negative feedback inhibition, thus increasing a stress hormone reaction and leading to exaggerated fear responding (Perry et al., 2005; Chivers-Wilson, 2006). These findings may further explain why abuse survivors who have difficulty managing distressing affect may exhibit exaggerated impulsive responses.

A study conducted in a non-incarcerated sample found that traumatic stress was more strongly associated with early sexual abuse than early physical abuse victimization (Briere &

Elliott, 2004). However, results of a different study showed that incarcerated survivors of sexual abuse were more likely to exhibit trauma symptoms than incarcerated survivors of physical abuse with no sexual abuse histories (Dixon et al., 2005). Moreover, incarcerated individuals with higher frequency of physical and sexual abuse experiences, and those who experience both types of abuse victimization, are at greater risk for developing traumatic stress symptoms (McNair et al., 2019).

Affect Instability and Traumatic Stress in Incarcerated Individuals

One of the most problematic impulsive behaviors that may be exhibited in those with abuse histories, traumatic stress symptoms, and affect instability is criminal offending. Trauma symptoms can have detrimental effects on criminal behavior through its impact on behavioral inhibition and cognitive functioning (Dalsklev et al., 2019). For example, symptoms of avoidance and intrusive reexperiencing can manifest in impulsive delinquency due to a lack of concern for the consequences of criminal acts (Kerig & Becker, 2010). Trauma symptoms may also contribute to criminal susceptibility through consequential heightened affective reactivity and regulatory deficits (Dargis et al., 2016). Trauma symptoms of hyperarousal and reactivity may increase irritability and aggression while also limiting access to cognitive resources to facilitate effective information processing, emotion regulation, and decision making—thus resulting in criminal offending behaviors (Kerig & Becker, 2010).

In addition, susceptibility to perceive nonthreatening and ambiguous stimuli as threatening and/or emotionally provoking could lead survivors of physical and sexual abuse to engage in acts of criminal offending as a means of self-protection or self-regulation (Kerig & Becker, 2010). In this way, affective instability could play a role in trauma symptom's impact on criminal offending propensity through heightened affective arousal and deficits in affective

control. Thus, criminal propensity may develop following physical and/or sexual abuse experiences as traumatic stress-related hypervigilance and affective instability begin to interfere with survivors' ability to adaptively cope with and respond to emotional distress (Kerig & Becker, 2015). Consistently, both traumatic stress and deficits in affective control have been found to at least partially explain the link between physical and/or sexual abuse and aggressive behavioral reactivity in incarcerated juveniles (Hodgdon, 2009; Silvern & Griese, 2012). In sum, evidence supports the theory that abuse victimization may increase the risk of offending by inhibiting affect stability development and promoting traumatic stress responses—thus increasing motor impulsivity and overall impulsivity. However, more research is necessary to gain a clearer understanding of these relationships.

CHAPTER 2: PRESENT STUDY RATIONALE

Extensive evidence has shown that physical and/or sexual abuse victimization predicts increased risks of impulsivity, which greatly increases the risk of criminal offending (Alford et al., 2020; Bradley, 2001; Brodsky et al., 2001; Oshri et al., 2017; Shin et al., 2016). However, the specific psychological processes through which abuse victimization predicts impulsivity remains underexplored in empirical studies of forensic populations (Alford et al., 2020).

Specifically, there remains limited research on the roles of affective instability and trauma symptomatology in helping to explain the relationship of abuse to impulsivity in incarcerated individuals. The current study sought to fill these gaps in the literature by investigating the potential mediating roles of affective instability and trauma symptoms in the relationship between physical and/or sexual abuse and impulsivity in a sample of incarcerated males. Due to research suggesting that motor impulsivity is one of the biggest predictors of criminal behavior (Chapple & Johnson, 2007; Jones & Lynam, 2009a), this study examined both total impulsivity and motor impulsivity as dependent variables. The identification of psychological mechanisms underlying the abuse-impulsivity link may assist researchers, clinicians, and those working in the criminal justice system by informing the assessment, conceptualization, and provision of services to male prisoners with abuse histories (Alford et al., 2020).

The specific aims and hypotheses of the present study were as follows:

Aim 1. Examine the association between physical and/or sexual abuse history, affective instability, trauma symptoms, and impulsivity. Considering empirical evidence of the distinct role of motor impulsivity in criminal offending propensity, this study examined the relationship of total impulsivity as well as motor impulsivity with other variables of interest (i.e. abuse

victimization, affective instability, and trauma symptoms). It was hypothesized that history of physical abuse, sexual abuse, and the composite physical and sexual abuse would be positively correlated with affective instability, trauma symptoms, total impulsivity, and motor impulsivity. Affective instability and trauma symptoms were also hypothesized to be positively correlated with both total impulsivity and motor impulsivity.

Aim 2a. Examine the mediating roles of affective instability and trauma symptoms in the relationship between physical abuse, sexual abuse, and the combination of physical and/or sexual abuse to total impulsivity. It was hypothesized that the relationships between abuse and total impulsivity would be at least partially mediated by affective instability and trauma symptoms.

Aim 2b. Examine the mediating roles of affective instability and trauma symptoms in the relationship between physical abuse, sexual abuse, and the combination of physical and/or sexual abuse to motor impulsivity. It was hypothesized that the relationship between abuse victimization and motor impulsivity would be at least partially mediated by affective instability and trauma symptoms.

CHAPTER 3: METHODS

Participants

The present study utilized deidentified data collected in a previous study (Haden & Shiva, 2008; 2009). Participants were incarcerated men who voluntarily participated in the original study (see Procedures below for more details). Participants were English-speaking men between the ages of 17 to 65 who were hospitalized in a psychiatric hospital for at least seven days. These men were generally referred to the forensic inpatient unit from the New York City correctional system for psychiatric evaluation and treatment. The sample used in the present study consists of a total of 138 participants with a mean age of 31.68 ($SD= 10.85$). Endorsed ethnicities of participants include Black (57.2%), Hispanic or Latino (21.7%), White (14.5%), Bi/multi-racial (2.2%), Other (2.2%), and Asian (2.2%).

Procedures

The present research study was conducted using a portion of de-identified secondary data previously collected for an IRB-approved study conducted from 2005 to 2010 (Haden & Shiva, 2008; Haden & Shiva, 2009) in a sample of male forensic inpatients. The de-identified data was originally collected on an inpatient unit of a forensic psychiatric hospital in the New York area from 2002 to 2010. IRB approval was received for retrospective review of files from 2002-2005. The CUNY IRB determined that the current study did not require IRB approval before being conducted.

This study ($N = 138$) used de-identified data of a subsample of participants with complete records assessing self-reported history of physical and sexual abuse, affective instability, traumatic stress, and trait impulsivity. In the original study, participant self-reported history of sexual and/or physical abuse was collected from patient intake admission packets and discharge

summaries. Masters level graduate students administered the Barratt Impulsivity Scale, Eleventh Edition (BIS-11) to eligible inpatients within 72 hours of admission to the unit. The Personality Assessment Inventory (PAI) was administered by masters' students within two weeks of admission to the unit. Demographic data regarding participant ethnicity and age was collected by masters' students via medical chart reviews. Refer to the original studies (Haden & Shiva, 2008; 2009) for further detail on procedures.

Measures

Physical and Sexual Abuse History

History of physical and/or sexual abuse victimization was determined based on review of patient hospital files, including patient intake packets and discharge summaries, which included a psychosocial assessment that evaluated the presence or absence of physical and sexual abuse. Abuse history was measured as a categorical variable based on patient explicit endorsement or denial of prior physical and/or sexual abuse experience(s) at some point during their inpatient stay. Endorsement often occurred in the initial psychosocial, but endorsement that occurred later in treatment was also entered into the patient files and entered as "present" in the de-identified data. This study only included participants whose files indicated that abuse was either endorsed or denied. Individuals whose files contained neither endorsement nor denial of either abuse variable were excluded from the study.

The present study examined abuse victimization history using three abuse variables: (1) physical abuse, (2) sexual abuse, and (3) a composite of physical and sexual abuse history (henceforth referred to as "physical/sexual abuse"). The composite physical/sexual abuse history variable was used to assess the combination of physical and/or sexual abuse history endorsement. In this way, individuals who endorsed experiencing neither form of abuse scored "0," those who endorsed experiencing one of the two forms of abuse scored "1," and those who experienced

both physical and sexual abuse scored “2.” Participants who did not either confirm nor deny abuse victimization history were scored as “unknown” and their scores were excluded from data analyses. If participants endorsed or denied one form of abuse but did not have a recorded answer for the other (e.g., denied physical abuse but had no answer for sexual abuse), the score for the relevant type of abuse was entered, and the other type of abuse was entered as a missing variable. See Table 1 for data on participant abuse reporting.

Barratt Impulsiveness Scale-11 (BIS-11)

The Barratt Impulsiveness Scale-11 (BIS; Patton, Stanford, & Barrett, 1995) is a 30-item self-report measure of trait impulsivity. It is designed to account for the multidimensional nature of the construct through the use of six first-order and three second-order factor subscales. First-order factors include the categories of Attention, Cognitive Instability, Motor, Perseverance, Self-control, and Cognitive Complexity. Second-order factors consolidate these six categories into the three categories of Attention, Motor, and Nonplanning. The present study utilized the second-order Motor Impulsiveness scale, which consists of first-order Motor and Perseverance scale items. Items are rated on a 4-point Likert-type scale (1= rarely, 2= occasionally, 3= often, 4= almost always), yielding a total score and subscale scores for each factor. Example of items included on the BIS-11 are “I do things without thinking” and “I am self-controlled.”

The revised Total and Motor subscales determined by Haden and Shiva (2008) were found to more adequately represent impulsivity in a male forensic sample than the original BIS-11 structure; thus, these revised scales were used in the current study. See original study by Haden and Shiva (2008) for further information on these revised scales, as well as Appendix A and Appendix B. The revised total BIS-11 and revised Motor Impulsivity subscales have demonstrated good internal consistency (Cronbach’s α 0.85, 0.86 respectively), construct validity

and reliability in forensic samples (Haden & Shiva, 2008; 2009). Internal consistency scores were good for the total impulsivity scale ($\alpha = .85$) and motor impulsivity subscale ($\alpha = .85$) in the present study.

Personality Assessment Inventory (PAI)

Two specific subscales on the Personality Assessment Inventory (PAI; Morey, 1991) were used to assess levels of affective instability and traumatic stress – the Affective Instability (BOR-A) subscale of the Borderline Features scale and the Traumatic Stress (ARD-T) subscale of the Anxiety Related Disorders scale. Items on each subscale are rated on a 4-point scale (0= false, 1= slightly true, 2= mainly true, 3= very true), with higher scores reflecting greater areas of concern on a respective clinical feature. The BOR-A and ARD-T subscales have demonstrated good internal consistency and construct validity in forensic samples (Douglas et al., 2001; Edens, 2009; Edens & Ruiz, 2008; Haden & Shiva, 2009). The present study sample will only include participants whose PAI profiles were considered valid (configuration of INF, ICN, NIM, and PIM scales were valid); eight participants with invalid PAI profiles were excluded from the participant count and final data analysis.

The BOR-A subscale consists of 6-items assessing participant levels of emotional responsiveness, rapid mood changes, and poor emotional control (Morey, 2003). Significantly elevated BOR-A scores (scores above 70) indicate a person is prone to emotional reactivity to external stimuli and experiences, which is often manifested in rapid and extreme mood shifts that fluctuate suddenly, as well as difficulty controlling negative emotion expression (Morey, 2003). A total of 50 participants (36.2%) had statistically significant affective instability scores in the current study. An example of an item on the BOR-A subscale is “My mood can shift quite

suddenly” (see Appendix C). Internal consistency scores were good for the affective instability subscale ($\alpha = .73$) in the present study.

The ARD-T subscale consists of 8-items assessing the presence of trauma symptoms such as intrusive nightmares about a traumatic event, sudden anxiety reactions, and feeling permanently changed or damaged as a result of a traumatic event (Morey, 2003). Significantly elevated ARD-T scores (scores above 70) indicate that a person has experienced a traumatic event that causes continued preoccupation, distress, and recurrent anxiety (Morey, 2003). A total of 86 participants (62.3%) had clinically significant trauma symptom scores in the current study. An example of an item on the ARD-T subscale is “I keep reliving something horrible that happened to me” (see Appendix D). Internal consistency scores were good for the trauma symptoms subscale ($\alpha = .84$) in the present study.

Data Analyses

All data analyses were conducted on SPSS version 28. Correlational analyses were conducted to examine the relationships between participant levels of total impulsivity, motor impulsivity, affective instability, trauma symptoms, and history of physical and/or sexual abuse. Preacher and Hayes’ model for assessing mediation using bootstrapping techniques were used to investigate overall relationships between variables and previously stated hypotheses. Mediation analyses were assessed in six separate parallel multiple mediation models via Model 4 add-in on PROCESS macro for SPSS (Hayes, 2013). Mediation models examined the effects of (1) physical abuse, (2) sexual abuse, and (3) the composite of physical/sexual abuse on total impulsivity through affective instability and trauma symptoms (see Figures 1, 2, 3 below), as well as the effects of (4) physical abuse, (5) sexual abuse, and (6) physical/sexual abuse on motor impulsivity through affective instability and trauma symptoms (see Figures 4, 5, 6 below).

Bootstrapping methods were used since this nonparametric approach allows simultaneous testing of various mediation models without increasing the risk of Type 1 error and does not impose normal distributional assumptions. Default setting of 5,000 samples for bootstrapping procedures and 95% bias adjusted confidence intervals was used to determine the significance of the indirect effects. Confidence intervals that do not contain zero suggest that the observed indirect effect is significant.

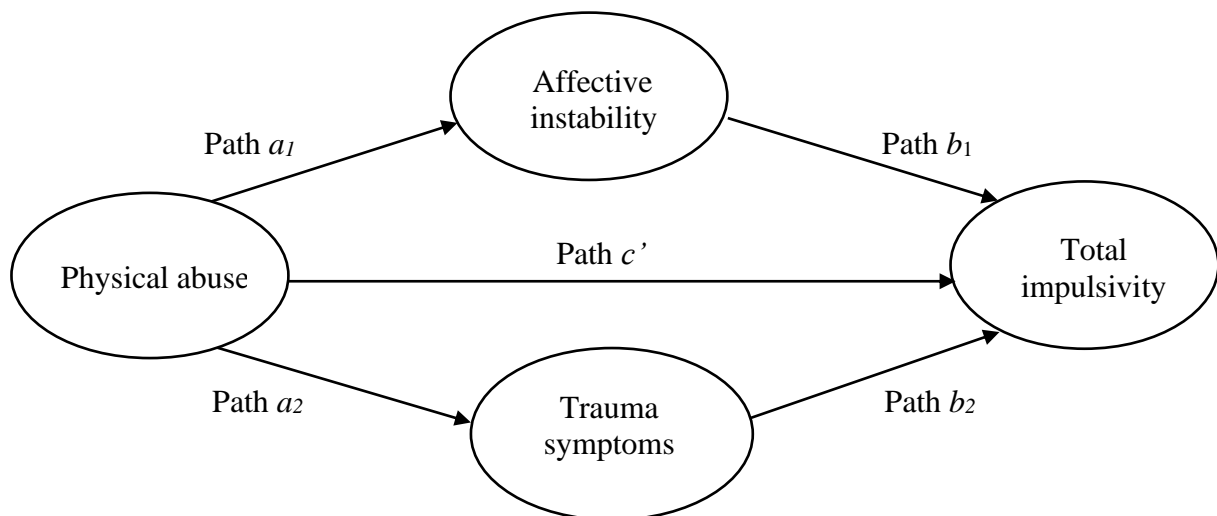


Figure 1. Path Model for Model 1. Paths a_1 and a_2 represent the direct effect of physical abuse on the mediators; Paths b_1 and b_2 represent the direct effect of the mediators on total impulsivity; Path c' is the direct effect of physical abuse on total impulsivity controlling for both mediators.

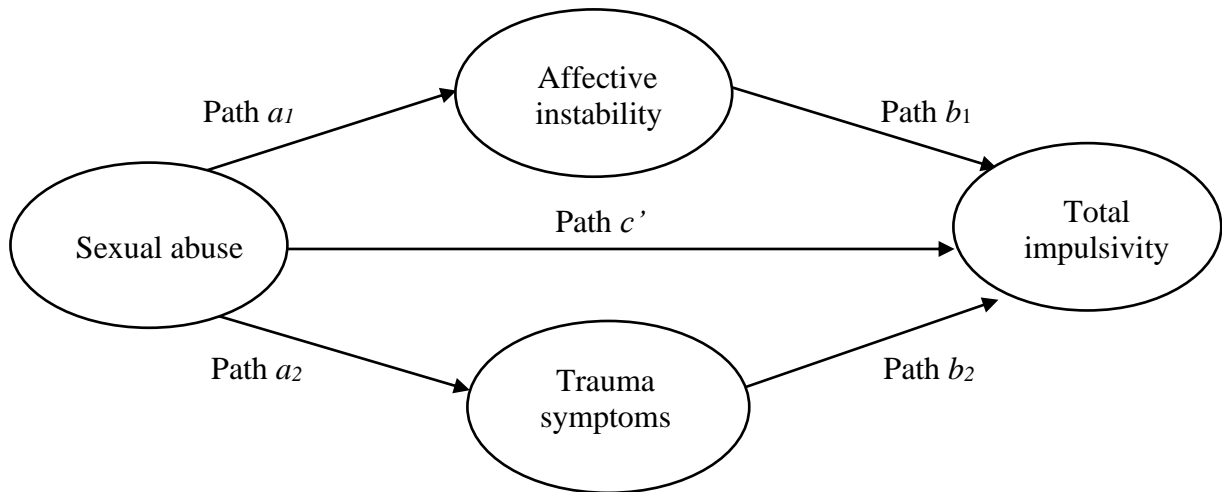


Figure 2. Path Model for Model 2. Paths a_1 and a_2 represent the direct effect of sexual abuse on the mediators; Paths b_1 and b_2 represent the direct effect of the mediators on total impulsivity; Path c' is the direct effect of sexual abuse on total impulsivity controlling for both mediators.

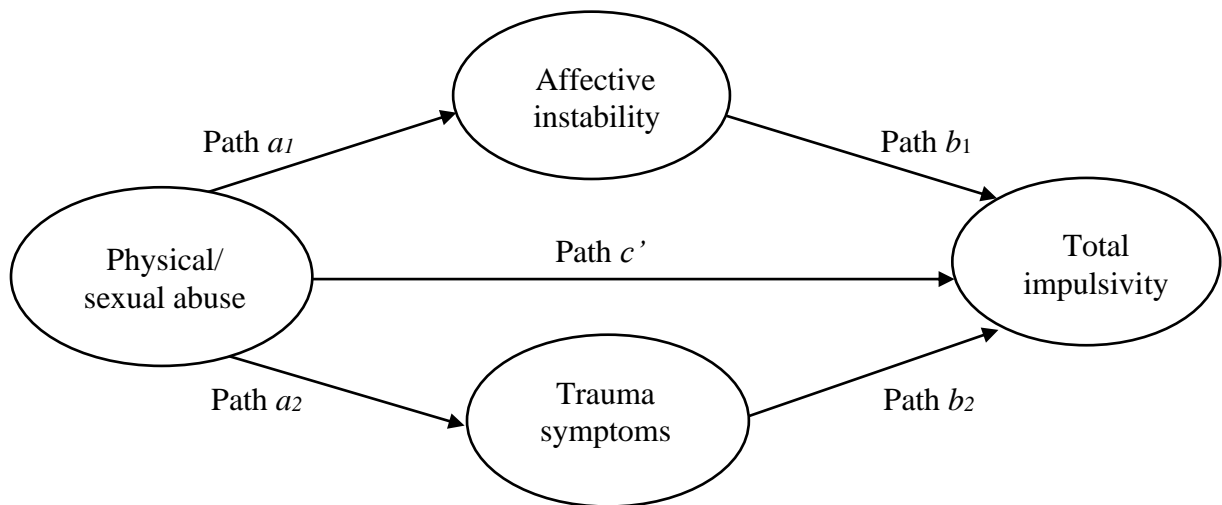


Figure 3. Path Model for Model 3. Paths a_1 and a_2 represent the direct effect of abuse on the mediators for all participants endorsing a history of physical/sexual abuse; Paths b_1 and b_2 represent the direct effect of the mediators on total impulsivity; Path c' is the direct effect of physical and/or sexual abuse on total impulsivity controlling for both mediators.

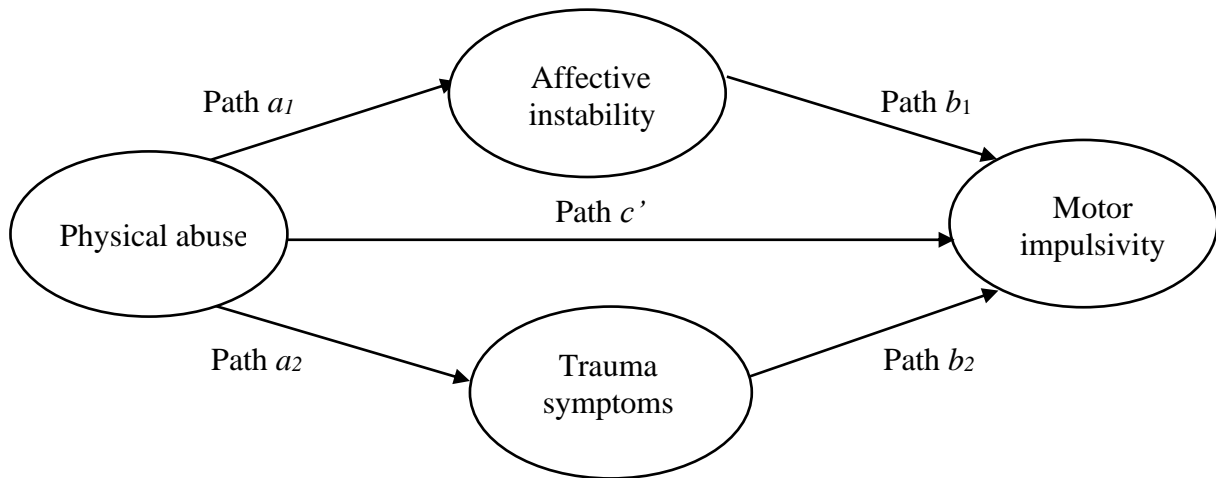


Figure 4. Path Model for Model 4. Paths a_1 and a_2 represent the direct effect of physical abuse on the mediators; Paths b_1 and b_2 represent the direct effect of the mediators on motor impulsivity; Path c' is the direct effect of physical abuse on motor impulsivity controlling for both mediators.

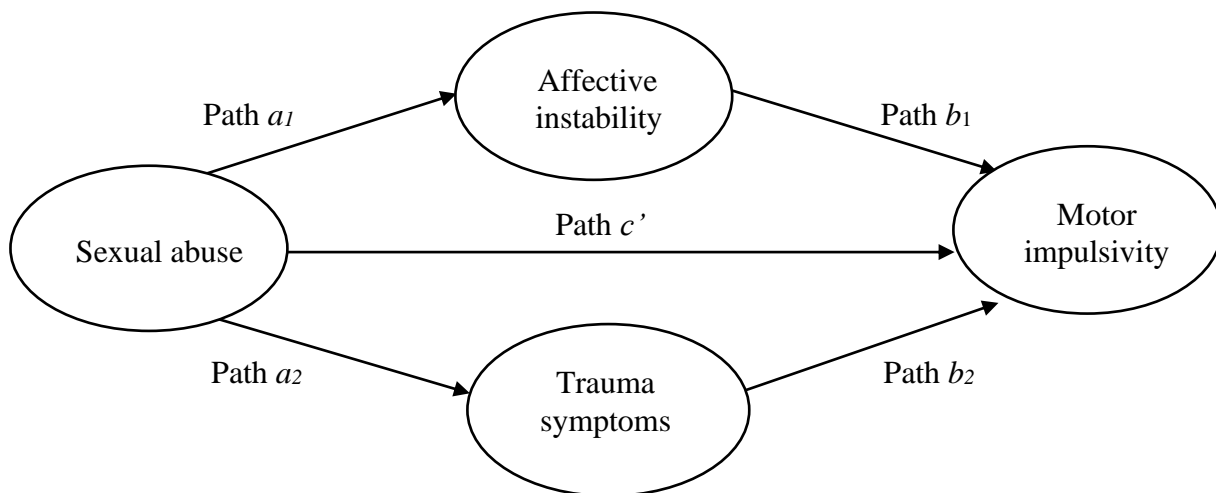


Figure 5. Path Model for Model 5. Paths a_1 and a_2 represent the direct effect of sexual abuse on the mediators; Paths b_1 and b_2 represent the direct effect of the mediators on motor impulsivity; Path c' is the direct effect of sexual abuse on motor impulsivity controlling for both mediators.

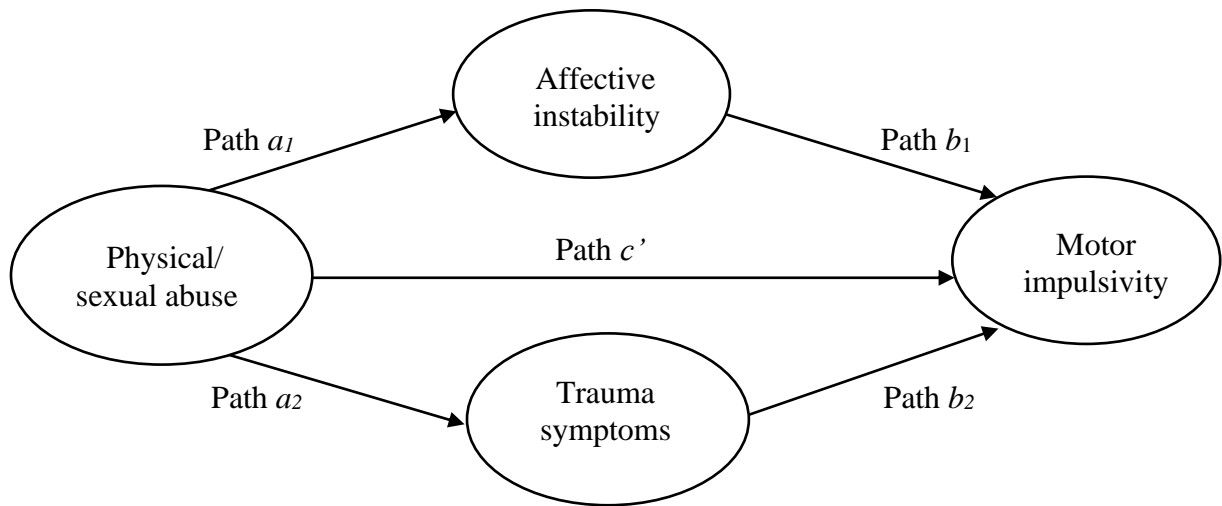


Figure 6. Path Model for Model 6. Paths a_1 and a_2 represent the direct effect of abuse on the mediators for all participants endorsing a history of physical/sexual abuse; Paths b_1 and b_2 represent the direct effect of the mediators on motor impulsivity; Path c' is the direct effect of physical/sexual abuse on motor impulsivity controlling for both mediators.

CHAPTER 4: RESULTS

Hypothesis 1. Correlational analyses provided support for the hypothesis that affective instability, trauma symptoms, total impulsivity, and motor impulsivity would be significantly correlated with history of physical abuse, history of sexual abuse, and composite physical/sexual abuse. As shown in Table 2, physical abuse was significantly positively correlated with affective instability ($r = .35, p < .001$), trauma symptoms ($r = .35, p < .001$), total impulsivity ($r = .30, p < .001$), and motor impulsivity ($r = .34, p < .001$). Sexual abuse was significantly positively correlated with affective instability ($r = .20, p = .020$), trauma symptoms ($r = .25, p = .005$), total impulsivity ($r = .19, p = .027$), and motor impulsivity ($r = .29, p < .001$). The composite physical/sexual abuse variable was significantly positively correlated with affective instability ($r = .33, p < .001$), trauma symptoms ($r = .35, p < .001$), total impulsivity ($r = .31, p < .001$), and motor impulsivity ($r = .40, p < .001$).

Support was yielded for the hypothesis that affective instability and trauma symptoms would be significantly correlated with both impulsivity variables. As shown in Table 2, affective instability was significantly positively correlated with total impulsivity ($r = .69, p < .001$) and motor impulsivity ($r = .62, p < .001$); trauma symptoms were also significantly positively correlated with total impulsivity ($r = .57, p < .001$) and motor impulsivity ($r = .53, p < .001$).

Hypothesis 2a. To examine the hypothesis that affective instability and trauma symptoms would at least partially mediate the relationship between total impulsivity and (1) physical abuse, (2) sexual abuse, and (3) a composite of physical/sexual abuse, three parallel multiple mediation analyses were conducted using SPSS version 28 via PROCESS Macro Model 4.

(1) The first mediation model examined the effects of physical abuse history on total impulsivity through affective instability and trauma symptoms. Results based on 5,000 bootstrap

samples indicated that the total effect of physical abuse, affective instability, and trauma symptoms on total impulsivity was significant ($c = 8.100, p = .001, 95\% \text{ BC CI } [3.560, 12.641]$), with the full model accounting for nearly half the variance in total impulsivity ($R^2 = .493$). The direct effect was no longer significant when affective instability and trauma symptoms were included in the model ($c' = 1.418, p = .449, 95\% \text{ BC CI } [-2.274, 5.109]$). The total indirect effect of model 1 was significant ($a_1b_1 + a_2b_2 = 6.683, 95\% \text{ BC CI } [3.745, 9.591]$). Evidence that the total indirect effect was significant and that physical abuse did not have a significant direct effect on total impulsivity independent of its effect on affective instability and trauma symptoms is consistent with the presence of full mediation

Examination of the specific indirect effects of affective instability and trauma symptoms demonstrated that the indirect effects of physical abuse on total impulsivity through affective instability ($a_1b_1 = 5.155$) and trauma symptoms ($a_2b_2 = 1.528$) were both significant. History of physical abuse victimization was related to greater levels of affective instability ($a_1 = 9.807$) and trauma symptoms ($a_2 = 11.281$). Affective instability was subsequently related to higher levels of total impulsivity ($b_1 = .526$).

(2) The second model examined the mediating roles of affective instability and trauma symptoms in the relationship between sexual abuse history and total impulsivity. Results based on 5,000 bootstrap samples indicated that the total effect of sexual abuse, affective instability, and trauma symptoms on total impulsivity was significant ($c = 6.278, p = .027, 95\% \text{ BC CI } [.726, 11.830]$), with the full model accounting for nearly half the variance in total impulsivity ($R^2 = .490$). The direct effect was no longer significant when affective instability and trauma symptoms were included in the model ($c' = 1.147, p = .591, 95\% \text{ BC CI } [-3.062, 5.356]$). The total indirect effect of model 2 was significant ($a_1b_1 + a_2b_2 = 5.131, 95\% \text{ BC CI } [1.562, 8.546]$).

Evidence that the total indirect effect was significant and that sexual abuse did not have a significant direct effect on total impulsivity independent of its effect on affective instability and trauma symptoms is consistent with the presence of full mediation.

Examination of the specific indirect effects of the two mediators showed that the indirect effects of sexual abuse on total impulsivity through affective instability ($a_1b_1 = 3.546$) and trauma symptoms ($a_2b_2 = 1.584$) were both significant. History of sexual abuse was associated with greater levels of affective instability ($a_1 = 6.836$) and trauma symptoms ($a_2 = 9.512$), which were subsequently related to higher levels of total impulsivity ($b_1 = .519$ and $b_2 = .167$ respectively).

(3) The third mediation model examined the effects of affective instability and trauma symptoms in the relationship between the composite of physical/sexual abuse and total impulsivity. Results based on 5,000 bootstrap samples indicated that the total effect of physical/sexual abuse, affective instability, and trauma symptoms on total impulsivity was significant ($c = 5.675$, $p = .001$, 95% BC CI [2.507, 8.842]), with the full model accounting for nearly half of the variance in total impulsivity ($R^2 = .494$). The direct effect was no longer significant when affective instability and trauma symptoms were included in the model ($c' = 1.311$, $p = .315$, 95% BC CI [-1.262, 3.884]). The total indirect effect of model 3 was significant ($a_1b_1 + a_2b_2 = 4.364$, 95% BC CI [2.344, 6.399]). Evidence that the total indirect effect was significant and that the composite of physical/sexual abuse did not have a significant direct effect on total impulsivity independent of its effect on affective instability and trauma symptoms is consistent with the presence of full mediation.

Examination of the specific indirect effects of affective instability and trauma symptoms showed that the indirect effects of physical/sexual abuse on motor total impulsivity through

affective instability ($a_1b_1 = 3.285$) and trauma symptoms ($a_2b_2 = 1.079$) were both significant. Participants endorsing a history of both physical and sexual abuse victimization exhibited greater levels of affective instability ($a_1 = 6.283$) and trauma symptoms ($a_2 = 7.791$). Affective instability was subsequently related to higher levels of total impulsivity ($b_1 = .523$).

Hypothesis 2b. Three additional parallel multiple mediation analyses were conducted on SPSS via PROCESS Macro Model 4 to examine the hypothesis that affective instability and trauma symptoms at least partially mediated the relationship between (4) physical abuse, (5) sexual abuse, (6) the composite of physical/sexual abuse and motor impulsivity.

(4) The fourth mediation model examined the mediating roles of affective instability and trauma symptoms in the relationship between physical abuse and motor impulsivity. Results based on 5,000 bootstrap samples indicated that the total effect of physical abuse, affective instability, and trauma symptoms on motor impulsivity was significant ($c = 5.343$, $p = .000$, 95% BC CI [2.677, 8.008]), with nearly half of the variance in motor impulsivity being accounted for in the full model ($R^2 = .412$). The direct effect was no longer significant when affective instability and trauma symptoms were included in the model ($c' = 1.864$, $p = .119$, 95% BC CI [-.484, 4.212]). The total indirect effect of model 4 was significant ($a_1b_1 + a_2b_2 = 3.479$, 95% BC CI [1.864, 5.194]). Evidence that the total indirect effect was significant and that physical abuse did not have a significant direct effect on motor impulsivity independent of its effect on affective instability and trauma symptoms is consistent with the presence of full mediation.

Examination of the specific indirect effects of the two mediators demonstrated that the indirect effect of physical abuse on motor impulsivity through affective instability was significant when controlling for the indirect effect of trauma symptoms ($a_1b_1 = 2.616$, 95% CI [.951, 4.553]), but the indirect effect through trauma symptoms was not significant when

controlling for affective instability ($a_2b_2 = 0.863$, 95% CI [-.223, 2.289]). Thus, affective instability appeared to mediate the relationship between physical abuse and motor impulsivity. Additionally, study results show that participants who endorsed having a history of physical abuse exhibited greater levels of affective instability ($a_1 = 9.807$) and trauma symptoms ($a_2 = 11.281$). Affective instability was subsequently related to significantly higher levels of motor impulsivity ($b_1 = .267$).

(5) Results of the fifth mediation model based on 5,000 bootstrap samples indicated that the total effect of sexual abuse, affective instability, and trauma symptoms on motor impulsivity was significant ($c = 5.746$, $p = .001$, 95% BC CI [2.461, 9.031]), with the full model explaining nearly half of the variance in motor impulsivity ($R^2 = .426$). The direct effect of sexual abuse on motor impulsivity remained significant but was reduced when affective instability and trauma symptoms were included in the model ($c' = 3.048$, $p = .028$, 95% BC CI [.340, 5.757]). The total indirect effect of model 5 was significant ($a_1b_1 + a_2b_2 = 2.698$, 95% BC CI [0.761, 4.499]). Evidence that the total indirect effect was significant and that the direct effect of sexual abuse diminished when affective instability and trauma symptoms were included in the model is consistent with the presence of partial mediation.

The specific indirect effect of sexual abuse on motor impulsivity through affective instability was significant when controlling for trauma symptoms ($a_1b_1 = 1.884$, 95% CI [.449, 3.516]). However, the indirect effect through trauma symptoms was not significant when controlling for affective instability as its confidence interval range included zero ($a_2b_2 = .814$, 95% CI [-.163, 2.191]). These results indicate that affective instability partially mediated the relationship between sexual abuse and motor impulsivity. History of sexual abuse was associated with greater levels of affective instability ($a_1 = 6.836$) and trauma symptoms ($a_2 = 9.512$).

Greater affective instability was subsequently related to higher levels of motor impulsivity ($b_1 = .276$).

(6) Analysis of the sixth mediation model showed that the total effect of composite physical/sexual abuse, affective instability, and trauma symptoms on motor impulsivity was significant ($c = 4.325, p = .000, 95\% \text{ BC CI } [2.508, 6.142]$), with the full model accounting for nearly half the variance in motor impulsivity scores ($R^2 = .440$). The direct effect of physical/sexual abuse on motor impulsivity remained significant but was reduced when affective instability and trauma symptoms were included in the model ($c' = 2.137, p = .010, 95\% \text{ BC CI } [.530, 3.744]$). The total indirect effect of model 6 was significant ($a_1b_1 + a_2b_2 = 2.188, 95\% \text{ BC CI } [1.128, 3.282]$). Evidence that the total indirect effect was significant and that the direct effect of the composite of physical/sexual abuse diminished when affective instability and trauma symptoms were included in the model is consistent with the presence of partial mediation.

Examination of the specific indirect effects of affective instability and trauma symptoms on the relationship between composite physical/sexual abuse and motor impulsivity indicated that the indirect effect through affective instability remained significantly when controlling for trauma symptoms ($a_1b_1 = 1.643, 95\% \text{ BC CI } [.608, 2.818]$). However, the indirect effect through trauma symptoms was no longer significant when controlling for affective instability ($a_2b_2 = .545, 95\% \text{ BC CI } [-.220, 1.506]$). These results indicate that affective instability partially mediated the relationship between physical/sexual abuse and motor impulsivity. Abuse victimization was associated with greater levels of affective instability ($a_1 = 6.283$) and trauma symptoms ($a_2 = 7.791$). Affective instability was subsequently related to significantly higher levels of motor impulsivity ($b_1 = .261$).

CHAPTER 5: DISCUSSION

As predicted, physical abuse, sexual abuse, and composite physical/sexual abuse were significantly associated with affective instability, traumatic stress symptoms, and both total and motor impulsivity in the present sample of incarcerated males. These findings provide preliminary support that incarcerated males with histories of physical and/or sexual abuse victimization are more likely to 1) have difficulties controlling rapid and intense changes in affective states; and 2) experience trauma symptoms such as changes in arousal and reactivity, intrusive nightmares and thoughts about past distressing events, and feeling permanently changed or damaged as a result of traumatic events. Further, incarcerated men with histories of abuse victimization also appear to be more likely to respond rashly to internal and external stimuli and have difficulty controlling urges to act without forethought.

Also consistent with hypotheses, affective instability and traumatic stress symptoms were significantly associated with both total impulsivity and motor impulsivity. Thus, the tendency to respond rashly and have difficulty controlling impulsive urges appears to be 1) positively related to incarcerated individuals' difficulties controlling and regulating changes in their affective state and 2) positively related to the men's experience of cognitive and emotional trauma symptoms.

Mechanisms Underlying the Relationship of Abuse to Total Impulsivity

As predicted, affective instability and trauma symptoms fully mediated the relationship of physical and/or sexual abuse to general impulsivity in Models 1-3. This finding was consistent when physical and sexual abuse were entered separately, as well as when they were combined into a single composite abuse variable. In all three models, nearly half of the variability in total impulsivity in incarcerated males with abuse victimization histories was attributable to affective instability and trauma symptoms. Across Models 1-3, there was little difference in the mediating

effects of these variables whether abuse was examined separately as physical or sexual abuse or together as a composite variable.

Thus, results provide preliminary support for the significant mediating roles of affective instability and trauma symptoms in predicting abuse survivor's overall trait impulsivity. These findings suggest that both affective instability and trauma symptoms may have important, unique roles in predicting total impulse control abilities in male survivors of physical and/or sexual abuse.

Trauma-exposed individuals may have limited access to emotional regulatory means of controlling affective arousal when distressed. Such limited access to effective methods of self-regulation leaves these individuals more vulnerable to act impulsively (Baumeister, 2003). Neurological evidence of altered bodily reaction to stressful stimuli in abuse survivors underscores the way that abuse disturbs negative feedback inhibition (Perry et al., 2005; Chivers-Wilson, 2006). These changes may increase one's physiological and emotional responses to negative emotions and trauma-related cues, and ultimately lead to impulsive fear reactions (Kim & Choi, 2020; Weiss et al., 2013). Results yielded in the present study provide additional preliminary support for the impact of changes in affective states and trauma symptoms on impulse control outcomes in incarcerated males.

Mechanisms Underlying the Relationship of Abuse to Motor Impulsivity

Given evidence of the unique role of behavioral impulsivity in criminal offending behaviors (Chapple & Johnson, 2007; Jones & Lynam, 2009a), the relationships between motor impulsivity and other variables of interest were examined separately from the total measure of impulsivity. Nearly half of the variability in motor impulsivity was attributable to affective instability, trauma symptoms, and abuse victimization, as demonstrated by study results for

Models 4-6 examining the impacts of physical, sexual, and physical/sexual abuse on motor impulsivity outcomes. As predicted for the motor impulsivity models, affective instability was shown to at least partially mediate the relationship between abuse victimization and motor impulsivity in all models. In contrast to the findings for total impulsivity, results suggest that trauma symptoms no longer significantly predicted motor impulsivity when controlling for affective instability in the mediation models. Thus, the present findings suggest that trauma symptoms may be related to cognitive facets of impulsiveness (included in the total impulsivity score) more so than behavioral facets of impulsiveness (as measured by the motor impulsivity factor). This is consistent with prior research findings of cognitive impulsivity, but not motor impulsivity, having significant associations with PTSD severity in non-forensic samples (Swick et al., 2013; Walker et al., 2019).

Regarding specific types of abuse, findings of Model 4 supported the prediction that affective instability fully mediates the relationship between physical abuse and motor impulsivity. Contrary to prediction, trauma symptoms did not have a mediating effect on the full model when affective instability was controlled. In addition, results of mediation Models 5 and 6 show that affective instability partially mediated the relationship between sexual abuse and composite physical/sexual abuse to motor impulsivity. Similar to Model 4, trauma symptoms did not have a unique mediating role in the relationship of sexual and composite physical/sexual abuse to motor impulsivity in the full model. Thus, partial mediation for trauma symptoms in Models 5 and 6 was not supported.

In sum, results of the three mediation models examining predictors of motor impulsivity provide preliminary evidence that affective instability plays a predictive role in behavioral (motor) impulsivity for incarcerated male survivors of abuse. The fact that trauma symptoms

failed to have a significant mediating effect on these relationship above and beyond the effect of affective instability suggests that one's ability to regulate changes in their affective states significantly accounts for the impact of trauma symptomatology on motor impulse control in survivors of abuse. Although trauma symptoms have been shown to significantly predict increased motor impulsivity levels in the present and past research studies (Contractor et al., 2016; Kim & Choi, 2020; Weiss et al., 2014), this association may be due to affective arousal and reactivity components of trauma symptomatology. This is congruent with previous research conducted in non-forensic populations, which found that individuals with PTSD have increased symptoms of affective instability and reactivity (Kashdan et al., 2006; Newton & Ho, 2008; Schoenieber et al., 2018), as well as a study that found that emotion dysregulation fully mediated the relationship between PTSD and impulsivity in a sample of patients with substance-use disorders (Weiss et al., 2012). In this way, it may not be trauma symptoms themselves that result in motor impulsiveness in abuse survivors, but instead it may be the impact of trauma symptomatology on the functioning of the emotional regulatory systems.

Results of the present study are consistent with the notion that trauma symptoms and affective instability promotes taking impulsive action as a means of emotion regulation to cope with affective distress in survivors of abuse. When emotionally aroused, survivors with trauma symptomatology may be prone to interpreting stimuli as potentially threatening or harmful (Weinshenker & Siegel, 2002), consequently increasing affective distress and the desire to combat felt distress through seemingly protective action. In this way, motor impulsivity may be understood as a behavioral consequence of oscillations in intense affect. Current study evidence of trauma symptoms impacting motor impulsivity through its effect on affective instability in abuse survivors is consistent with an affective instability model of the abuse-to-

prison pipeline. Accordingly, trauma symptomatology following abuse victimization may increase susceptibility to affective instability difficulties which exacerbates the risk of impulsive criminal offending behaviors (Aebi et al., 2014; Poythress et al., 2006).

Current very preliminary results also suggest that the impact of affective instability on motor impulsivity may differ according to abuse category. This is exhibited in findings of affective instability having a full mediating role for survivors of physical abuse in the model, while having a partial mediating role for survivors of sexual abuse or both types of abuse. Future research should be conducted in larger samples to further explore potential differences in the mediating impact of affective instability on motor impulsivity across abuse victimization types.

Limitations and Future Directions

The current study has several limitations. Like many studies on abuse sequelae, the cross-sectional design of the current study limits the interpretations that can be made from its results. Although the relationships between variables of interest were supported, the temporal precedence cannot be established; thus, “reverse causation” cannot be ruled out. For example, instead of abuse leading to impulse control deficits, one could argue that impulsivity may contribute to risk of abuse victimization. Longitudinal research should be conducted to assess for the temporal sequence of the interactions between abuse victimization, affective instability, trauma symptoms, and impulsivity.

The methodology used in the present study for assessing abuse history is also not without limitations. History of physical and sexual abuse was indicated as present or absent based on binary participant reporting during their forensic inpatient stay, thus precluding information such as number of abuse episodes, time period of abuse, etc. Also, only a subsample of the total sample endorsed or denied the presence of abuse victimization, which calls into question whether

the percentage of sample that spoke on the topic of abuse was different than the percentage that did not. The accuracy of the retrospective measure of abuse history used in the current study may be affected by recall bias and hesitancy to report abuse victimization due to stigma or other factors. Additionally, data on abuse experiences were not validated by documented reports of childhood abuse or collateral interviews, which would have provided further validation of abuse experience recall. Future studies would benefit from the utilization of a more comprehensive measurement of abuse history, such as The Childhood Trauma Questionnaire (CTQ; Bernstein and Fink, 1998) to provide a fuller, more detailed depiction of participant abuse histories.

Additionally, the use of self-report measures in the assessment of affective instability, trauma symptoms, and impulsivity present a further limitation. Future studies would benefit from utilizing multiple methods of assessing these constructs to provide a richer assessment and maximize the validity of findings (McDonald, 2008).

The present study did not measure criminal offending behaviors specifically, therefore the present findings cannot be extrapolated to criminal offending propensity. The inclusion of a criminal offending measure in future research regarding the present topic would be advantageous to gain a better understanding of the impact of abuse, affective instability, trauma symptoms, and impulsivity on criminal offending propensity.

In addition, the use of a psychiatric inpatient sample of incarcerated men limits generalizability to incarcerated men who did not receive psychiatric care. Thus, future research examining the relationship between abuse victimization and impulsivity in incarcerated males should be conducted with a general sample of incarcerated males. Research is also needed to assess the relationship of these variables on incarcerated women.

Despite such limitations, strengths of the current study include the use of a diverse sample of participants who are often overrepresented in incarcerated populations and underrepresented in research: men of color. Given the impact of race-related stress and discrimination on the lived experiences of persons of color, future research conducted on incarcerated men of color would benefit from including measures on race-related trauma, such as the Racial Trauma Scale (Williams et al., 2022), to account for the experience of trauma symptoms due to racism and discrimination.

The current study provides preliminary insight into the relationship between abuse victimization and impulsivity in incarcerated men. Further support for these results may help researchers, clinicians, and the criminal justice system better understand the processes through which abuse victimization is associated with heightened impulsive tendencies that may contribute to offending behaviors and reoffending potential. Clinically, the present findings suggest that interventions targeting skills for coping with affective distress by reducing affective reactivity may be especially suitable for incarcerated men with abuse-related trauma symptoms. Specifically, fostering affective awareness and emotion regulation techniques may help justice-system involved males with abuse histories learn to adaptively cope with unpleasant emotions and trauma symptomatology in the moment—rather than acting on impulsive urges to reduce it. Targeting traumatic responding and impulsivity through adaptive affect regulation is consistent with stage models of therapy (i.e. Dialectical Behavioral Therapy) which target the acquisition of emotion regulation skills prior to addressing trauma symptomatology (Mattei & Sposato, 2020).

Conclusion

Research to date has identified abuse victimization as a risk factor for impulsivity and criminal offending behaviors in male populations (Dargis et al., 2016; Krischer & Sevecke,

2008; Poythress et al., 2006). Nevertheless, there remains gaps in the knowledge about the specific psychological processes through which physical and/or sexual abuse victimization may contribute to impulsive tendencies in male forensic populations. This is especially important given the overrepresentation of men and abuse survivors in incarcerated populations (Bodkin et al., 2019; Dalsklev et al., 2021; Stephan, 2008). The aim of the present study was to examine the psychological sequelae of abuse victimization in incarcerated men to improve understanding of the psychological processes that may underlie criminal offending propensity.

Results of the current pilot study suggest that the effects of physical and/or sexual abuse on overall impulsivity in incarcerated males can be explained by affective instability and trauma symptoms. However, when investigating the relationship of abuse to motor impulsivity—the type of impulsivity most related to criminal offending—the results were more complex. Findings suggest that the relationship of physical abuse to motor impulsivity was fully mediated when affective instability and trauma symptoms were entered into the model, whereas the relationships of sexual and combined physical/sexual abuse to motor impulsivity were only partially mediated. In addition, once affective instability was controlled, trauma symptoms no longer played a significant mediating role in the relationship of abuse to motor impulsivity in any of the models—suggesting that trauma symptomology may largely affect motor impulsivity in abuse victims through its impact on affect instability. In sum, the present preliminary findings suggest that affective instability and trauma symptoms may play a role in exacerbating impulsivity outcomes in male incarcerated survivors of abuse.

Table 1
 Number and percentile of demographic characteristics of participants

Demographic Characteristics		Study 1
Age (years) ^a		31.68 ± 10.85
Race		
	Black/African American	79 (57.2%)
	Hispanic/Latino	30 (21.7%)
	White	20 (14.5%)
	Asian	3 (2.2%)
	Bi/multi-racial	3 (2.2%)
	Other	3 (2.2%)
Physical abuse		
	Endorsed	59 (42.8%)
	Denied	66 (47.8%)
	Unknown	13 (9.4%)
Sexual abuse		
	Endorsed	28 (20.3%)
	Denied	102
	Unknown	(73.9%)
		8 (5.8%)
Composite abuse		
	One type	
	Both types	43 (31.2%)
	None	19 (13.8%)
	Unknown	59 (42.8%)
		17 (12.2%)

^a = Mean ± standard deviation

Table 2
Bivariate correlation coefficients, means, and standard deviations of all study variables.

Variable	M (SD)	1	2	3	4	5	6	7
1. Physical abuse		1	.31**	.84**	.35**	.35**	.30**	.34**
2. Sexual abuse			1	.76**	.20*	.25**	.19*	.29**
3. Composite abuse				1	.33**	.35**	.31**	.40**
4. Affective instability	64.41 (13.72)				1	.69**	.69**	.62**
5. Trauma symptoms	72.49 (16.23)					1	.57**	.53**
6. Total impulsivity	57.79 (13.21)						1	.87**
7. Motor impulsivity	27.74 (7.99)							1

** $p < 0.01$

* $p < 0.05$

Table 3
Results of PROCESS parallel multiple mediation analysis for Model 1

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Physical abuse	Affective instability	9.81*** (2.38)	Total impulsivity	0.53*** (.09)	8.10*** (2.29)	1.42 (1.86)	5.15 (1.48) [2.34, 8.13]	0.38 (.11)
	Trauma symptoms	11.28*** (2.77)		0.13 (.07)			1.53 (0.87) [0.15, 3.44]	.11 (.06)

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 4
Results of PROCESS parallel multiple mediation analysis for Model 2

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Sexual abuse	Affective Instability	6.84* (2.89)	Total impulsivity	0.52*** (.09)	6.28* (2.81)	1.15 (2.13)	3.55 (1.42) [0.71, 6.45]	.026 (.10)
	Trauma Symptoms	9.52** (3.32)		0.17* (.07)				

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 5
Results of PROCESS parallel multiple mediation analysis for Model 3

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Composite abuse	Affective Instability	6.28*** (1.66)	Total impulsivity	0.52*** (.09)	5.67*** (1.60)	1.31 (1.30)	3.28 (.97) [1.55, 5.30]	0.18 (.05)
	Trauma Symptoms	7.79*** (1.90)		0.14 (.08)				

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 6
Results of PROCESS parallel multiple mediation analysis for Model 4

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Physical abuse	Affective Instability	9.81*** (.19)	Motor impulsivity	0.27*** (.05)	5.34*** (1.35)	1.86 (1.19)	2.62 (.94) [0.95, 4.55]	0.33 (.12)
	Trauma Symptoms	11.28*** (2.77)		0.08 (.05)				

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 7
Results of PROCESS parallel multiple mediation analysis for Model 5

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Sexual abuse	Affective Instability	6.84* (2.89)	Motor impulsivity	0.28*** (.05)	5.75*** (1.66)	3.05* (.1.37)	1.88 (.79) [0.45, 3.52]	0.23 (.10)
	Trauma Symptoms	9.51** (3.32)		0.09 (.05)				

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 8
Results of PROCESS parallel multiple mediation analysis for Model 6

IV	Mediating Variables (M)	Effect of IV on M (SE)	DV	Effect of M on DV (SE)	Total effect (SE)	Direct effect (SE)	Indirect effects (SE) [CI lower, CI upper]	Effect size (SE)
Composite abuse	Affective Instability	6.28*** (1.66)	Motor impulsivity	0.26*** (.05)	4.32*** (.92)	2.14** (.81)	1.64 (.56) [0.61, 2.82]	0.15 (.05)
	Trauma Symptoms	7.79*** (1.90)		0.07 (.05)				

Note. **Bolded indirect effects are significant (confidence interval does not include zero).** Effect size= completely standardized indirect effect, a measure of effect size of the indirect effect (.01= small effect, .09= medium, .25= large; Preacher and Kelley, 2011).

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

**APPENDIX A: BARRATT IMPULSIVENESS SCALE-11 – TOTAL IMPULSIVITY
ITEMS**

BIS-11 – TOTAL

DIRECTIONS: People differ in the ways they act and think in different situations. This is a test to measure some of the ways in which you might act and think. Read each statement and put an X on the appropriate number on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly.

	1	2	3	4
	Rarely/Never	Occasionally	Often	Almost always/always
1. I plan tasks carefully.	1	2	3	4
2. I do things without thinking.	1	2	3	4
3. I make-up my mind quickly.	1	2	3	4
4. I am happy-go-lucky.	1	2	3	4
5. I don't "pay attention."	1	2	3	4
6. I have "racing" thoughts.	1	2	3	4
7. I plan trips well ahead of time.	1	2	3	4
8. I am self-controlled.	1	2	3	4
9. I concentrate easily.	1	2	3	4
10. I save regularly.	1	2	3	4
11. I "squirm" at plays or lectures.	1	2	3	4
12. I am a careful thinker.	1	2	3	4
13. I plan for job security.	1	2	3	4
14. I say things without thinking.	1	2	3	4
15. I like to think about complex problems.	1	2	3	4
16. I change jobs.	1	2	3	4
17. I act "on impulse."	1	2	3	4
18. I get easily bored when solving thought problems.	1	2	3	4
19. I act on the spur of the moment.	1	2	3	4
20. I am a steady thinker.	1	2	3	4
21. I change residences.	1	2	3	4
22. I buy things on impulse.	1	2	3	4
23. I can only think about one thing at a time.	1	2	3	4
24. I change hobbies.	1	2	3	4
25. I spend or charge more than I earn.	1	2	3	4
26. I often have extraneous thoughts when thinking.	1	2	3	4
27. I am more interested in the present than the future.	1	2	3	4
28. I am restless at the theater or lectures.	1	2	3	4
29. I like puzzles.	1	2	3	4
30. I am future oriented.	1	2	3	4

**APPENDIX B: BARRATT IMPULSIVENESS SCALE-11 – MOTOR IMPULSIVITY
ITEMS**

BIS-11 – MOTOR

DIRECTIONS: People differ in the ways they act and think in different situations. This is a test to measure some of the ways in which you might act and think. Read each statement and put an X on the appropriate number on the right side of this page. Do not spend too much time on any statement. Answer quickly and honestly.

	1	2	3	4
	Rarely/Never	Occasionally	Often	Almost always/always
2. I do things without thinking.	1	2	3	4
6. I have “racing” thoughts.	1	2	3	4
11. I “squirm” at plays or lectures.	1	2	3	4
14. I say things without thinking.	1	2	3	4
17. I act “on impulse.”	1	2	3	4
18. I get easily bored when solving thought problems.	1	2	3	4
19. I act on the spur of the moment.	1	2	3	4
21. I change residences.	1	2	3	4
22. I buy things on impulse.	1	2	3	4
25. I spend or charge more than I earn.	1	2	3	4
26. I often have extraneous thoughts when thinking.	1	2	3	4
28. I am restless at the theater or lectures.	1	2	3	4

**APPENDIX C: PERSONALITY ASSESSMENT INVENTORY- AFFECTIVE
INSTABILITY SUBSCALE (BOR-A)**

PAI – BOR-A

Directions: This booklet contains numbered statements. Read each statement and decide if it is an accurate statement about you. Mark your answer by filling in one of the circles on the answer sheet.

If the statement is *FALSE, NOT AT ALL TRUE*, fill in the F.

If the statement is *SLIGHTLY TRUE*, fill in the ST.

If the statement is *MAINLY TRUE*, fill in the MT.

If the statement is *VERY TRUE*, fill in the VT.

Give your own opinion of yourself. Be sure to answer every statement. **DO NOT ERASE**. If you need to change an answer, make an “X” through the incorrect answer and then fill in the correct circle. Do not write in this booklet.

- 14. My mood can shift quite suddenly.
- 54. My moods get quite intense.
- 94. My mood is very steady.
- 134. I have little control over my anger.
- 174. I’ve always been a pretty happy person.
- 214. I’ve had times when I was so mad I couldn’t do enough to express my anger.

**APPENDIX D: PERSONALITY ASSESSMENT INVENTORY- TRAUMATIC STRESS
SUBSCALE (ARD-T)**

PAI – ARD-T

Directions: This booklet contains numbered statements. Read each statement and decide if it is an accurate statement about you. Mark your answer by filling in one of the circles on the answer sheet.

If the statement is *FALSE, NOT AT ALL TRUE*, fill in the F.

If the statement is *SLIGHTLY TRUE*, fill in the ST.

If the statement is *MAINLY TRUE*, fill in the MT.

If the statement is *VERY TRUE*, fill in the VT.

Give your own opinion of yourself. Be sure to answer every statement. **DO NOT ERASE**. If you need to change an answer, make an “X” through the incorrect answer and then fill in the correct circle. Do not write in this booklet.

- 34. I keep reliving something terrible that happened to me.
- 74. Thoughts about my past often bother me while I’m thinking about something else.
- 114. I’ve been troubled by memories of a bad experience for a long time.
- 154. I can’t seem to get over something from my past.
- 194. I have had some horrible experiences that make me feel guilty.
- 234. I keep having nightmares about my past.
- 274. Since I had a very bad experience, I am no longer interested in some things that I used to enjoy.
- 314. I avoid certain things that bring back bad memories.

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