DISSERTATION

# CUMULATIVE TRAUMA AND AGGRESSION AMONG YOUTH IN SECURE RESIDENTIAL SETTINGS

Submitted by

Ashley M. Tunstall

School of Social Work

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Summer 2025

Doctoral Committee:

Advisor: Anne Williford

Tiffany Jones
Jamie Yoder
Nathaniel Riggs

# ABSTRACT

## CUMULATIVE TRAUMA AND AGGRESSION AMONG YOUTH IN SECURE RESIDENTIAL SETTINGS

This study examined the association between cumulative trauma exposures and physical aggression among youth in secure residential facilities in Colorado. Using a nonexperimental, quantitative design, administrative data from 1,001 youth (ages 13–20) were analyzed to identify trauma exposure profiles and assess their relationship with aggressive behavior. Grounded in General Strain Theory (GST), Bronfenbrenner's Bioecological Model, and Critical Race Theory (CRT), trauma exposures were measured with the UCLA PTSD Reaction Index–Version 5 and incidents of physical aggression were obtained from incident reports. Latent class analysis identified four distinct trauma profiles: (a) polyvictimization across community, interpersonal, and family domains; (b) polyvictimization in interpersonal and family domains; (c) high exposure to community violence and separation; and (d) lower trauma exposure. Logistic regression analyses indicated latent class membership was not significantly associated with physical aggression. Younger youths and Black youths had significantly higher odds of physical aggression. Consistent with CRT, the latter finding indicates the importance of examining how racialized trauma, structural racism, and systemic inequities contribute to patterns of aggressive behavior in secure residential settings.

*Keywords*: youth, secure residential setting, cumulative trauma, physical aggression

# ACKNOWLEDGEMENTS

This dissertation journey would not have been possible without the enduring patience and encouragement of my committee. Anne Williford, I am forever grateful to you for making this dream possible. You have been my advocate, mentor, and friend — believing in me, knowing when to push, and when to support. Tiffany Jones, your calm presence paired with direct, concise guidance has made me a better researcher. Thank you for helping me through the analyses with enduring patience and compassion. Nathaniel Riggs, thank you for bringing a prevention lens to the issues youth face in the criminal legal system; although this dissertation could not place prevention at the center, I hope to pursue a prevention-focused research agenda moving forward. Jamie Yoder, you have been a dedicated mentor, helping me connect the dots throughout the research process — I am grateful for your passion and commitment.

I also thank my first academic mentor and dear friend, Rex A. Wright, whose enthusiasm inspired a lifelong love of research. I cannot think about research design and complex issues without recalling what you graciously taught me 32 years ago. To Angela R. Gover, my second academic mentor and dear friend — thank you for opening my eyes to the complexities of applied research in the criminal legal system, for your generous collaboration, and for your steadfast support through difficult times. I extend sincere appreciation to my colleagues at the Colorado Department of Human Services, Office of Children, Youth & Families, and the Division of Youth Services. Al Estrada, for years you have given me space to develop my interests and encouraged me to persevere. Jadon Webb, you nudged me toward doctoral work when I needed it most and advocated for me with great spirit — without that, I would not have

applied to the program. Special thanks to Deborah Monaghan and Teresa Mayer for their unwavering belief in me.

I offer my deepest love and gratitude to Makara Tunstall-Runge, whose willingness to listen to more ideas than I can count have sustained me throughout this journey. Susan Keys, your 25 years of friendship have been a grounding force of hope. Ulla Duvall, you have been my friend, adopted mother, and tireless supporter. Jennifer Ellerbroek, you are always ready with laughter and heartfelt support. Thank you for believing in me. Alice Baer, you remind me of my strengths when I most need it. Debra Cady, you uplifted me through a multitude of co-working sessions, always ready with words of encouragement. Deborah Saint-Phard, rooftop chats and shared meals during writing marathons were lifesavers. Hope Errico Wisneski, you always show up exactly when I need you. Milissa Hicks, through guiding my art practice, you provided the scaffolding I needed to finish this work — my foundation is stronger for it. Neill Archer Roan, your editing skills helped craft the most important paragraph in this document, the dedication.

Daisy, you witnessed it all and were my best companion and friend throughout this strenuous journey; you should be the first dog in history to earn an honorary doctorate. I have missed you deeply since your passing in late March. I also extend a heartfelt thank you to Dr. Joseph A. Benamati. Your life's work on behalf of vulnerable children and youth inspired me. I am proud to have been your friend and am eternally grateful for your wisdom. Rest in peace.

# DEDICATION

This dissertation is lovingly dedicated to my daughter, Makara Nicolette Tunstall-Runge. While navigating the joys and challenges of life, you have been my unwavering source of inspiration. Every page written is evidence of the belief I hope you hold—that dreams, no matter how distant, are always within reach, and that the passage of time is but a minor detail. You are my heart's compass, guiding me with your laughter, curiosity, and strength. This achievement is not just mine but ours, for in striving to show you the boundless potential of our dreams, I have found my own. With persistence, passion, and resilience, dreams do come true, and never forget, when you get the choice to sit it out or dance, I hope you dance.

TABLE OF CONTENTS

LIST OF TABLES

# CHAPTER 1

## INTRODUCTION

The number of youths involved in the criminal legal system (CLS) in the United States has declined significantly over the last four decades (Puzzanchera, 2021). Despite the decline in arrests, the number of youths incarcerated due to violent offending remains a significant concern representing approximately one-third of the national incarcerated youth population (Office of Juvenile Justice & Delinquency Prevention, 2019). Puzzanchera (2021) reported that out of 696,620 youth arrests in 2019, a total of 44,010 were for violent crimes (i.e., murder and nonnegligent manslaughter, robbery, and aggravated assault). Further, these data are congruent with findings showing high rates of serious violent offending among adolescents (Hein et al., 2017), with substantial evidence to suggest minoritized[1] youth are incarcerated at a higher rate than White youth for both violent and non-violent offending behaviors (Fagan & Catalano, 2013; Keels, 2024; Rovner, 2016). This perpetuates a cycle of disadvantage and marginalization among minoritized youth, including facing poor health outcomes that persist across the lifespan, and a higher mortality rate than their non-incarcerated peers (Gilman et al, 2015; Garza, 2019; Ruch et al., 2021). This disparity is not an anomaly; it reflects deep-rooted systemic inequalities that seriously affect the trajectory of minoritized youths' lives who often face additional

[1] Many terms commonly and historically referenced in research on youth who commit criminal offenses (e.g., juvenile delinquent and juvenile offender) serve to label and reinforce negative stereotypes and bias towardthis vulnerable population. Specifically, when discussing youths who have been incarcerated disproportionately compared to their White counterparts, the term minoritized youth(s) or youth of color will be utilized when referencing prior research irrespective of the terms in print. The Diversity Style Guide (Kanigel, 2019) acknowledges that there is no consensus regarding capitalization for the terms Black and White in various style guides. Kanigel (2019) chooses to capitalize both (Black and White) despite advocates who indicate not capitalzing the word white signifies respect and de-centers white privilege and white supremacy. The Publication Manual of the American Psychological Association (7th ed., 2020) advises the use of capitalization for both Black and White; thus, for consistency both will be capitalized throughout this document. In addition, the word "youth" is utilized instead of juvenile after consultation with the family advisory council in the Colorado Division of Youth Services revealed a preference for the word "youth" in lieu of other common legal terms. The term criminal legal system (CLS) will be utilized instead of juvenile justice system (JJS) to acknowledge that the term "justice" may be misleading given evidence of disproportionate minority confinement at every point in the system.

discrimination in social contexts post-release (Omura, 2014). Data reported by the Colorado Division of Youth Services (DYS) indicate a similar pattern (DYS, 2024). In fiscal year 2022-2023, 47% of those newly committed to long-term care were for violent offenses, representing a 16% increase over four years. Therefore, it is critically important for the CLS to identify and respond therapeutically to the needs of youth to prevent the negative consequences of confinement and the potential of advancing in the pipeline toward deeper system involvement (Espinosa & Sorensen, 2015; Dutil, 2020), particularly among minoritized youth who disproportionately experience confinement compared to their White counterparts and also experience reduced access to rehabilitative services (Cochran & Mears, 2014; Lowery et al. 2016).

In addition, the prevalence of trauma exposures among youth in the CLS is alarmingly high with many youths experiencing multiple forms of trauma, including physical and emotional abuse, neglect, and community violence (Dierkhising et al., 2013; Baglivio & Epps, 2016), termed polyvictimization (see Finkelhor, 2007a). This high incidence of lifetime exposures to adversity, experienced at a higher rate by CLS-involved minoritized youth (Briere and Dietrich, 2016) is compounded by the traumatic nature of incarceration itself, which can lead youths to demonstrate harmful behaviors, including physical aggression (Kowalski, 2019; Ford et al., 2012). The increased risk for exhibiting aggressive behaviors while confined can make desistance from criminal offending challenging (Stimmel et al., 2014; Pechorro et al., 2021). The following section introduces key concepts that inform the need for this dissertation study.

## Key Concepts: Trauma, Violent Offending & Physical Aggression

Trauma exposure is defined as experiencing, witnessing, or learning about events that involve actual or threatened death, serious injury, or sexual violence, consistent with diagnostic criteria outlined in the DSM-5 and assessed through tools such as the UCLA PTSD Reaction Index for DSM-5 (Kaplow et al., 2020). Physical aggression refers to behaviors involving the deliberate infliction of bodily harm on another individual, including acts such as hitting, kicking, or striking (Bushman & Anderson, 2001). In contrast, generalized aggressive behaviors encompass a broader range of actions intended to cause harm, including both physical and non-physical forms such as verbal threats, intimidation, and relational aggression (Anderson & Bushman, 2002). This section acknowledges the association between trauma exposures, violent offending, and CLS involvement, with a focus on acts of physical aggression once confined. The definitions outlined represent the approach to understanding trauma exposure for the purpose of this study.

The link between trauma exposures and violent offending (i.e., a class of offenses against persons) points to where the CLS, researchers, and communities can focus efforts to better understand and prevent CLS involvement. However, once youths are incarcerated, it is critical to understand the relationship between trauma exposures and physical aggression. Notably, acts of physical aggression in secure residential settings may not always lead to new criminal charges but can prolong stays or elicit disciplinary actions (Eltink et al., 2018). Moreover, they have significant implications for the immediate safety of the environment, and serious consequences for the youths such as the use of physical management techniques by staff, which may further traumatize youths in care (Branson et al., 2017). Further, the lack of appropriate interventions may lead to additional mental health symptoms and intensify behavioral challenges, thereby

increasing the likelihood of recidivism (Gilman et al., 2021). It is critically important to understand the precursors of physical aggression during confinement to avoid contributing to the cycle of violence for these vulnerable youths (Widom, 1989a; 1989b).

One known precursor to aggression among CLS-involved youth who are incarcerated is the experience of cumulative trauma (Ford et al., 2012). While most adolescents who have experienced trauma do not exhibit aggression or commit crimes (Widom, 2017), youth in the CLS have experienced trauma at a disproportionately higher rate than youth in the general population (Baglivio et al., 2014a; Ford et al., 2010; Fox et al., 2015; Levenson et al., 2017; Rosenberg et al., 2014). Research confirms that adolescents who move from earlier points of contact within the CLS to secure residential facilities have an extensive trauma history (Bloom, 2013; Ko et al., 2008), with at least 90% experiencing at least one traumatic event (Abram et al., 2004) and many reporting multiple trauma exposures (Ford et al., 2013).

The link between early exposures to trauma and violent offending behavior is well established (Baron & Forde, 2020; Brown et al., 2021; Maschi et al., 2019; Vitopoulos et al., 2019) with studies reporting positive correlations between cumulative trauma and violent offending in adolescence (Baglivio et al., 2015; Barkauskienė et al., 2019; Wolff et al., 2017). In addition, Zettler et al. (2018) noted an increased risk of commitment to a youth residential facility with each additional reported trauma exposure among CLS-involved youth. Other investigations reported a relationship between trauma and an increased risk of chronic offending (Wolff & Baglivio, 2017) and violent arrests (Papalia & Widom, 2024) partially explained adult attachment styles, lending support to the notion that certain risk factors in childhood and adolescence may lead to sustained difficulty that persists into adulthood when left untreated. Exhibiting physically aggressive behavior after becoming CLS-involved has severe

consequences. For example, youths who are in secure residential facilities may exhibit physically aggressive behavior, which in turn can further entrench them in the CLS and may result in transfer to the adult criminal legal system. In the current study, physical aggression is operationalized using the Colorado Division of Youth Services (DYS) definitions of fights and assaults. Fights are characterized as mutual physical altercations between two or more individuals, typically involving behaviors such as hitting, kicking, or striking. Assaults are defined as unilateral acts in which an individual intentionally inflicts or attempts to inflict physical harm on another person. The focus of the Colorado youth CLS on rehabilitation may offer the opportunity to prevent further physical aggression in secure residential facilities if understood, which in turn may improve long-term outcomes for youths in care.

With this aim, it is essential to understand the relationship between trauma exposures and physical aggression in secure residential facilities (Modrowski et al., 2021), and how the CLS can effectively address the needs of youth and reduce the likelihood of further harm (McNeill, 2013; Palmer, 2014). However, little is known about how physical aggression exhibited in secure residential facilities is related to early life trauma exposures and how cumulative trauma may affect the likelihood of engaging in aggression once confined. In Colorado, a secure residential facility is defined as a state-owned and operated facility where youth are involuntarily held due to a moderate or high level of risk to public safety. This dissertation considers the impact of cumulative trauma in relation to physical aggression while confined among a Colorado CLS population, pointing to implications for public policy, clinical treatment, and training needs for CLS youth and staff. The next section reviews what is known about trauma exposures among youth with CLS-involvement.

**Violent Behavior Prevalence Rates & Extent of the Problem**

Involvement in violent crime by youth as a precursor to confinement has serious negative consequences, including low educational achievement and impaired social relationships, and this effect can may become stronger if physical aggression is exhibited during confinement due to the system response to contain the behaviors (Baglivio et al., 2015; Moffitt, 1993; Sampson & Laub,1995). Importantly, research suggests that adolescents who engage in violent offending behavior (i.e., crimes against persons) are more likely than other adolescents who engage in non-violent offending to enter and experience prolonged involvement in the CLS (Bronson & Carson, 2019; Lacourse et al., 2008). They are also more likely to experience disruption in the development of their self-regulatory capacity due to a history of high trauma exposures (Ford & Blaustein, 2013) and are at risk of long-term adverse health consequences in adulthood (Krug et al., 2002; Ritchie & Roser, 2019). Consequent to violent offending is the likelihood of incarceration for such offenses. Research clearly demonstrates the deleterious effects of incarceration including poor physical and mental health outcomes, less educational goal attainment, and decreased ties to the community (González, 2017). Critical to this dissertation project is evidence indicating that once confined, physically aggressive conduct may perpetuate a longer length of stay and further entrenchment in the system, putting racial and ethnic minoritized youth at particular risk given the existing disparities within CLS, including in rates of incarceration (Leiber, 2013). Aggressive conduct while confined can contribute to further entrenchment in the CLS or transfer to the adult system (Haerle, 2019). Therefore, understanding the factors contributing to aggression among youth while residing in a secure residential setting is critical to preventing the long-term negative consequences of incarceration for all youth, and, in particular, minoritized youth (Haerle, 2019; Oglesby-Neal & Peterson, 2021).

### *Predictors of Aggression in Secure Residential Facilities*

Younger age, history of trauma exposures, and extensive delinquent backgrounds are significant predictors of violent misconduct in youth secure residential facilities (Trulson, 2022). The level of institutional security and the facility environment play crucial roles in influencing misconduct. Facilities with higher security levels tend to see more aggression (van der Helm et al., 2012). Another significant predictor of misconduct in secure facilities is a history of family dysfunction and childhood abuse. Research has consistently shown that youth who experience physical abuse or come from chaotic home environments are more likely to engage in violent behaviors while incarcerated. For example, Dalsklev et al. (2019) found that having been physically abused as a child was predictive of future offending behavior in a national sample of incarcerated individuals, indicating a strong link between early trauma and later misconduct. Similarly, Tasca et al. (2010) emphasize the importance of understanding the familial context of youth offenders, suggesting that those with histories of familial violence may struggle more with adjustment in institutional settings. This aligns with findings from Lai (2019), who emphasizes that the psychological impact from early childhood abuse can manifest as violent misconduct in juvenile offenders. Given these links, the below section discusses trauma exposures as a significant risk factor for violence.

## Trauma Exposures Among Youth in the CLS

Studies have shown trauma exposures are a critical risk factor for violent offending behaviors among youth in the CLS (Apel & Burrow, 2011; Chang et al., 2003; Chen, 2009a, 2009b; Jennings et al., 2010; Lauritsen & Quinet, 1995; Lauritsen et al., 1991; Maldonado-Molina et al., 2010; Schreck et al., 2008). Notably, however, in the United States, more than half of adolescents in the general population have experienced at least one traumatic event (TE;

examples include sexual abuse, natural catastrophes, and acts of community violence), with many having experienced several TEs by late adolescence (e.g., Finkelhor et al., 2011; Pane-Seifert et al., 2022). Although many do not go on to criminally offend, high rates of trauma exposure among CLS-involved populations persist across the lifespan and typically fluctuate in breadth and intensity, with evidence pointing to a dose-response effect (Brown et al., 2009; Felitti et al., 1998; Loughran et al., 2009; Maschi et al., 2019). Cumulative trauma refers to the complex and layered impact of multiple traumatic exposures over a period of time which collectively overburden an individual's ability to cope effectively (Rivara et al., 2019). It is characterized by the accumulation of stress from various sources, which may include, but are not limited to, childhood abuse (physical, sexual, emotional), neglect, exposure to violence, and other forms of interpersonal violence or life-threatening events (Baglivio et al., 2014a, 2014b; Ford et al., 2010, 2012). The compounded nature of these experiences can lead to more severe psychological outcomes (e.g., PTSD, anxiety, and depression) than might be expected from a single event, affecting overall mental health, emotion regulation, relationships, and adaptive functioning (Finkelhor et al., 2007a, 2007b; Yoder et al., 2019).

Notably, youth in secure residential settings have often experienced more severe forms of trauma, including violence, abuse, and neglect at higher rates than their counterparts in the general population (Abram et al., 2004; Ford et al., 2010; Fox et al., 2015; Levenson et al., 2017). Studies regularly reveal that 80–90% of CLS-involved youth have experienced one or more forms of traumatic events as children, frequently with numerous types of traumatization, which aligns with the construct of cumulative trauma (see Kerig & Becker, 2015 for a review). Particularly high rates of trauma exposure, posttraumatic stress disorder (PTSD), other serious mental health issues, and functional impairments (e.g., substance use, suicidal ideation, self-

injurious behaviors, and school problems) are present in children and adolescents who are involved in the CLS (Adams et al., 2016; Finkelhor et al., 2009; Ford et al., 2010, 2013). Further, involvement in the CLS alone raises the likelihood of exposure to trauma and places youths at risk for atypical developmental outcomes (National Research Council, 2013). Residing in a confinement setting may exacerbate negative coping responses, particularly among youth with the most severe trauma exposure histories. This includes minoritized youth who are known to be overrepresented in the youth CLS (Fader et al., 2014).

**Racial and Ethnic Disparities in the CLS**

Any discussion of the CLS must center disproportionate impacts on youth of color given substantial evidence of the system's disparate impact on racial and ethnic minoritized populations. Although CLS reform efforts attempt to address racial disparities in confinement rates and the gaps in treatment services in secure residential settings (Javdani, 2019), minoritized youth continue to be disproportionately represented at all entry points in the CLS (Oglesby-Neal & Peterson, 2021). For example, in 2019, delinquency case rates—the number of delinquency cases disposed of by juvenile courts per 1,000 youth at risk of juvenile court processing—for Black youth were triple that of White youth (Hockenberry & Puzzanchera, 2021), which may be partly related to the disproportionate use of exclusionary disciplinary practices in schools that push youths toward CLS involvement (Dutil, 2020).

Additionally, for every 100,000 youths in the United States, 22 White youths are detained compared to 41 Latinx youths and 139 Black youths. Despite the disparities that exist between White youth and Black youth, in particular, research indicates that minoritized youth do not commit crimes commensurate with their rate of CLS system involvement (McCarter & Durant, 2022; Piquero, 2008). In the United States, Black youth are incarcerated at 4.4 times the rate of

White youth, 41% of youth currently residing in secure settings are Black, and every state except Hawaii has incarcerated more Black youth than any other group (Rovner, 2021). Rovner (2021) reported that between 2015 and 2019, Colorado experienced a 14% increase in this disparity, with Black youth 7.3 times more likely than White youth to be incarcerated. An attempt to replicate the findings (DYS, 2023, unpublished) found discrepancies when examining the official data provided by the Colorado DYS for the Census of Juveniles in Residential Placement (CJRP) survey for the years referenced, and upon which the Rovner analyses were based. This DYS study found discrepancies in the DYS population data, total youth population in Colorado, rate of placement in state secure care, and the Black/White placement disparity data utilized. However, the outcomes reported by Rovner for 2015 and 2019 were similar in all categories. Both studies, despite small differences in their findings, highlight the pressing need to understand and respond to racial disproportionality among youth in the Colorado CLS.

Overrepresentation of youth of color in the CLS, especially for Black youth, has been a persistent issue for decades attributed to the presence of systemic racism (Abrams et al., 2021; Morris, 2016). When youth enter the CLS, the potential for different treatment based on race and ethnicity is evident at every point of contact within the system (Abrams et al., 2021; Piquero, 2008). While there has been an overall decline in the percentage of the youth population involved in the CLS, there has been an increase in Black youth by approximately 15% (Rovner, 2016). Racial disparities in the CLS are evidenced by harsher sentencing outcomes for Black youth compared to White youth (Abrams et al., 2021). Although Black youth comprise only 15% of the general population, they accounted for 35% of the 750,000 new juvenile cases reported in 2018 (Sickmund et al., 2019). Black youth are consistently overrepresented in the CLS, while White youth are underrepresented relative to their proportion in the general population. Judges

are 21% more likely to impose out-of-home placements, including secure confinement, on Black youth than on their White peers. Although the overall rate of youth committed to secure facilities declined by 47% from 2003 to 2013, racial disparities in confinement rates have persisted. However, the rate of commitment to long-term secure care for youth of color did not improve. In fact, during the same period, the racial gap in secure commitment between Black and White youth increased by 15% (Sickmund, 2019). Although the Juvenile Justice and Delinquency Prevention Act (JJDPA) of 1988 mandated that states address racial disparities in juvenile confinement, these disparities have persisted and, in many cases, worsened. Nationally, 33 states and the District of Columbia reported increased Black–White commitment disparities, while 17 states reported either slight decreases or no change at all (Sickmund, 2019). Between 2003 and 2017, the Black–White disparity in commitment rates rose from 3.7 to 4.3, the Latinx–White disparity remained stable at 1.6, and the Native American–White disparity increased from 2.5 to 3.7. Although arrests for violent offenses accounted for less than 5% of total youth arrests, these offenses continue to represent a substantial proportion of youth committed to secure facilities (Office of Juvenile Justice and Delinquency Prevention, 2019).

The persistent racial and ethnic disparities in youth involvement with the CLS reflect broader systemic inequities. These disparities are magnified when systemic racism intersects with childhood and adolescent trauma experiences that disproportionately affect youth of color. Understanding trauma histories among youth in secure residential environments is an essential first step toward addressing these inequities (Oglesby-Neal & Peterson, 2021). Many incarcerated youths have endured significant adversity before system involvement, which can exacerbate behavioral and emotional challenges during confinement. Research indicates that Black youth are no more likely than White youth to self-report lifetime perpetration of violence;

nevertheless, Black youth are disproportionately arrested, confined, and sentenced more harshly than their White peers (Oglesby-Neal & Peterson, 2021). Even when controlling for legal factors such as offense severity and prior criminal history, racial disparities in confinement rates persist, suggesting that non-legal factors, including systemic bias, contribute to these outcomes (Leiber, 2013). Consequently, understanding the trauma histories of incarcerated youth—particularly those from racially and ethnically minoritized backgrounds—is a necessary first step. It will help ensure that research and practice settings do not mistakenly attribute disparities in system involvement solely to individual pathology or deficit-based attributions based in minoritized identity but rather will help recognize the broader structural factors that need to be addressed.

### *Trauma Exposure and CLS Involvement among Racial and Ethnic Minoritized Youth*

Minoritized youth experience trauma in ways that are distinct from their White counterparts, largely due to the pervasive effects of racialized stress and discrimination. Racial stressors can lead to significant trauma symptoms, which are often exacerbated by the ecological and developmental contexts in which young people of color live. The Developmental and Ecological Model of Youth Racial Trauma (DEMYth-RT) posits that individual, family, and community processes mediate the impact of racial stressors on trauma symptomatology, illustrating the multifaceted nature of these experiences (Saleem et al., 2020). Of note, these findings are directly relevant to my professional role overseeing health services for youth in secure residential facilities in Colorado, where it is critical to integrate racially responsive, trauma-informed practices that includes all trauma exposure types. However, current political efforts to limit discussions of systemic racism in public institutions may present challenges to fully implementing interventions that address racialized trauma.

Research indicates that Black youth are more likely to encounter both interpersonal and racial trauma, which traditional trauma treatments often fail to adequately address (Metzger et al., 2021). Although a growing body of literature has established the association between experiences of racism and traumatic stress symptoms in community samples (Williams et al., 2014; Williams et al., 2018), research specifically examining these relationships among criminal legal-involved youths remains limited. Additionally, within the CLS it remains insufficiently understood how systemic processes contribute to the differential experiences of racially and ethnically minoritized youth. Despite evidence that these youth do not pose higher risks of violence relative to their White peers when controlling for offense severity and behavioral histories, they remain disproportionately disciplined at school, detained, and confined (López et al., 2017; Saleem et al., 2021). This overrepresentation cannot be explained solely by mental health needs or the seriousness of offenses, suggesting other factors are operating. To address systemic inequities through long-term system reform efforts, we first need to understand individual factors that contribute to cumulative disadvantage experienced by minoritized youth from the first point of contact through the incarceration experience (Opara et al., 2020). The current study seeks to contribute to this understanding by examining how trauma exposure profiles and behavioral outcomes (i.e., physical aggression) intersect while youths are confined, controlling for age, gender, and racial identity.

In secure residential facilities, minoritized youth also face unique challenges related to physical aggression and interactions with staff. Studies reveal that Black and Latinx youth often come from more violent and disorganized neighborhoods, which can lead to earlier initiation of violent behaviors (Saleem et al., 2021). However, these youth also demonstrate resilience and prosocial involvement, suggesting that protective factors exist despite the adversities they face

(Andrews et al., 2015). Unfortunately, they also frequently experience higher rates of disciplinary infractions and longer stays in secure residential facilities, which are likely influenced by biases and hostile attribution of Black youths' behavior over their White counterparts (Metzger et al., 2021). In other words, staff view youth of color and their behaviors differently, and given long-standing racism within the system, youth of color often face differential consequences. The differential experiences of trauma among minoritized youth are shaped by a complex interplay of racial stressors, systemic biases, and ecological factors (Polanco-Roman et al., 2024). These experiences not only contribute to higher rates of traumatic stress symptoms but also have significant implications for their treatment within the youth CLS.

Much of the research on youth involved with the CLS is in recidivism reduction and focuses on individual criminogenic risk factors and needs that increase the likelihood of reoffending (Bonta & Andrews, 2017). How youths' specific responsivity and trauma profiles relate to physical aggression once incarcerated is less understood (Latessa et al., 2015; Polaschek, 2009; Taxman, 2014). Considering how youth who have experienced cumulative trauma respond to the secure residential environment may establish further treatment standards for the CLS to integrate into practice (Ford & Blaustein, 2013; Sichel et al., 2019). This is particularly important for youth of color who, as discussed, experience disproportionate involvement in the CLS.

### Trauma as a Risk Factor for Violence Within Secure Residential Facilities

This dissertation project focuses on the role of trauma as a risk factor for violence within secure residential facilities. Key empirical and theoretical evidence is presented briefly here to set the stage for the specific research questions that will be explored in this research study, which are included in the final section of this chapter. As discussed earlier, decades of research have

revealed that violence and aggression in adolescence do not spontaneously occur and may be partially understood in the context of lifetime exposures to multiple forms of adversity or cumulative trauma (Braga et al., 2017; van der Zouwen et al., 2018). Child maltreatment, peer victimization, exposure to family and community violence, and interpersonal violence are types of trauma exposure that researchers have linked to negative developmental and health outcomes and problem behavior in adolescence (Abram et al., 2004; Danese et al., 2009; Su et al., 2022; Widom et al., 2007; Widom, 2022). A particularly salient problem behavior for adolescents exposed to trauma is acting out aggressively (Darnell et al., 2019; DeLisi et al., 2010; Dodd et al., 2022; Greeson et al., 2014; Layne et al., 2014).

Physical aggression within a secure residential setting is a key behavior that can lead to further entrenchment in the CLS or transfer to the adult justice system (Haerle, 2019). This may be particularly true for adolescents who have experienced greater levels of cumulative trauma (Tillaart et al., 2018). Thus, understanding whether cumulative trauma profiles—or patterns of trauma exposures—are associated with incidents of physical aggression in secure residential facilities may ultimately help to guide treatment for youth while they are confined to prevent negative outcomes.

**Pathways from Trauma to Violent Offending & CLS Involvement**

Cumulative trauma in childhood has been widely studied as a developmental pathway toward violent offending (Baglivio et al., 2021; Farrell & Zimmerman, 2017; Fox et al., 2015; Jennings et al., 2012; Martin et al., 2015; Supkoff et al., 2012). Multiple studies have demonstrated a significant positive correlation between youth aggression and prior exposure to violence that occurs both in the home and in the community (Corvo & deLara, 2010; Foshee et al., 2016; Ingram et al., 2020; Ulloa et al., 2012). Prior exposure to violence may include

exposure to various forms of trauma in childhood and adolescence through the intentional use of force or power that is either physically *or* psychologically harmful (Dahlberg & Krug, 2002). Trauma and adolescent offending have been studied for decades with multiple lines of inquiry in diverse fields such as social work, public health, criminology, developmental psychopathology, sociology, political science, and economics (Mitton, 2019). The literature is replete with explanations of the pathways to adolescent offending and includes studies with varied terminology such as the abuse-violence link (Maas et al., 2008), maltreatment-offending association (Malvaso et al., 2018), cycle of violence hypothesis (Widom 1989a, 1989b), adverse childhood experiences (known as ACEs; Anda, 2006; Felitti, 1998), ACEs-trauma-offending association (Malvaso et al., 2021), and the maltreatment-violence link (Malvaso et al., 2018). What the lines of research have in common is the drive to understand how adverse events, more broadly understood as cumulative trauma exposures, relate to adolescent offending, and more specifically, the relationship between trauma and violent offending (Craig et al., 2021).

Research consistently demonstrates that youth involved in the CLS experience higher rates of trauma exposure compared to their peers in community samples (Coleman & Stewart, 2010; Ford et al., 2012; McDougall et al., 2013). Much of this research has focused on the association between cumulative trauma exposure and the onset of delinquent behavior or initial system involvement. For example, Bellis and colleagues (2014) found that sustaining four or more trauma exposures significantly increased the risk of engaging in violence and subsequent incarceration. However, less is known about how early life trauma continues to affect youth once confined, including its potential to exacerbate behavioral dysregulation, increase aggressive responses, and contribute to staff interventions aimed at behavior containment. It is important to note, however, that while trauma exposure is a well-established risk factor for system

involvement and behavioral challenges, it is not deterministic; the relationship between trauma and violence is complex and influenced by a range of ecological, developmental, and systemic factors (Maschi et al., 2019). Understanding trauma's ongoing influence within secure environments is critical to developing interventions that address not only the pathways into confinement but also youths' experiences and behaviors during incarceration.

### *Facility Strategies for Addressing Violent Offending Among Youth*

The secure environmental response to violent offending behavior is to provide interventions aimed at rehabilitation, deterrence, and community protection (Culyba et al., 2018; Irby et al., 2018; Krug et al., 2002; Mercy et al., 2003; Mitton, 2019; Rutherford et al., 2007; World Health Organization, 2014). Incorporation of a trauma-responsive model and interventions to address the impact of youths' underlying trauma, the intersection with aggression, and the environment of care should be a priority for any system seeking to prevent violence among youth who are in secure residential facilities (Ford et al., 2012). Herrenkohl et al. (2019) articulated the need for universally available trauma-responsive prevention and intervention in secure CLS settings. Understanding the need for responsive models of care and translating that need to practice requires a clear understanding of youths' cumulative trauma exposure history *before* incarceration and the association with physical aggression while residing in a secure setting. This dissertation examines the link between trauma exposures and physical aggression, embedded in social context (i.e., secure residential facilities), to inform ways in which the Colorado-specific CLS can effectively and appropriately respond to youth. An important consideration is to understand the unique experiences of racial and ethnic minoritized youth given their disparate involvement in the Colorado CLS.

## Relevance to Social Work

The field of social work is concerned with the prevalence of youth violence and aggression through a mandate to protect vulnerable populations (Perkins & Barry, 2019) and an assertion through the Grand Challenges for Social Work to ensure healthy development for all youth, stop family violence and promote smart decarceration (American Academy of Social Work & Social Welfare, 2016a, 2016b, 2016c). Social work is also concerned with social justice (Ginwright & Cammarota, 2002), an area rich with opportunities to examine the intersection of trauma and aggression through a person-in-environment lens (Wright, 1991). This includes a central role for social work to contribute to antiracism efforts and actively dismantle oppressive systems and practices that perpetuate harm. Research indicates that racial and ethnic minoritized youth are at greater risk for both violent victimization *and* violent perpetration, and disparities in risk for violence have been linked to racism, sexism, homophobia, and other structural disadvantages (Popkin et al., 2015). For example, Mendoza and colleagues (2020) noted intersectional concerns in schools where Black youth who have a diagnosis of intellectual disability are at greater risk of referral to the CLS as compared to White youth with intellectual disabilities who are spared referral to the CLS for engaging in externalizing behaviors such as aggression. Social work has often aligned with the very oppressive systems in need of reform (Washington et al., 2021) and must transform and uncouple from the structures that perpetuate harm to youth. One opportunity is in social work's attention to the environment of care in secure residential facilities to eliminate institutional responses that cause further harm to youths.

Understanding the intersection of trauma and aggression in youth may influence how the secure environment of care operates by altering its responses to youth who act aggressively and

may ultimately lead to addressing the systemic factors identified through research that contribute to eliciting aggression. In addition, research indicates that racial inequities are perpetuated through the act of incarceration (Graves et al., 2015). Thus, social work is uniquely positioned to help understand the intersection of trauma and aggression in youth who reside in secure residential facilities toward the end of reducing the disproportionate impact on racial and ethnic minoritized youth who are deeply involved in the CLS. The Juvenile Justice Reform Act of 2018 reauthorized the Justice and Delinquency Prevention Act (JJDPA) for an additional five years (McCarter & Durant, 2022). Requirements included reducing racial and ethnic disparities in the CLS. By understanding the influence of factors from a social-ecological framework (Bronfenbrenner, 2005), the CLS can reduce structural and systemic problems that contribute to lack of opportunity and perpetuation of social problems (e.g., aggression) for youth while confined (Reisch, 2002). Research indicates that biases can drive decision-making when considering whether to confine a youth (i.e., sentencing decisions by judicial officers). For example, from a young age, Black youth are perceived as less innocent than White youth, face more severe punishment, and are less likely to have their cases dismissed (Washington et al., 2021). Youth of color who identify as female are additionally stereotyped as engaging in permissive behavior, are sexualized, and subject to adultification (Washington et al., 2021). Although youth incarceration rates have decreased, they have remained stable for Black youth since 2017 despite the overall decrease for other ethnoracially identified groups (Sickmund et al., 2019).

Washington et al. (2021) also described a more fundamental core value and responsibility of social work to actively dismantle the oppressive systems the field has historically joined to access and amass power to legitimize the profession. The youth CLS is one such system. In

1899, the field of social work helped establish the recognition of youth as fundamentally different than adults when the first juvenile court was established. The approach to juvenile care was from a developmental lens, with rehabilitation as the central aim (Scott, 2000). Today, youth of color are still disproportionately arrested and confined and are often profiled as dangerous (Fox-Williams, 2019). By addressing the intersection of trauma and aggression while in secure residential facilities, social work can help reclaim the original aim in response to the current systemic violence perpetuated from within the system. Social work calls for youth to be accountable but does not call for them to be harmed by the very system entrusted with their care, even if the harm is unintentional. An ecological perspective was at the heart of the reasoning for the original juvenile court (Abrams, 2013), and the intersection of trauma and aggression must be addressed through this same lens.

## Purpose of the Dissertation Study

This dissertation study addresses cumulative trauma and aggression among youth in the CLS residing in a secure residential environment. Specifically, the study examines trauma exposures to establish cumulative trauma profiles for youth committed to the Colorado Division of Youth Services (DYS) and compare group differences based on demographic characteristics and engagement in physical aggression while confined. It is a nonexperimental quantitative associational and comparative design utilizing DYS administrative data from the UCLA PTSD Reaction Index- Version 5 (Pynoos & Steinberg, 2015) tool related to trauma exposure types and administrative data related to physical aggression (i.e., incident reports).

The purpose of this study is to establish latent classes of trauma exposure types for a sample of DYS youth and to examine how these classes may differ based on demographic characteristics and incidents of physical aggression while confined. Establishing these trauma

profiles is crucial to move beyond simple exposure counts to capture the complex, overlapping patterns of traumatic experiences that shape youth outcomes in youth CLS settings. A latent class analysis approach (Collins & Lanza, 2010; Lanza & Collins, 2008) allows for the identification of naturally occurring subgroups with distinct trauma histories, providing a more nuanced understanding than traditional variable-centered approaches. This person-centered method is particularly valuable for informing targeted trauma-responsive interventions within secure facilities, as different trauma profiles may require different treatment approaches and security considerations. Understanding these distinct patterns of trauma exposure can help facilities move away from one-size-fits-all approaches toward more individualized, trauma-informed care that addresses the specific needs and risks associated with each profile.

This study examines lifetime exposure (dichotomous yes/no response) to 23 trauma types via a dichotomous (yes/no) response using a validated measure, the UCLA PTSD Reaction Index- Version 5, following two key studies (Charak et al., 2019; Ford et al., 2013) that utilized the tool to capture multiple exposures, which is required when studying trauma through a cumulative risk lens. Rutter (1979) emphasized that multiple adversities, rather than isolated events, compound to create a heightened risk for aggression and involvement in the CLS. Early research (Finkelhor, 2007a) revealed high rates of trauma exposure (i.e., polyvictimization). As studies began to identify strong correlations between cumulative trauma exposures—or polyvictimization—and aggressive behavior, it signaled the need for researchers to move beyond single-event trauma models to a more comprehensive understanding of how layered adversities shape behavioral outcomes. For example, Charak and colleagues (2019) found distinct groups of youth categorized as low (mixed adversity), moderate (increased rates of exposure except for emotional abuse, sexual abuse, parents threatening to abandon, and parental conflict), and high

levels of trauma exposure (poly-victimization) with adversity type being significantly higher for every category of trauma exposure. The ability to discuss trauma profiles is important as we seek to advance our understanding of this multifaceted construct. Using the same tool, this study extends the literature in several key ways: 1) by including a more racially and ethnically diverse sample of youth who have been committed to long-term stays in secure residential care, and 2) by examining aggressive behavior while confined. Specifically, the Colorado DYS data are unique in two ways regarding sample characteristics that address important gaps in the literature: 1) only about a third of the population of youth in DYS is White with higher percentages of Black and Hispanic youth as compared to prior studies 2) the average length of stay exceeds a year indicating that youth who are confined in Colorado are considered to be at greater risk of experiencing the negative consequences of confinement. It is expected that these findings will illuminate the unique needs of diverse youth who are confined to long-term secure residential stays, thus informing how practitioners and administrators can address the treatment needs of the youth through targeted interventions.

In summary, since its inception in 1899, the CLS has fluctuated between rehabilitation and punishment (Abrams, 2013), with current attention focused on targeting treatment to reduce the risk of recidivism and avoid long-term system involvement. Without addressing critical issues such as racial disparities as part of CLS reform and reducing aggression in confined settings, the CLS will continue to focus on the youth as the identified problem instead of targeting the necessary reforms in the environment of care. This dissertation study provides the rationale for CLS's across the country to develop and maintain a trauma-responsive model of care, examines whether cumulative trauma differs based on latent class membership, and whether physical aggression while in a confinement setting can be predicted based on a youth's

trauma exposures profile. Understanding these relationships will allow the CLS to further develop therapeutic programming and interventions to respond more effectively to youth who are deeply involved in the CLS and provide an environment of care that supports rehabilitation. This study examines the following research questions:

**RQ1:** What cumulative trauma profiles exist among youth in secure residential facilities in Colorado?

**RQ1a:** How are racial and ethnic minoritized groups distributed across the identified trauma profiles?

**RQ2:** Does latent class membership predict physical aggression while youth are confined, and does this relationship persist when accounting for racial/ethnic background?

In conclusion, this dissertation study establishes the requisite knowledge about the relationship between trauma and physical aggression for youth in secure residential facilities in Colorado. To date, no study has been published utilizing the Colorado of Division Youth Services (DYS) data that addresses the intersection of trauma and physical aggression in the environment of care. The following chapter transitions from the foundational concepts to a review of the literature on trauma exposures and the relationship to youth aggression and violent offending. This includes an examination of cumulative trauma and introducing theoretical considerations and empirical evidence to explain this complex relationship, offering a lens through which to understand the influence of individual experiences of trauma on the likelihood of exhibiting physical aggression while confined. Further, this chapter addresses the critical issue of youth involvement in the criminal legal system (CLS), with a particular focus on situating trauma exposures and physical aggression within the broader context of racial disparities. Although the study does not directly test for racial disparities in CLS outcomes, race is included

as a covariate to account for its well-documented role in shaping youth experiences within the system. The chapter concludes with restating the research questions guiding this study.

# CHAPTER 2

# LITERATURE REVIEW

In this chapter, first the literature on trauma is reviewed to establish what is known about victimization in childhood and adolescence among youth who become deeply involved in the CLS, followed by an exploration of the link between trauma exposures and violent offending, and concludes with factors that predict physical aggression while in secure residential care. Second, theoretical considerations are applied to explain the link between trauma, violent offending, and aggressive behavior. Next, the CLS is described, including highlighting the overrepresentation of youth with complex trauma histories as well as the disparate impact of the CLS on racial and ethnic minoritized youth. Finally, the impact of trauma of incarceration on highly traumatized youth while confined is considered followed by a discussion of the gaps in the literature guiding the present study.

Trauma exposures can include experiences perceived as a dangerous, frightening, or violent incident that involves actual or threatened death, or a threat to the bodily integrity of oneself or others (Finkelhor et al., 2011). They can have a detrimental and lasting impact on the psychological health and well-being of individuals, particularly children and adolescents. Traumatic events include a range of exposures such as physical or sexual victimization, witnessing or experiencing violence, and exposure to chronic adversity or repeated violence. The effects of trauma can manifest in various ways, including cognitive and emotional dysregulation, maladaptive coping behaviors, and increased risk of engaging in high-risk behaviors such as aggression, substance use, and delinquency.

As noted in chapter 1, rates of exposure among CLS youth are substantially higher than that which is found among the general population (Abram et al., 2004; Kerig & Becker, 2010, 2011; Lansford et al., 2007). In particular, youths residing in secure residential facilities tend to suffer from more extreme trauma, such as violence, maltreatment, and neglect, at rates surpassing those observed within the general youth population or youth with lower-level offending behavior (Abram et al., 2004; Ford et al., 2010; Fox et al., 2015; Levenson et al., 2017). Further, youths who have offended chronically also experience higher rates of trauma compared to what Fox and colleagues (2015) termed "one and done," meaning a youth who commits one criminal offense but does not continue offending. Moreover, involvement with the CLS increases the probability of experiencing additional trauma exposures, and predisposes these youths to repetitive traumatization, which may be compounded by system-generated trauma (Ames & Loebach, 2023; Yoder et al., 2019).

For example, the association between trauma exposures and the risk for recurring carceral involvement remains an important consideration when identifying and addressing the needs of youth. Understanding the relationship between trauma exposures and aggressive behavior during confinement warrants further study (Baglivio et al., 2015) given it is a significant risk for carceral entrenchment (Piquero, 2015). Collectively, studies continue to demonstrate important links among trauma, violent and aggressive behaviors[2], and involvement in the CLS. Yet less is known about these links while youth are incarcerated, which is a critical setting to understand these relationships given the likelihood that physically aggressive behavior will have severe consequences for youth. As such, examining the relationships among these variables is important

[2]The term violence includes acts of aggression toward another person with intent to harm through inflicting physical injury (Skeem et al., 2011), The term aggression includes intent to harm physically *or* psychologically. Both are prevalent terms in the literature referring to physical aggression.

for advancing tertiary prevention and intervention practices in the CLS. The next section explores the link between trauma and violent offending to identify important factors that help to explain the trauma-aggression link.

## Impact of Trauma Exposures on Violent Offending Behavior and Other Negative Outcomes

There is a reciprocal relationship between traumatic victimization and violence perpetration (Widom, 1989a; Wright & Fagan, 2013). Seminal prospective work by Widom (1989a) suggests physical abuse and neglect were significant predictors of later violent criminal offending; however, most youth did not go on to criminally offend (74%) and only 11 percent had a subsequent arrest for a violent criminal act. Widom (2014) subsequently called for further investigation to identify multiple pathways to aggressive and violent offending. Investigating how early experiences relate to violent behavior, recognizing multiple pathways, and noting how protective factors (e.g., environmental conditions) may influence the relationship between trauma and offending remains an important area for investigation.

Widom's prospective study on sexual abuse experiences leading to sexual offending utilized a longitudinal approach with a matched control group to assess the long-term consequences of childhood abuse and neglect on adult behavior, particularly in terms of criminality and violence (Widom, 1989a; Wilson & Widom, 2010). Widom's findings indicated that participants with histories of childhood sexual abuse were at a significantly higher risk for engaging in sexual offending behaviors in adulthood. This aligns with the broader literature suggesting that early experiences of abuse can lead to a cycle of violence, where victims may become perpetrators later in life (Smith & Thornberry, 1995; McCuish et al., 2014, 2016). The evidence suggests that the trauma associated with such abuse can lead to maladaptive coping

mechanisms, further entrenching the cycle of offending (Jung et al., 2017; Williams & Herrera, 2007).

An early study supported the assertion that adverse childhood experiences (ACEs) are not isolated events, and have a cumulative effect (Dong et al., 2004). Duke and colleagues (2010) reported that the risk of offending increased by 35-144% as ACEs accumulated among a community sample of 130,000 students. Reported as the first study of ACEs with a CLS sample, Grevstad (2010) addressed the interrelatedness of ACEs in a high-risk population of youth involved in the CLS and found prevalence rates 3 times higher than earlier studies in the general population (see Felitti et al., 1998). Baglivio, Epps, and colleagues (2014a) found youth in the CLS were 4 times more likely to report 4+ ACEs. Baglivio and Epps (2016) replicated the work of Dong and colleagues (2004) with a youth offending population in Florida (*n*=64,329) who were arrested between 2007-2012 and had reached the age of 18. The study highlighted the cumulative differences among males and minoritized youth who remain disproportionately represented in the CLS. They found that ACE exposure rates were notably high for both males and minoritized youth. For example, Black and Latinx youth reported higher rates of family violence (up to 82%), and community violence compared to their White counterparts, with minoritized males being particularly vulnerable to witnessing or experiencing violence within their communities (Fox et al., 2015). These differential cumulative trauma exposures place minoritized youth at increased risk for CLS involvement through violent offending. Youth with exposure to one ACE had a significantly higher likelihood of having another ACE, with odds ratios as high as 1,286 times higher than youth reporting no ACEs. Among youth experiencing at least one ACE, 67.5% reported four or more additional exposures, and 24.5% reported exposure to six or more additional ACEs. These findings confirm the results of the original ACE study

(Felitti et al., 1998) and the work of Dong and colleagues (2004), highlighting the common occurrence of multiple ACEs in a diverse CLS sample.

A recent systematic review and meta-analysis by Yohros (2022) examined the trauma-reoffending link and found significant variations among studies, with some showing a strong correlation and others reporting no direct link. Yohros (2022) quantified these differences by noting that studies with longer follow-up periods and more detailed measures of trauma exposure were more likely to report a trauma-reoffending connection, while studies with shorter timeframes or more limited trauma assessments often found no relationship. The study examined 26 effect sizes nested within 14 studies, with sample sizes ranging from 100 to 50,000, and found an overall significant association between ACEs and reoffending. This suggests that methodological differences, such as the duration of follow-up and the comprehensiveness of trauma measurement, play a critical role in determining whether a trauma-reoffending link is observed (Baglivio et al., 2016). Despite these methodological inconsistencies, Yohros (2022) suggested several possible mechanisms that might explain the trauma-offending relationship, such as welfare involvement, negative emotionality, current drug use, co-occurring mental health problems, and drug treatment. However, these mechanisms were not tested directly in the studies reviewed; rather, they were proposed as factors that could potentially influence the trauma-reoffending link in both general and minoritized youth populations. These findings highlight the need for further research to explicitly explore how certain types of adversities influence offending.

The findings also emphasize the need for attention to trauma exposure types and the importance of assessing cumulative trauma exposures rather than focusing on an individual (single incident) experience in isolation. Baglivio and colleagues (2021) examined whether

cumulative ACEs differentiated youth who violently offend and their victims. Results suggest that youth who had cumulative ACE exposures were more likely to offend across a range of victim groups (e.g., family, authority figures, and other groups). With each additional trauma exposure, there was an increased chance of victimizing family (19%), an authority figure (4.8%, and members of other groups (4%). In addition, Fox and colleagues (2015) studied the relationship between ACEs and serious, violent, and chronic (SVC) offending, defined as youth who had acquired three or more felony arrests (*n*=10,714). SVC youth were compared to youth who had only one felony referral (*n*=11,861). The prevalence of ACEs varied across different categories, but the researchers found a significant difference between youth with SVC offending patterns and youth with lower-level offending patterns. SVC youth had both a higher prevalence and composite ACEs score than those with fewer felony referrals. Every additional experience of an ACE increased the risk of SVC offending by 35% after controlling for known risk factors. However, not every ACE had the same impact on the risk for SVC offending. Neither emotional neglect nor household mental illness had an impact. A surprising finding revealed that sexual abuse was not found to be a strong predictor of SVC offending but was a predictor of lower-level offending. Finally, a meta-analysis conducted by Fitton and colleagues (2020) on trauma exposures and violent outcomes revealed that childhood maltreatment was associated with a modest increased risk of later violence perpetration, with an overall odds ratio of 1.8. Additionally, the risk was elevated when violent outcomes were ascertained in older individuals and when general population or matched controls were utilized. This suggests that amassed trauma exposures (cumulative trauma) may influence the likelihood of violent offending. Widom (2014) proposed four pathways leading to violence: 1) individuals with an arrest for violence, but no history of child abuse and neglect or PTSD (violence only); 2) individuals with a history of

child abuse and neglect and become violent, but do not develop PTSD; 3) individuals who have a history of child abuse and neglect, develop PTSD, and become violent; and 4) individuals with a history of child abuse and neglect, engage in violence at an early age, and then develop PTSD. This dissertation suggests the possibility of a fifth—those who experience cumulative trauma (including, but not limited to, child abuse and neglect and other forms of trauma) and become violent irrespective of the presence of PTSD.

While children and youth who have experienced cumulative trauma exposures are at a higher risk for both internalizing and externalizing difficulties resulting in PTSD (Khamis, 2019), recent studies have demonstrated that the impact of cumulative trauma extends beyond this disorder (Bremness & Polzin, 2014; Ford et al., 2018; Lyons-Ruth & Brumarlu, 2020; Schneider, 2020; Seay, 2020; van der Kolk et al., 2019; Villalta et al., 2018; Yoon, 2017; Yoon et al., 2017; Zhang et al., 2019), and recent research has contemplated the influence of other factors that might influence outcomes. Many youths do not meet criteria for PTSD and others have symptoms that extend beyond the diagnostic criteria (Ford et al., 2021; van der Kolk, 2019). In response, advocates were successful in developing a new diagnosis, Developmental Trauma Disorder (DTD), that extend beyond the criteria for PTSD and accounted for the symptomatology observed in clinical settings. However, it is important to note that DTD is not yet included in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), despite ongoing efforts to validate its clinical utility (Spinazzola et al., 2018, 2021). Field trials (Spinazzola et al., 2018, 2021) have validated the DTD construct and included are the *affective/somatic dysregulation*, *cognitive/behavioral dysregulation*, *behavioral disinhibition/dyscontrol* domains (see Beauchaine & Cicchetti, 2019; Ford et al., 2022; Weisman et al., 2019). Moreover, DTD and PTSD frequently co-occur, with DTD representing a more

complex sequelae of psychiatric comorbidity (Ford et al., 2022; e.g., both internalizing conditions such as separation anxiety and panic, and externalizing conditions such as ADHD and oppositional defiant disorder). It is possible that youth in the CLS who have experienced cumulative trauma exposures but who fail to meet criteria for PTSD might meet criteria for DTD. However, DTD is a relatively new construct that is not standardly assessed within the CLS. For example, it is not possible to differentiate DTD from PTSD in the DYS sample for the current study. As a result, PTSD will not be analyzed in the present study to avoid drawing inaccurate conclusions about the youth sample, specifically because PTSD is not central to the research questions. It is important to know whether cumulative trauma profiles alone account for aggression while youth are confined as a first step.

Research has long demonstrated that childhood and adolescent acts of aggression lead to long-term negative outcomes (Edwards et al., 2003; Lansford et al., 2007). Early onset of youth aggression is linked with poor outcomes in adolescence (Barkauskienė et al., 2019; Baron & Forde, 2020; Braga et al., 2017; Maschi et al., 2019; van der Zouwen et al., 2018; Vitopoulos et al., 2019), including increased rates of CLS system involvement (Widom, 2017). For example, a meta-analysis conducted by Braga and colleagues (2017) found that trauma exposures in childhood were associated with higher rates of aggression, with sexual abuse and physical abuse more strongly linked than other types of trauma. Aggressive behavior has been a commonly reported consequence of childhood maltreatment (Knutson & Schwartz, 1997) and predicts serious offending (Smith & Thornberry, 1995). For example, in this same meta-analysis, Braga and colleagues (2017) evaluated whether the effects of maltreatment on antisocial or aggressive acts reported by previous studies are real or spurious. The authors proposed that while childhood maltreatment maintains a significant effect on antisocial behavior even when common risk

factors or other potential moderators are tested, the relationship between child maltreatment and juvenile delinquency might not be entirely direct. They suggest that the effects may be spurious because the relationship is weakened when common risk factors are considered, indicating that these factors could be confounding variables influencing both maltreatment and delinquency, rather than maltreatment directly causing delinquency. Additionally, the effects may be overestimated due to publication bias. The Braga et al. (2017) meta-analysis is the only study in this review that suggests this line of reasoning. Most researchers agree that common risk factors include exposure to trauma. For example, DeLisi and Vaughn (2014) asserted that externalizing behaviors such as aggression manifest in response to trauma. As emotions like anger and frustration build, they may lead to aggressive behavior (termed negative emotionality). Consistent with general strain theory (Agnew, 1985, 1992, 2001) further described in the next section, negative emotionality is associated with a failure to achieve goals, removal of a positive stimuli (e.g., freedom of movement in the community), and introduction of negative stimuli (e.g., the incarcerated environment). These negative emotions (DeLisi & Vaughn., 2014), or strains (Agnew, 2001), are the catalyst toward aggression.

When considering these links, it is important to consider further individual and environmental characteristics germane to this dissertation. To fully understand the complex relationship between trauma and CLS involvement for minoritized youth, it is important to examine three critical areas: first, how trauma exposure rates differ across racial and ethnic groups; second, how cumulative trauma manifests in aggressive behaviors within secure facilities; and finally, how the differential treatment of minoritized youth within these facilities may itself trigger or exacerbate aggressive responses. Each of these factors creates a

compounding effect for youth involved in the CLS, particularly youth of color, and offer unique considerations for this dissertation study.

**Differential Rates of Trauma Exposure by Minoritized Youth**

Research consistently shows that racially and ethnically minoritized youth—especially Black, Latinx, and American Indian/Alaska Native adolescents—experience disproportionately high rates of trauma compared to their White peers (Abram et al., 2004; Asnaani & Hall-Clark, 2017; Roberts et al., 2011). In the United States, Black and Latinx children are especially at risk, reporting higher exposure to violence and adversity across their lifespan (Asnaani & Hall-Clark, 2017). National survey data on Adverse Childhood Experiences (ACEs) illustrate this disparity: 61% of Black children and 51% of Hispanic children have experienced at least one ACE, compared to 40% of White children and only 23% of Asian children (Roberts et al., 2011). These disparities emerge early and often widen during adolescence, influenced by factors such as neighborhood violence and poverty. Black youth, for instance, not only accumulate more adverse childhood experiences but also experience more violent victimizations than their White peers—contributing to elevated posttraumatic stress and grief symptoms (Kerig & Bennett, 2013; King et al., 2011). Similarly, Latinx youth share elevated rates of community violence exposure but also face immigration-related stress and discrimination (Asnaani & Hall-Clark, 2017; Kovera, 2019). American Indian/Alaska Native youth grapple with the legacy of historical trauma and present-day adversities at rates two to three times higher than non-Indigenous children (Kerig, 2018). Asian American youth, while generally reporting lower rates of violent victimization, may endure distinct race-based stressors, such as xenophobic harassment (Pane-Seifert et al., 2022).

The 23 trauma exposure types defined in the UCLA PTSD Reaction Index for DSM-5 encompass experiences ranging from various forms of abuse (physical, sexual, emotional) to community violence, serious accidents, traumatic loss, natural disasters, and war (Kira, 2022; Pynoos & Steinberg, 2015). Studies indicate that minoritized youth are disproportionately exposed to many of these forms of trauma. For example, community violence is pervasive in under-resourced Black and Latinx neighborhoods where young people are more likely to witness assaults, hear gunfire, or lose friends to violence (Baglivio et al., 2014b; Roberts et al., 2011). Child maltreatment also shows racial and ethnic disparities: Black and Latinx youth have higher risks of experiencing or witnessing family violence (King et al., 2011). These patterns are reflected in overrepresentation in child-serving systems, with Black children entering the system at rates two to three times higher than White children and often presenting more co-occurring trauma types (Barnert et al., 2018, 2021; King et al., 2011).

Moreover, minoritized youth often experience polyvictimization—multiple, chronic, and varied forms of trauma—rather than a single isolated event (Kerig, 2019). In one large-scale study of justice-involved adolescents in Chicago, over 90% of detained youth (the majority of whom were youth of color) reported at least one form of trauma, with many endorsing multiple exposures (Abram et al., 2004). These disparities stem from interlocking structural inequities—such as over-policing in minoritized neighborhoods, harsher school discipline policies, and systemic racism—that can compound the risk of trauma and re-traumatization (Barnert et al., 2018, 2021). Given that prior work indicates higher rates of community and family violence among youth of color (Baglivio et al., 2014b; Fox et al., 2015), it is plausible that racially minoritized youth will be overrepresented in latent classes reflecting greater or more severe trauma profiles (Baglivio et al., 2015; Ford et al., 2018). Finally, these cumulative and structural

forms of trauma, which include repeated racial discrimination and police aggression, intensify negative psychosocial outcomes including emotional dysregulation (Yoder & Tunstall, 2022) and aggressive behavior. Discussed in the next section, the prevalence and patterns of trauma exposure in confined settings underscore the importance of examining how cumulative trauma shapes aggression. This focus aligns with Research Question 1a of the present study, which asks whether there is variation in cumulative trauma profiles by race/ethnicity—a critical line of inquiry given the well-documented overrepresentation of minoritized youth in systems of care (Ackerman et al., 2024; Kerig, 2019).

### *Cumulative Trauma & Aggression in Secure Residential Facilities*

Youth who enter secure residential facilities almost invariably have extensive trauma histories. In one landmark study, Abram et al. (2004) reported that 92% of detained youth had experienced at least one form of trauma, and most had faced multiple types of victimization. These experiences commonly include physical or sexual abuse, domestic violence, community violence, neglect, and traumatic losses. Gender differences are also observed: female juvenile offenders frequently report higher rates of interpersonal victimization, whereas males are more likely to have witnessed serious violence. As a result, many adolescents arrive in secure facilities having endured a cascade of adverse events. For instance, Ford et al. (2012) documented an average of around five distinct trauma types per youth, underscoring the cumulative nature of their experiences. Not surprisingly, more than two-thirds of justice-involved youth meet criteria for at least one psychiatric disorder—often PTSD or related symptoms—stemming from these repeated exposures.

Cumulative trauma, defined as the aggregation of multiple traumatic stressors over time, has been robustly linked to aggressive or impulsive behaviors and institutional misconduct. Ford

et al. (2012) use the term “complex trauma” to describe how pervasive victimization can erode a young person’s ability to regulate emotion and behavior, often resulting in survival-driven reactions. Indeed, polyvictimized youth are more likely to display externalizing problems such as aggression and defiance (Kerig, 2019). Interpersonal trauma (e.g., physical abuse, sexual abuse, or chronic family violence) appears especially potent: one study noted that male juvenile offenders with multiple forms of trauma exposure, particularly interpersonal trauma, had higher levels of PTSD symptoms and greater propensity for aggressive behavior (Becker & Kerig, 2011). Moreover, the severity of PTSD symptoms has been positively associated with both the frequency and seriousness of delinquent acts, suggesting that trauma-related anger, threat perception, and hypervigilance can directly mediate the link between adversity and aggression (Becker & Kerig, 2011).

Within secure residential settings, physical aggression remains a pressing concern, ranging from altercations among peers to assaults on staff. Recent findings indicate a strong relationship between cumulative trauma histories and violent misconduct in these facilities (Craig et al., 2023). In these studies, mental health problems—particularly those rooted in chronic trauma, such as emotional dysregulation and trauma-related disorders—partially mediate the effect of cumulative trauma on institutional violence. Yet even with these mediators accounted for, a direct and significant association between trauma and misconduct persists, highlighting how trauma itself becomes an “imported” risk factor into confinement (Craig et al., 2023).

Furthermore, youth of color in these facilities often face a compounded burden of trauma. As Puzzanchera et al. (2022) note, Black, Latinx, and American Indian/Alaska Native adolescents are overrepresented in secure care, and many exhibit the highest levels of cumulative

trauma (Baglivio et al., 2014a; Ford et al., 2022). This overrepresentation reflects broader national trends and is germane to the present study's Research Question 1a, which posits that higher-trauma latent classes will be more prevalent among racially minoritized youth. The combination of repeated victimization, systemic disadvantage, and racial/ethnic disparities can intensify trauma's detrimental impacts on self-regulation and increase aggression. For example, cumulative trauma has repeatedly been tied to aggressive behavior within confinement (Craig et al., 2023; Ford et al., 2018). Key mechanisms include hypervigilance, trauma-related anger, and distrust, all of which heighten the likelihood of conflict (DeLisi & Vaughn, 2014). Research Question 2 of this dissertation builds on this evidence by hypothesizing that higher-trauma latent classes will predict more pronounced aggression in secure settings. Such aggression can trigger punitive responses—often disproportionately directed at youth of color—including extended confinement, restraints, and solitary confinement (Kovera, 2019; Wamser-Nanney et al., 2021). These measures can perpetuate a cycle of stress and aggression, compounding the effects of complex trauma.

In sum, an extensive body of literature shows that multiple, overlapping traumas markedly increase the risk of behavioral challenges such as aggression, particularly among racially and ethnically minoritized youth who tend to bear a heavier trauma load (Baglivio et al., 2021; Kerig, 2019). Understanding how trauma clusters into distinct latent classes is crucial for identifying which adolescents are at highest risk for aggression and other negative outcomes. By systematically examining racial/ethnic differences in these trauma profiles and mapping them onto aggression, the present study seeks to inform more targeted interventions within secure residential facilities.

### *Differential Experiences in Facilities Leading to Aggressive Behaviors*

Not all youth experience the secure residential setting in the same way, and research suggests significant racial and ethnic disparities in how young people are treated within juvenile facilities. Youth of color—particularly Black and Native American adolescents—are not only overrepresented in juvenile confinement but also frequently face harsher treatment during their stay. For instance, Black youth are significantly more likely than their White peers to be placed in solitary confinement or subjected to punitive measures such as physical restraints and pepper spray (Kovera, 2019; Wamser-Nanney et al., 2021). Further, physical management interventions are disproportionately used on youth of color, compounding trauma already accrued from adverse life events. While facility-level experiences pose challenges for all confined youth, racially minoritized youth often encounter additional stressors that heighten their risk of aggression (Kovera, 2019). They may be perceived by staff as more threatening, incur harsher disciplinary infractions for the same behaviors exhibited by White peers, or be subjected more frequently to restraints and solitary confinement (Wamser-Nanney et al., 2021). These disproportionate practices—rooted in implicit bias and institutional policies—can exacerbate trauma-related symptoms such as distrust of authority, hypervigilance, and "fight-or-flight" responses (Mendel, 2011).

A feedback loop can arise in this context: youth with higher trauma loads (including discrimination-related and community violence–related stress) may already be primed to perceive threats more acutely. Faced with punitive facility practices, they may respond defensively or aggressively, triggering even more severe discipline (Craig et al., 2023). Over time, this cyclical dynamic can entrench aggression and perpetuate racial disparities within facilities. If, as hypothesized in Research Question 1a, racially minoritized youth

disproportionately occupy "high-trauma" latent classes, we may likewise expect them to engage in more frequent or severe acts of physical aggression (RQ2)—potentially explaining their overexposure to restrictive disciplinary measures.

Overall, these findings underscore how pre-institutional trauma and institutional responses converge to shape the behaviors of youth of color in confinement. The presence of overlapping adversities—community violence, racial discrimination, staff bias, and harsh discipline—highlights the importance of considering race/ethnicity in latent class analyses of trauma. This intersectional approach aligns with the dissertation's Research Questions 1a and 2, which aim to determine whether racially minoritized adolescents are more likely to manifest high-risk trauma profiles and, in turn, exhibit higher rates of aggression.

In summary, considerable evidence supports the trauma-aggression link and its connection to violent or disruptive misconduct, both before and during incarceration. We now turn to the theoretical frameworks that help explain how cumulative trauma leads to criminal-legal system involvement among vulnerable youth. These include general strain theory (GST; Agnew, 2001, 2006) and the bioecological theory of development (Bronfenbrenner, 1979, 2005), which offer insights into the interplay between individual, relational, and structural factors shaping youth outcomes.

## Theoretical Considerations

Research on aggression in the social sciences focuses on the interaction of individual, gene, and environmental influences (Barnes & Tielbeek, 2018). The field has shifted from focusing on the aggressive act itself to changes in individuals over time that predict violent behavior (Tremblay & Côté, 2005; Tremblay et al., 2005). Studies have increasingly integrated developmental theories with ecological theories (Barnes & Tielbeek, 2018; Farrington et al.,

2017; Hartup, 2005; Tremblay et al., 2005) to understand the reciprocal interactions between individual characteristics (e.g., gene expression) and social influences from family, peers, school, and the community over time. Longitudinal studies highlight the need to understand pathways of antisocial behavior, including aggression, over the life course (Parke & Slaby, 1983). This includes emphasizing the importance of interactions in relationships among various environmental contexts (Hartup et al., 2001).

When considering trauma, Liming and Grube (2018) noted a lack of theory guiding research in a systematic review of the effects of cumulative trauma exposure on social, behavioral, emotional, and physical well-being in early childhood. Nonetheless, findings across studies revealed a dose-response relationship indicating an increase in both internalizing and externalizing behavioral problems when children had experienced three or more ACEs. Victimization can occur in different environmental settings, like within families and neighborhoods, that increase risk (Cicchetti & Lynch, 1993; Cicchetti, 2013). The developmental literature has long recognized that multiple stressors can lead to more serious and chronic deleterious outcomes (DeLisi & Vaughn, 2014; Felitti et al., 1998). While much of the literature on cumulative trauma lacks guiding theory (Liming & Grube, 2018), general strain theory is a theoretical model that can inform how traumatic stress can impact aggressive and offending behavior.

**General Strain Theory**

General strain theory (GST) is a general approach to understanding the intersection of criminal behavior, trauma, and aggression (Agnew, 2006; Agnew & Moon, 2018). According to GST, crime is a result of stressors (or strains) that elicit emotions such as anger and depression. Crime is a means to cope with negative emotions to reduce the stressors. Coping with various

strains through crime results when people lack the ability to cope in a manner congruent with the law. If the cost of committing crime is low, coping through crime is more likely, especially when one is predisposed to acting criminally. Agnew described a process whereby individuals are effectively pressured into crime via the perceived strains and the inability to cope in an alternate manner. Strains are experienced as negative through aversive experiences and loss, or by being blocked from goal acquisition. Experiencing one or more strains increases the likelihood of coping through crime. Objective strains are those things that are generally accepted as disliked by all individuals (e.g., physical abuse or assault) and subjective strains are those events or situations that are person-specific and interpreted as aversive. Individuals experience a high level of stress when they anticipate the strains will continue and may act criminally to avoid the strains or to act in revenge against those who harmed them. Acting criminally may provide temporary relief from the strains.

GST focuses primarily on the individual's experiences and perceptions of the strains to predict criminal offending. Strains that are severe, unjust, involve low social control, and incentives to cope through violence lower the ability to cope, and promote negative emotionality, such as anger (Agnew & Moon, 2018). GST assumes that some individual characteristics (e.g., personality traits and emotional reactivity) and some contextual (e.g., aggressive environment) characteristics predispose individuals to respond to strains through criminal acts. GST is fundamentally congruent with models (e.g., social development model (SDM) and cumulative risk models) addressing the effects of the social environment on crime (via an antisocial pathway) despite any potential genetic influences on behavior (Agnew, 2006). For example, the SDM (Catalano & Hawkins, 1996) predicts pathways to aggression and the influence of different ecological factors and settings in either inhibiting or eliciting further aggression at varying

developmental periods. Like Bronfenbrenner's bioecological theory of human development (2005), the model hypothesizes reciprocal relationships across developmental periods and makes broad predictions about the likelihood of antisocial behavior at varying stages of development (Herrenkohl et al., 2003; Herrenkohl, 2011). In addition, cumulative risk modeling has emerged as a preferred lens through which to investigate risk, including child maltreatment and trauma exposures (Belsky, 1980; Cicchetti, 2013; Nair et al., 2003; Rutter, 1979). GST is congruent with this reasoning given it is the accumulation of strains that results in negative emotionality that can lead to aggressive acts.

Strong evidence for GST exists to support a positive association between violent victimization and general criminal offending (see Agnew, 2002; Baron, 2009; Hay & Evans, 2006; Jang & Johnson, 2003; Kort-Butler, 2010; Turanovic & Pratt, 2013). In addition, violence victimization is a severe type of strain that increases the chance of coping through criminal behavior (Agnew, 2002; Piquero & Sealock, 2000, 2004). Although GST assumes that the effects of strains on criminal offending are moderated by other factors such as personality traits, criminal attitudes, and criminal peer associations (Agnew, 2006; Agnew, 2013), results are mixed in this regard (Kort-Butler, 2010; Turanovic & Pratt, 2013). In response to the mixed results, Agnew (2013) modified GST, attributing the mixed results to a lack of attention to multiple risk factors (labeled as conditional effects). Most previous studies focused on a single risk factor. Ousey and colleagues (2015) conducted a moderator analysis of a Multidimensional Risk Index (MRI) and found some evidence that the MRI "moderates the effect of violent victimization on the propensity for violent offending" (p. 169), but the effect was in the opposite direction of the hypothesis (i.e., individuals with higher scores on the MRI were less likely to offend violently). Results did not support Agnew's (2013) assertion that the presence of multiple

risk factors increases the likelihood of violent offending. In fact, Ousey and colleagues (2015) found that youth with higher levels of risk had lower levels of violent offending than those with lower levels of risk.

Nonetheless, GST tells us how accumulated strains lead to negative emotionality and violent offending and highlights the role of emotional reactivity as a precursor criminal behavior while assuming individual differences in response to strains. It is also a helpful theoretical framework to consider how youth may interact with the confined setting. Incarceration itself is a severe strain that may trigger youth to cope through aggression. Given youths entering a secure facility have experienced multiple trauma exposures that represent the accumulation of strains, the addition of another severe strain (incarceration) may further impair youths' ability to cope proactively to address the strain. However, other theoretical perspectives are needed, such as the bioecological model, to address gaps that GST cannot address. The bioecological model offers a framework to understand how the environment influences individual development, whereas GST focuses on how offending behavior develops through stress responses. The next section describes Bronfenbrenner's bioecological model and the influence on youth aggression.

**Bronfenbrenner's Bioecological Model and Youth Aggression**

Understanding youth behavior through an adolescent developmental framework is an established area of interest in the field of juvenile justice (National Research Council, 2013) due to the prevalence of youth violence as a public health and safety concern (Mitton, 2019; World Health Organization, 2014) and the mandate to address the individualized treatment needs of youth to prevent further involvement in the CLS (Askew, 2012; Gardner, 2016). Adolescence is a distinct developmental period with known risk factors that can lead to involvement in the CLS such as risk-taking and experimentation, susceptibility to peer and proximal influences, low

inhibitory responses, and the lack of ability to connect behavior to consequences to enhance decision-making based on a future orientation (Scott & Steinberg, 2003). In addition, aligned with social work's person-in-environment perspective, these risk factors are present in multiple, interacting and overlapping systems, such as home/family, peer/school, and community. Bronfenbrenner's bioecological theory (2005) offers one approach to understand the developmental trajectory associated with youth aggression *and* the influence of the environment. The below section offers an overview of the theory and analyzes its utility in understanding youth aggression.

### *Bioecological Theory in Context*

Many early child development theories differ in their influences (internal versus external) and mostly originate from psychology (Krishnan, 2010; Lefrancois, 1999) and describe stages of development ranging from psychoanalytic theories such as Sigmund Freud's psychosexual theory (1959) and Erik Erikson's psychosocial theory (1950; 1995), behavioral and social learning theories such as Skinner's operant conditioning theory (1948; 1953) and Bandura's social learning theory (1977; 2001), biological theories such as Gesell's (1950) maturation (or milestones to development) theory, and cognitive development theories such as Piaget's (1952; Piaget & Cook, 1954) 4 stages of cognitive development theory and Vygotsky's (1978) sociocultural theory. However, Bronfenbrenner (2005) was concerned that most of the theories were largely tested in controlled settings, with limited utility.

Bronfenbrenner's bioecological theory assumes a constructivist model of development (Shelton, 2019) with the person as an active participant who explores the environment to make sense of it and tries to adapt, and through this interchange constructs an understanding of the environment and acquires skills to deal with it. Bronfenbrenner's bioecological theory (1979,

2005) applies to all development, not just positive development. Individuals are active participants in their environments, and continuously adapt to an ever-changing environment that, in turn, adapts to the person (reciprocal influences) through mutual accommodations.

Environmental characteristics and contexts (Bronfenbrenner, 1979, 1989; Rosa & Tudge, 2013) are known as the microsystem (people, activities, roles and relationships in the person's immediate environment), mesosystem (linkages between two or more settings that include the person), exosystem (linkages between two or more settings that exclude the person while still having indirect influence), and the macrosystem (a pattern of societal and cultural institutions and influences across the microsystem, mesosystem, and exosystem that influence the person). Bronfenbrenner (1979) asserted that the environment could not be ignored with accommodations between a person and the environment (ecological transitions) being a determinant of developmental outcomes. Bronfenbrenner (1979) postulated that change occurs over time and space in reciprocal influences between the person and the environment.

The second phase of the theory included reflection on how the individual influences one's own development, and articulated process connections between person and context (Bronfenbrenner, 1988, 1989). Bronfenbrenner spent a lot of time conceptualizing the environment and revisited the role of the individual in development and, specifically, on the effects of the passage of time. He introduced modifications to the microsystem (psychological characteristics of the individual that impacts development) and macrosystem (patterns of culture and society to include beliefs systems, social and religious classes, or groups) and began writing in terms of the Person-Process-Context Model to evaluate the interaction of person and context (Bronfenbrenner, 1999, 2005; Rosa & Tudge, 2013). The chronosystem represents the change in individuals and environments over time. Developmental considerations within this theory now

included the effects of the passage of time and the interactions between a complex person and various settings that could either be constructive or destructive. Later modifications of the theory included influences of both individual and environmental characteristics on proximal processes (activities a person engages in) and evolved to the current bioecological model, represented by the Process-Person-Context-Time (PPCT) Model. This process assumes a progression in the complexity of interactions and a reciprocal effect that strengthens with frequency (Bronfenbrenner, 2005; Bronfenbrenner & Ceci, 1994; Rosa & Tudge, 2013). Additionally, proximal processes influence the genotype and can alter biological gene expression, with more stable and predictable environments predicting healthier development.

### *Applicability to Youth Aggression*

Aggression research followed a similar path as the development of Bronfenbrenner's bioecological theory. Hartup (2005) described a shift in the study of aggression from a focus on the acts of individuals to a focus inclusive of the situations that elicit aggression, including developmental consequences of reciprocal interactions between adolescents, families and peers, gene-environment, and exposure to community violence. The overall trend is toward developmentally oriented research (Tremblay et al., 2005).

Research in the 1960s offered a focus on individuals and limited social interactions that tended to increase the aggressive act with little attention to mesosystem or macrosystem influences. Very few longitudinal studies offered insight into aggression until the 1980s when developmental processes were highlighted (Parke & Slaby, 1983). Aggression research has developed from a bias toward childhood studies to adolescence and aggression across the lifespan (Hartup et al., 2001) to include an emphasis on the importance of interactions in relationships. Context is now central to aggression research and the focus includes ecological

factors such as the effect of the community on the development and expression of aggression (Tremblay et al., 2005).

### *Utility For Research on Aggression/Inclusivity of Diverse Human Experiences*

Bronfenbrenner's bioecological theory can be applied to any person, dyad, setting, culture, or society. This is important in social work where the person-in-context is foundational (Richmond, 1917) with an examination of the use and influence of power in society. It has broad implications for social policy for a wide range of issues and groups. Bronfenbrenner's work has specific utility in aggression to understand interactions of family, peers, community and schools (mesosystem), influence of gender, race/ethnicity and immigrant status and language, cultural barriers (microsystem) and how family or peers influence how one exhibits aggression or serve as a protective factor (microsystem) against it through supportive family or peer relations. This also includes an examination of the influence of schools embedded in neighborhoods (exosystem), and how the influences vary across cultures and contexts that can perpetuate inequality and contribute to aggression (Espelage, 2014). Bronfenbrenner's work considered diverse human experiences regarding gender, race and social class effects, and the role of power (Shelton, 2019).

The bioecological theory promotes a good understanding of the comprehensive influences across multiple settings but does not clearly delineate predictive models to prevent aggression. It is only possible to understand behavior in retrospect since it is not possible to predict what new influences will enter a person's environment from day to day. It organizes and explains relationships but is limited. Understanding the intersection of trauma and aggression in youth through an integrative theoretical lens offers a more comprehensive view of the issue.

**Integrating GST with Bioecological Theory**

While GST is focused on strains affecting the individual, bioecological theory is focused on the environment. Integrating elements of the two perspectives ensures that the tenets of trauma-responsive care are addressed and offers an integrated view of trauma and aggression at the setting level. The secure residential setting becomes a microsystem within which the youth who are confined will interact and respond to the environment. Unlike a family setting or other microsystems, the secure setting constrains them further, thus creating an additional layer of severe strain. Although the setting level and its impact upon youth will not be investigated directly in this study, the findings of this study related to cumulative trauma profiles and the resultant association with aggression is an important initial step to inform a future research agenda that explicitly includes the setting level.

The disparities in trauma exposure cannot be separated from the broader social context. Bronfenbrenner's (2005) Bioecological Theory helps explain how multiple environmental systems contribute to these patterns. At the macrosystem level, structural inequalities (e.g., racism, poverty, community disinvestment) lead to higher violence and instability in neighborhoods predominantly inhabited by minoritized families (Loman & Gunnar, 2010). Historic and systemic racism has concentrated Black and Latino children in high-crime areas and under-resourced schools, increasing their risk for various traumas (Roberts et al., 2011). The exosystem, which includes community institutions and local policies, also plays a role—for instance, child welfare agencies more frequently remove children of color from their homes, an experience that can be traumatic in and of itself (Abrams et al., 2021). At the microsystem level, minoritized youth may experience family stress and violence linked to economic hardship or discrimination faced by their parents. The chronosystem, reflecting historical time, is also

relevant; events such as the COVID-19 pandemic have had disproportionate traumatic impacts on minority communities. In essence, minoritized youth are often situated at the nexus of risk-filled environments across multiple layers of their ecosystem. This perspective aligns with General Strain Theory (GST), which posits that the accumulation of stressors across life domains increases the likelihood of delinquency or other maladaptive outcomes (Agnew, 1992). Here, trauma exposures function as profound strains: the more a young person endures, the more intense the strain (i.e., stress) becomes. In addition to objective measures, perceptions of fairness play a critical role. Many minoritized youth report perceiving bias or unfair treatment from facility staff, often feeling that they are held to stricter standards than their White counterparts. According to General Strain Theory, strains perceived as unjust or discriminatory magnify feelings of anger (Agnew, 1992). Youth who believe they are being singled out because of their race are likely to experience heightened resentment, which may manifest as defiant or aggressive behavior. Qualitative studies indicate that negative interactions with staff—such as experiences of racial slurs and differential rule enforcement—undermine trust and contribute to aggressive responses. Research on procedural justice in institutional settings has found that when youth perceive staff as fair and supportive, violent incidents decrease; conversely, perceptions of injustice are linked with higher aggression (Loman & Gunnar, 2010).

Bronfenbrenner's Bioecological Theory further illuminates these dynamics by considering the influence of broader societal contexts. Within the facility—the microsystem—racial biases from the macrosystem can shape daily interactions. For example, staff may unconsciously interpret a youth's behavior through a biased lens (e.g., viewing a Black teen's assertiveness as aggression) while offering more lenient responses to similar behaviors by White teens. Over time, these micro-level interactions contribute to a hostile institutional climate,

exacerbating feelings of isolation and injustice among minoritized youth. Facility-specific strains, such as prolonged isolation, lack of family contact, and discriminatory disciplinary practices, further elevate stress levels. General Strain Theory posits that such chronic strains increase negative emotions, leading youth to resort to aggression as a maladaptive coping mechanism.

Peer and staff dynamics within facilities also play a role in eliciting aggressive behavior Brown et al., 2019). Racial grouping and intergroup tensions sometimes arise, mirroring societal stratifications and potentially leading to conflicts. For some youth, demonstrating toughness becomes a survival strategy, particularly in environments where perceived threats are common. Ultimately, addressing these differential experiences requires the implementation of trauma-informed, equitable practices. Interventions that eliminate harmful punitive practices, provide culturally responsive support, and foster positive staff–youth relationships can help break the cycle of trauma and aggression in secure facilities (Brown et al., 2019).

Research reveals that minoritized youth experience higher levels of trauma exposure compared to White youth (Wen et al., 2023), with significant variations among different racial and ethnic groups. The cumulative nature of these traumas is especially evident among justice-involved youth, many of whom enter secure residential facilities with extensive trauma histories. These cumulative traumas contribute to increased aggression within facilities—a relationship that is further compounded by differential treatment based on race and ethnicity. The frameworks of General Strain Theory and Bronfenbrenner's Bioecological Theory provide valuable insights into how individual, institutional, and societal factors converge to influence aggressive behavior in these settings. Implementing trauma-informed, equitable practices in juvenile facilities is

essential to mitigating these negative outcomes and supporting the rehabilitation of all youth, particularly those from minoritized backgrounds.

**Critical Race Theory (CRT): Racial Disparities in Context**

No study can investigate the youth criminal legal system (CLS) without recognizing the deeply entrenched racial and ethnic disparities that pervade every point of contact in the system. Critical Race Theory (CRT) provides an essential framework for understanding these disparities not as incidental or temporary aberrations, but as manifestations of structural racism embedded within the very foundations of the legal system (Jordan, 2021; Webb et al., 2020). CRT is a framework that reveals racism as a deeply ingrained element of legal and societal structures, consistent with its core tenet that racism is endemic to American society (Delgado & Stefancic, 2023).. CRT challenges the notion of "colorblindness" and exposes the systemic and institutionalized components of racial inequality (Delgado & Stefancic, 2017). In the context of the youth criminal legal system, CRT provides a critical lens through which the overrepresentation of minoritized youth—particularly Black and Latinx youth—can be understood as the product of historical and ongoing discriminatory practices embedded within policies, laws, and social institutions (Abrams et al., 2021; Marlowe et al., 2020). Although CRT includes several key tenets, this study centers on the principle that racism is endemic to the criminal legal system, reflecting its deep roots in broader U.S. society.

When applied to youth who are incarcerated, CRT reveals that punitive practices and policies often reinforce differential treatment of minoritized youth compared to white youth (Dutil, 2020). For example, the school-to-prison pipeline illustrates how behaviors among minoritized students are disproportionately criminalized in educational settings, often resulting in exclusionary discipline that increases the likelihood of CLS involvement (Bradshaw et al., 2010;

Himmelstein & Bruckner, 2011). CRT, particularly its tenet that racism is also endemic to U.S. institutions, provides a useful lens for understanding how youth of color—especially those exhibiting aggressive behaviors related to trauma—are more likely than their white peers to be sentenced to longer, facility-based placements (Jordan, 2021) . CRT highlights how ostensibly race-neutral policies (e.g., zero-tolerance discipline, mandatory minimum sentencing, and risk assessment tools) can reproduce racial disparities by failing to account for the sociohistorical context of racism and trauma (Delgado & Stefancic, 2023; Torres, 2019). This systemic bias is not merely a matter of individual prejudice but is embedded in the structures that govern youth behavior and discipline in systems, including the CLS, ultimately resulting in a cycle of marginalization and criminalization for racially minoritized youth (Delgado & Stefancic, 2023).

When examining trauma exposure and aggressive behavior among confined youths, CRT demands recognition of how institutional responses to both trauma and behavior are racialized. The youth CLS has historically pathologized the behaviors of Black and Brown youth while simultaneously failing to recognize their trauma experiences (Abrams et al., 2021). This institutional failure contributes to a system that responds to the behaviors of minoritized youth through punishment rather than healing. For youth carrying histories of complex trauma, secure confinement itself can trigger trauma responses that may manifest as aggression, creating a cycle of institutional harm (Ford et al., 2012). While this is true for all youth, Black and Brown youth are disproportionately impacted due to the compounding effects of racialized trauma—experiences of racism, discrimination, and systemic exclusion—that are rarely explicitly acknowledged or addressed within the CLS (Keels, 2024). CRT, particularly its focus on the critique of colorblind policies, offers a lens to understand why trauma among racially minoritized youth is both produced by, and invisible to, system actors (Delgado & Stefancic, 2023).

Racialized trauma—such as being profiled, policed, or punished more harshly—often intersects with prior experiences of violence or adversity, yet the system lacks both assessment tools and therapeutic services that recognize racism itself as traumatic (Kirkinis et al., 2018). By failing to name or treat racialized trauma, the system reinforces the cycle of harm and contributes to the persistence of disparities at every stage, from intake to disposition.

Applying CRT to youth experiences in secure residential settings calls for a critical examination of the structural factors that perpetuate inequity, including systemic racism embedded within institutional practices. By acknowledging these intersecting sources of oppression, best illustrated by the treatment of Black youths at each point of the criminal legal system, CRT advocates for prioritizing rehabilitation over punishment and uncovering the systemic biases that prevent equitable treatment for minoritized youth during confinement (Delgado & Stefancic, 2017; Crenshaw, 1991). Through incorporating a CRT perspective, this study acknowledges that differences in aggressive behavior cannot be understood simply as individual-level variations but must be examined within the context of systemic racism that shapes both youth experiences prior to confinement and institutional responses during confinement.

**Application to Understanding the Secure Residential Setting and its Impact**

The accumulation of risk across ecological levels makes it more likely a youth will act aggressively (Baron & Forde, 2020). Through a CRT lens, we must recognize that these ecological risks are not distributed equally – systemic racism creates disproportionate risk factors for youth of color. Environments can either reduce or increase risk (Ford & Blaustein, 2013; Sichel et al., 2019), with secure residential settings often reproducing the same racial hierarchies and inequities found in broader society.

Experiences occur within the context of a particular environment and interact with multiple factors to determine physiological and psychological impact. Bioecological theory (Bronfenbrenner, 2005) implies that once youths enter the CLS, we need to think carefully about how the environment affects them to avoid inflicting further harm, particularly for youth of color who may experience additional stressors related to racial discrimination within these settings. GST implies at a minimum the CLS can anticipate heightened strain and stress responses among youth who enter a secure facility, especially for youth with multiple severe strains, such as cumulative trauma exposures, who in turn may react aggressively to the environment. Racialized youth may experience the additional strain of navigating environments that may replicate patterns of racial bias in staff interactions, disciplinary decisions, and access to rehabilitative programming.

Applying both theories through a CRT framework provides an opportunity to understand better how the environment may affect individuals who are admitted to secure facilities, highlighting the need to consider the unique and often overlooked experiences of racial and ethnic minoritized youth within these settings. In addition, factors such as the effects from maltreatment and trauma exposure, peer, family, and community contextual factors, and cultural norms interact to determine the likelihood of perpetrating violence during the lifespan (Fox et al., 2015; Krug et al., 2002; Martin et al., 2015; Supkoff et al., 2012). Once confined, these factors include the secure environment as a critical influence.

The interplay between trauma and aggression represents a critical juncture in the field, necessitating a more nuanced exploration of the diverse manifestations of violence among youth. Widom's (1989a, 1989b) seminal works on the pathways to violence underscores the need to understand the multifaceted nature of aggression, arguing for a more heterogeneous orientation

to examining the impact of trauma. CRT extends this understanding by calling attention to how the trauma histories of minoritized youth may be overlooked, misinterpreted, or pathologized differently than those of white youth. This dissertation study seeks to understand one part of the complex nature of youths' risk for offending aggressively and to contribute to a more comprehensive understanding of the profound impact of trauma on physical aggression outcomes to advance policy and practice toward effective treatment of vulnerable youth.

It is important to understand the pathways that lead to aggression, and how the CLS can effectively reduce the likelihood of further harm to the community (McNeill, 2013; Palmer, 2014). Once offending behavior comes to the attention of the CLS, the system has a direct impact on the future likelihood of youth exhibiting aggression and reoffending (Maschi et al., 2019). Secure residential environments that prevent further harm and are sensitive to the individual needs of youth (Ford & Blaustein, 2013; Sichel et al., 2019) involved in the CLS focus on treatment interventions toward the aim of rehabilitation. However, this rehabilitation framework must explicitly acknowledge and address the distinct experiences of racial and ethnic minoritized youth who continue to be overrepresented in the CLS - a reality that CRT helps us understand as the product of historical oppression and systemic inequities rather than individual pathology.

**Foundational Studies using Person-Centered Approaches that Inform this Dissertation**

Building on these theoretical frameworks, particularly the need to center the experiences of marginalized youth, recent studies have employed person-centered approaches like latent class analysis to better capture the heterogeneous patterns of trauma exposure and system involvement among CLS-involved youth. However, person-centered approaches in CLS literature are quite uncommon despite their utility. Thus, the two foundational studies described next are particularly

informative not only for understanding how this methodological approach can illuminate the complex intersections of trauma, race, and CLS involvement but they directly inform this study. Each of these studies are discussed in turn.

Charak and colleagues (2019) conducted a study that consisted of 809 youth (210 girls, 599 boys) who were recruited from a juvenile detention center in the Western United States. The age range of the participants was between 12 to 19 years old, with an average age of 16.08 years. The racial and ethnic composition of the sample reflected the justice-involved population in the region, with 53.6% White/Caucasian, 25.8% Hispanic/Latino, and smaller percentages of other ethnicities such as multi-racial, Pacific Islander Native Hawaiian, African American, Native American, and Asian American. This study was one of the first with a CLS-involved sample who were confined to explore profiles of these youth using latent class analysis (LCA). Specifically, the study aimed to examine the distribution of adolescents across latent classes based on their exposure to different types of adversity. As they demonstrated, person-centered approaches, such as LCA, are useful in identifying heterogeneous subgroups within a population to investigate the patterns of trauma exposures.

Three latent classes were identified among the sample of juvenile detainees: mixed adversity (MA), violent environment (VE), and polyvictimization (PV), respectively. The MA class, which included approximately 40% of the sample and had significantly lower exposure to each type of adversity compared to the other two classes. The VE class, which also included approximately 40% of the sample, had higher exposure to various forms of violence, losses, and potentially traumatic events compared to the MA class. The PV class, which included slightly less than 20% of the sample and had the highest exposure to all types of adversity, including emotional abuse, sexual abuse, neglect, violence, conflict, abandonment, and parental drug use.

PV youth reported high rates of sexual abuse, physical assault, witnessing severe violence, and severe illness or injury.

These three latent classes represented different levels of exposure to adversity and trauma among CLS-involved youth. PV youth were more likely to report exposure to all forms of adversity, including maltreatment, family violence, and impaired caregivers. They also had higher levels of emotion dysregulation, PTSD symptoms, depression/anxiety symptoms, somatic complaints, and suicidality compared to MA and VE youth. PV youth were more likely than MA youth to report emotional abuse, sexual abuse, neglect, interparental/intrafamilial violence and conflict, abandonment by parent(s), and parent(s) using drugs. As stated, they also reported high rates of sexual abuse, physical assault, or abuse, witnessing severe violence, and severe illness or injury. The study found that almost all CLS-involved youth had substantial lifetime exposure to traumatic stressors and adversity. PV youth in particular required assistance with extreme emotion dysregulation and had higher rates of internalizing and externalizing problems.

Ford and colleagues (2013) utilized latent class analysis (LCA) to identify victimization and trauma exposure profiles among juvenile justice-involved youths using the Traumatic Experiences Screening Instrument (TESI). The Massachusetts Youth Screening Instrument, Version 2 (MAYSI-2), was also administered to assess various psychosocial domains. Data were collected through self-report measures at intake within 24-72 hours of admission to detention centers. The study's sample consisted of 1959 youths, 76% male, aged 10-17 years, with a median age of 14, who were newly admitted to juvenile detention facilities in Connecticut over 3.5 years. The racial and ethnic composition was 26% White (non-Hispanic), 43% African American, and 30.5% Hispanic, reflecting the demographics of detained youths in Connecticut.

The study identified three distinct latent classes of adversity: a poly-victim class (PV), a relatively moderate adversity class (RMA), and a low adversity class (LA). The PV class, comprising 5% of the sample, reported an average of 11.4 types of adversity, with high rates of traumatic victimization and severe emotional and behavioral problems. The PV class also exhibited statistically significantly higher scores on psychometric measures, including posttraumatic stress symptoms across re-experiencing, avoidance, and hyperarousal clusters. Furthermore, the PV class had a greater proportion of females compared to males and included a significant number of youths of color. The RMA class accounted for 36% of the sample and reported an average of 8.9 types of adversity, with substantial non-victimization traumatic adversity. The LA class, making up 59% of the sample, reported an average of 7.4 adversity types.

In the PV class, females were overrepresented, with a greater proportion assigned to this class compared to boys (12.7% girls vs. 3.3% boys). Additionally, the PV class included a significant representation of youth of color, with 51% of its members being from these groups. However, there was a smaller proportion of Hispanic youth in the PV class compared to non-Hispanic White or African American youth. This demographic detail highlights the prevalence of polyvictimization among minoritized youths in the CLS and underscores the need for targeted interventions and support for this vulnerable population. The study concluded that within the CLS, a distinct subgroup of PV youths, particularly females and youth of color, face severe behavioral and mental health challenges due to their extensive exposure to multiple types of adversity.

Both the Charak et al. (2019) and Ford et al. (2013) studies provide significant insights into the trauma profiles of justice-involved youth using latent class analysis (LCA). Both studies

identified a highly vulnerable polyvictimized class with elevated clinical needs, suggesting that different trauma profiles may manifest in distinct behavioral presentations during confinement. Furthermore, these studies underscore the importance of examining how intersecting identities - including race, ethnicity, and gender - shape both trauma exposure patterns and subsequent behavioral responses within institutional settings.

This dissertation builds upon and extends these studies in several ways. This current study differs by focusing on a more diverse sample of youth in a different geographical region of the United States and extending the research by exploring how cumulative trauma profiles predict aggression within long-term secure residential facilities. Unlike the previous studies, which primarily examined the relationship between trauma and internalizing problems (e.g., emotion regulation and PTSD), this study will investigate externalizing behavior, particularly physical aggression, while youth are confined. While both prior studies made significant contributions to understanding polyvictimization and its behavioral health sequelae, neither specifically examined physical aggression within the context of long-term confinement. In addition, this dissertation study uniquely emphasizes racial and ethnic differences in trauma profiles and aggression outcomes, seeking to understand how these factors interact within a population disproportionately represented in the youth criminal legal system. By using administrative data from the Colorado Division of Youth Services, this study not only replicates certain aspects of the earlier research but also advances the field by examining a longer-term confinement setting and exploring how trauma profiles influence behavior in that context, particularly among racial and ethnic minoritized youth.

## Gaps in the Literature

There are several notable gaps in the literature that this study aims to address. First, methods to evaluate trauma have been inconsistent across studies investigating the link between trauma, aggression, and offending. Fewer than half of the studies examining trauma exposures among youth in secure residential facilities administered a validated instrument to assess both trauma exposure and trauma symptoms (Charak et al., 2019; Miller & Marsee, 2019; Mozley et al., 2018; Olafson et al., 2018). For example, Butler et al. (2020) did not utilize a standardized instrument to assess trauma exposure and instead used collateral information to confirm traumatic experiences. In addition, cumulative trauma exposure was not analyzed in the study like most studies in this area.

As a result of the lack of standardized measures, critical questions remain. First, additional studies are needed that utilize validated measures of trauma to increase the accuracy and reliability of the results. The varying approaches to screening and assessing trauma exposure across studies is problematic as it results in an inability to compare findings across studies (Yohros, 2022). For example, most of the studies reviewed by Yohros (2022) used items from a risk assessment tool (Positive Achievement Change Tool—PACT; Baglivio et al., 2014b) to assess exposure to adverse childhood events (ACEs) based on the original ten items examined by Felitti and colleagues (1998). Second, while research has established the prevalence of trauma exposure among justice-involved youth, limited evidence exists on how cumulative trauma may impact aggressive behavior in confined settings and in response to setting-level factors, such as physical management by staff. Understanding these relationships is particularly critical given that secure facilities can inadvertently replicate traumatic experiences through their restrictive environments, disciplinary practices, and staff-youth power dynamics. Yet few studies have

examined how different patterns of trauma exposure might influence youth's behavioral responses to these institutional stressors, especially among youth carrying histories of complex trauma.

Next, while the trauma-aggression-offending link is well established, most of this evidence stems from variable-centered analyses, which investigate the relationships between variables of interest. Variable-centered analyses are useful as they help to establish links between different factors, such as the trauma-aggression relationship. Person-centered analyses have rarely been used despite their utility. This type of analysis allows for a comprehensive understanding of the patterns of adversity experienced by the participants and how they differed across the identified classes. By using LCA, heterogeneity within the sample is identified through specific subgroups with different levels and types of adversity exposure. This approach helps to uncover meaningful distinctions between the classes, such as differences in the types and severity of adversities experienced, as well as demographic characteristics. Person-centered methodologies for data analysis provide a framework for capturing the diversity present within a given sample (Herrenkohl, 2015; Roesch, Villodas, & Villodas, 2010). LCA is a statistical approach centered on individuals and aimed at categorizing them into groups that are not directly observable (Collins & Lanza, 2010). By focusing on dimensions such as trauma exposure types, LCA utilizes these variables to identify latent classes representing distinct patterns. Rather than isolating exact individual experiences, this method leverages natural patterns to identify underlying themes and generate the most appropriate statistical model. Evaluation of class solutions considers factors like interpretability, clinical relevance, and reproducibility. Through LCA, multiple dimensions can be streamlined into a more concise and comprehensive latent class structure reflecting the complexity of trauma exposure data (Collins & Lanza, 2010; Lanza

et al., 2013). Given the considerable overlap between maltreatment subtypes and the intricate nature of youth's trauma exposures over time, LCA is a valuable and well-suited tool for capturing the varied experiences of youth who reside in secure residential facilities.

Person-centered analyses identify subgroups based on a set of variables, which can generate useful profiles that can be used to inform intervention practices. Consequently, analytic techniques, such as LCA, can be effectively used to identify trauma profiles of youth who are confined, which can inform the development and implementation of targeted intervention practices. However, person-centered findings are limited. As described above, Ford and colleagues (2013) investigated symptoms of post-traumatic stress disorder but did not include adverse experiences related to their caregivers. In contrast, Charak et al. (2019) used LCA and found a three-class solution for youth who are justice system-involved showing classes for mixed adversity (MA), youth living in violent environments (VE), and youth who have experienced poly-victimization (PV). While this study extended the Ford et al. (2013) study by including caregiver trauma and poly-victimization, it did not consider the impact of the confined setting on youth behavior which is reasonably expected to differ between short-term detention and long-term commitment in a secure residential setting (Loughran et al., 2009). Youth who are in short-term detention facilities may differ from youth considered in the ‘deep end’ of the youth CLS (Oglesby-Neal & Peterson, 2021). Thus, their sample may be considered at lower risk compared to youth who have been committed (i.e., sentenced) to longer lengths of stay in the CLS. Youth who experience long-term stays in secure residential settings experience more exposure to potential environmental impacts on their behavior. It is unknown whether the rate of cumulative trauma among youth in the CLS committed to longer-term care differs from detained youth and whether they differ in other important ways, such as the frequency of aggression while confined.

Furthermore, while Charak et al. (2019) examined differences in internalizing problems (e.g., emotion regulation) across these classes, they did not examine externalizing problems, such as aggression. This is an important gap as there is evidence to suggest that irrespective of the individual level characteristics of the youth (e.g., behavioral health problems), the ecological setting may matter in whether aggression is exhibited.

The CLS increasingly recognizes the importance of understanding the intersection of trauma and aggression in youth in secure residential facilities (Elwyn et al., 2017). Although minoritized youth are disproportionately incarcerated in the United States, most samples in prior studies are predominantly White (e.g., Charak et al., 2019 with 54% of their sample identifying as White), limiting the generalizability of the findings. In addition, studies often pathologize the youths' behaviors, such as characterizing them as callus and unemotional, which negates the impact of and reaction to prior traumatization. Individual factors such as trauma history may elicit aggression in traumatized youth which may serve as a response to the environment. It is necessary to further examine the relationship between cumulative trauma and aggression before further analyzing setting-level characteristics that may elicit aggression in future studies.

## The Present Study

The purpose of this study is to first establish latent classes of cumulative trauma exposures for all DYS youth whose legal custody was transferred to the Colorado DYS from fiscal years 2018-2021, and to examine how the latent classes differ based on demographic characteristics (e.g., race and gender identity), and whether latent class membership predicts aggression. The study is a nonexperimental quantitative associational and comparative design utilizing DYS administrative data gathered from a) the UCLA PTSD Reaction Index- Version 5 (Pynoos & Steinberg, 2015) instrument that measures trauma types and exposure, and (b)

administrative data of aggression incidents in the secure residential facilities (i.e., incident reports). This study extends the literature by including a more racially and ethnically diverse sample of youth who have been committed to long-term stays in residential care and by examining externalizing behavior (i.e., aggression) while confined. Building upon the work of Charak and colleagues (2019) and Ford and colleagues (2013), it is expected that these findings will highlight the unique needs of diverse youth who are confined to long-term residential stays, thus informing how practitioners and administrators can address the treatment needs of the youth through targeted interventions. As detailed in chapter 1, the following research questions will be examined:

**RQ1:** What cumulative trauma profiles exist among youth in secure residential facilities in Colorado?

**RQ1a:** How are racial and ethnic minoritized groups distributed across the identified trauma profiles?

**RQ2:** Does latent class membership predict physical aggression while youth are confined, and does this relationship persist when accounting for racial/ethnic background?

The following chapter will describe the study methodology utilized to answer the research questions, including the study participants, measures and data collection procedures, and the data analytic plan.

# CHAPTER 3

# METHODOLOGY

The Division of Youth Services (DYS) operates 14 Youth Services Centers for youth ages 10-21 who are pre-adjudicated[3] or committed[4] to DYS legal custody. The average length of service for committed youth varies, with recent data indicating an average length of service of 19.6 months (2018-2019), 17.7 months (2020-2021), 18.5 months (2021-2022), and 18.3 months (FY 2022-2023), respectively (Division of Youth Services, 2019, 2020, 2021, 2022, 2023). This study is derived from data on youth who were committed. The Colorado State University Institutional Review Board (IRB) under protocol number 3913 approved the study as exempt secondary research for which consent is not required.

## Participants

I analyzed administrative data from 1,001 youth whose legal custody was transferred to the Division of Youth Services (DYS) in Fiscal Years 2018-2022. This represents all youth committed to DYS in the timeframe specified. Males (*n*=859; 85.9%) comprise most of the sample as compared to females (*n*=141; 14.1%). Gender identity beyond a binary designation was not available in the dataset. Ages ranged from 13 to 20 ($M$ = 16.5, $SD$ = 1.3*)*. Of the total sample, 0.6% identified as Native American, Native Alaskan, Native Hawaiian, or Pacific

[3] Pre-adjudicated, or detained, youth are in secure care temporarily while awaiting disposition on a case, or while serving a short-term sentence on an adjudication (termed conviction in the adult system). DYS has physical custody, but not legal custody.

[4] Commitment is a legal term referenced in Colo. Rev. Stat. § 19-2.5-1117 as a sentencing option for District Court magistrates and judges whereby legal custody is transferred to the Department of Human Services for a determinate period of time. For committed youth in secure residential care, DYS has both physical custody and legal custody.

Islander, 1.0% identified as Asian American, 17.9% identified as Black, 39.8% identified as Latinx, 5.1% identified as Multiracial, and 35.6% identified as White.

In accordance with 19-2-922 C.R.S., a comprehensive assessment is completed for youth who are committed within 35 days. The DYS assessment centers are in each of the four regions of the state. The assessment process includes a comprehensive collection of youth evaluation instruments to determine youths' needs, risks, and responsivity factors, including strengths. DYS assessment specialists administer a classification instrument to identify the level of security required for each youth for the initial residential treatment placement. As part of the assessment process, all youth assent to receive services, and applicable individuals review and sign a consent as required by law. This standard process applies to all services delivered in DYS and is done before the assessment process begins. All youth have a right to refuse participation in the assessment process and subsequent treatment services. No youth in this sample refused to participate in the administration of the measurement tool for trauma exposures.

I chose a purposive sampling design as it consists of all youth between the ages of 10-21 who were committed to the Colorado DYS within the specified time frame. Between fiscal years ending in 2019 and 2020, DYS experienced the largest increase since 2008 in the number of youths committed on violent offenses. According to the DYS annual report (2020), 41% youths were committed for a violent offense as compared to 31% in the previous year. This figure has increased over the last five years. For example, in fiscal year 2014 the percentage was 22.9%. Fiscal year 2020 experienced a 32% increase in youth committed whose offenses included homicide or manslaughter. This illustrates the relevance of the study sample given the focus on violent offending behavior and physical aggression.

I analyzed de-identified data with no ability to tie the responses on the measures back

to a particular youth. According to Tajima (2021), researchers must earn participants' confidence to overcome a legacy of abuse of power by researchers. Additionally, youth who are incarcerated are especially vulnerable and can easily feel coerced. Primary data collection could feel incredibly intrusive (e.g., open-ended interviews). All youth discuss their trauma histories as part of the standard assessment procedures. Trust is not high among youth in confined settings (Pederson et al., 2020), and privacy must be protected to adhere to the highest ethical standards. Among highly traumatized youth, such as the youths in this study, the initial adjustment to the confinement setting presents a substantial risk for both suicidal ideation and suicide attempts adding an additional layer of vulnerability (Bhatta et al., 2014). Using administrative data is one of the least intrusive methods to obtain the information necessary to analyze cumulative trauma's impact on physical aggression while youth are confined (Ford et al., 2012; Logan-Green et al., 2020). Developmental considerations, confinement status, and minoritized status render this youth population vulnerable to re-traumatization while incarcerated (Dierkhising et al., 2014). The use of administrative data decreases the number of times they must participate in interviews about highly sensitive and personal information related to their trauma histories. Thus, using de-identified data for secondary data analysis was chosen as the most appropriate and ethical approach.

**Primary Study Measure**

The primary study measure is the UCLA PTSD Reaction Index- Version 5 (UCLA PTSD RI V5) which is a self-report measure with well-established reliability and validity to assess past trauma exposures and post-traumatic stress disorder (PTSD) symptoms during the past month (Pynoos & Steinberg, 2015). The ratings for PTSD will not be analyzed in this study; only data from items assessing trauma exposures will be used, which is consistent with the present study

aims. A justification for this approach was provided in chapter two. The data used in the present study include items that assessed trauma exposure types, including the frequency of exposure types for each participant (see Table 1).

**Table 1**

*UCLA PTSD Reaction Index- Version 5 Trauma Types*

| | |
|---|---|
| Serious Accidental Injury | Illness/Medical Trauma |
| Community Violence | Domestic Violence |
| School Violence/Emergency | Physical Assault |
| Disaster | Sexual Abuse |
| Physical Abuse | Neglect |
| Psychological Maltreatment/ Emotional Abuse | Impaired Caregiver |
| Sexual Assault/Rape | Kidnapping/Abduction |
| Terrorism | Bereavement |
| Separation | War/Political Violence |
| Forced Displacement | Trafficking/Sexual Exploitation |
| Bullying | Attempted Suicide |
| Witnessed Suicide | |

The UCLA PTSD RI V5 is a widely recognized measure designed to identify lifetime exposure to trauma and to evaluate PTSD symptoms in children and adolescents. Aligned with

the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM–5; American Psychiatric Association, 2013), it serves both clinical and research purposes to identify and quantify PTSD symptoms following exposure to trauma. The UCLA PTSD RI V5 is structured into several key sections, designed to gather information on 23 trauma exposure types and PTSD symptoms. This study utilized the trauma exposures data for all participants to conduct a latent class analysis (LCA) to create trauma profiles to address research question one.

The UCLA PTSD RI V5 assesses a broad spectrum of trauma exposures (See Table 1) to ensure a comprehensive evaluation of the child's or adolescent's experiences. These trauma types include direct exposure to trauma (accidents, natural disasters, physical assaults, and sexual abuse), witnessing trauma (community violence, suicide), learning about trauma (non-observed accidental injury, family violence), and indirect exposure (witnessing domestic violence). It is a robust, reliable, and valid tool for assessing adolescents (Kaplow et al., 2020). Youth answer yes or no (*yes* = 1, *no* = 0) to items of lifetime exposure to the 23 types of trauma exposure.

The validation of the UCLA PTSD RI V5 (Kaplow et al., 2020) involved two independent samples. The first study included 486 youth (54% female, 46% male from 7 to 18 years old) from two major U.S. cities, who completed this measure and a measure of depression. Findings revealed that participants had been exposed to various traumatic events, with a high prevalence of bereavement, often under violent circumstances. The second study focused on 41 youth (59% female, 41% male from 7 to 17 years old) who completed the measure and were also assessed with the clinician-administered PTSD Scale for DSM-5-Child/Adolescent Version as a 'gold standard' structured diagnostic interview. This clinical sample had histories of repeated trauma exposure.

The samples used to validate the UCLA PTSD RI V5 were racially and ethnically diverse, with participants from various backgrounds, although largely urban, which may affect the generalizability of the findings. In Study 1, the sample included children and youth who identified as Black (43%), White (37%), mixed race/biracial (7%), and other (3%), with some not identifying their race/ethnicity (10%). Study 2 had a similar diversity, with 39% of participants identifying as Black, 27% as White, 20% as Latino, and 15% as mixed race/biracial. This diversity is crucial for the generalizability of the tool across different racial and ethnic groups.

The UCLA PTSD RI V5 demonstrated excellent internal consistency with Cronbach's alpha values ranging from good to excellent across different PTSD criterion categories and an overall alpha of 0.96 for the total scale score. Diagnostic accuracy was evidenced by the tool's ability to discriminate between youth with and without PTSD, as compared against the clinician-administered PTSD Scale for DSM-5-Child/Adolescent Version, with receiver operating characteristic (ROC) analyses indicating a total score cutoff of 35 for excellent diagnostic classification accuracy. ROC analyses estimate the accuracy of a measure to diagnose compared to a standardly accepted method such as the use of a diagnostic interview tool. For the PTSD criterion categories, the values ranged from marginally acceptable to excellent: Criterion B category at 0.85-0.86, Criterion C category at 0.67-0.69, Criterion D category at 0.89-0.92, Criterion E category at 0.76-0.81, and the Dissociative subtype score at 0.87-0.95 across two independent studies. These values suggest that the UCLA PTSD RI V5 is a reliable tool for assessing trauma exposures and PTSD symptoms in youth. These results affirm this version's developmental appropriateness and its utility for clinical assessment and treatment planning across diverse child-serving systems. The tool is developmentally informed and demonstrates the

following: good internal consistency (total scale score alpha at .94), criterion-referenced validity, and accuracy in predicting the PTSD diagnosis ($p < .001$; Kaplow et al., 2020). No new measures were constructed or tested during this study.

## Data Collection Procedures

### *UCLA PTSD Reaction Index – Version 5: Trauma Exposures*

Administrative agency data procedures included the administration of the UCLA PTSD RI V5 by a qualified assessment specialist (not the Principal Investigator) to all youth after admission to assess for trauma exposures and PTSD symptoms, followed by a semi-structured interview. Although the measure is a self-report tool, the DYS assessment specialists have access to records and collateral information as part of the comprehensive assessment process, including law enforcement, court, school, community mental health, medical, and child welfare records. Verification of the responses to the trauma exposures part of the measure occurs through a comprehensive records review and in consultation with other professionals and parents/guardians before results are recorded in the assessment report. After verifying the responses via official records and collateral consultation, if youth responses do not match the verification, assessment specialists are authorized to change the response to match the verified information, and to document this change in the youth's official record. Assessment specialists (licensed mental health professionals) then enter responses to the 23 trauma exposure types as a dichotomous variable (*yes* = 1, *no* = 0) on a protected Excel spreadsheet in preparation for analysis. Demographic variables (age, gender, racial identity) were linked with trauma exposure data to examine variation across racial and ethnic groups (RQ 1a).

**Table 2**

*UCLA PTSD-RI V-5 Trauma History Descriptive Statistics*

| TE Type | Rate of Endorsement<br>*n* (%) |
|---|---|
| 1. Serious Accidental Injury | 483 (48.6) |
| 2. Medical Trauma | 483 (48.6) |
| 3. Community Violence | 614 (61.7) |
| 4. Domestic Violence | 440 (44.1) |
| 5. School Violence | 193 (19.4) |
| 6. Physical Assault | 500 (50.1) |
| 7. Disaster | 72 ( 7.2) |
| 8. Sexual Abuse | 138 (13.8) |
| 9. Physical Abuse | 295 (29.9) |
| 10. Neglect | 317 (31.7) |
| 11. Emotional Abuse | 303 (30.4) |
| 12. Impaired Caregiver | 307 (30.7) |
| 13. Sexual Assault | 126 (12.6) |
| 14. Kidnapping/Abduction | 49 ( 4.9) |
| 15. Terrorism | 7 ( 0.7) |
| 16. Bereavement | 712 (71.5) |
| 17. Separation | 558 (56.0) |
| 18. War/Political Violence | 24 ( 2.5) |
| 19. Forced Displacement | 21 ( 2.1) |
| 20. Trafficking/Sexual Exploitation | 45 ( 4.5) |

| | |
|---|---|
| 21. Bullying | 354 (35.6) |
| 22. Attempted Suicide | 249 (25.0) |
| 23. Witnessed Suicide | 167 (16.8) |

*Note.* TE = trauma exposure. $N = 1{,}001$.

Table 2 illustrates the trauma exposure frequencies by type among the 1,001 youth in this sample. The data reflect a high prevalence of both interpersonal and non-interpersonal traumatic experiences. Bereavement (71.5%), community violence (61.7%), and separation (56.0%) were the most frequently endorsed trauma types, indicating significant exposure to loss and violence. More than half of the youth also reported experiences of physical assault (50.1%), and nearly half reported medical trauma (48.6%) and serious accidental injury (48.6%). Notably, emotional abuse (30.4%), neglect (31.7%), and impaired caregiver (30.7%) were reported at similar rates, suggesting pervasive family-related adversities. Less frequently endorsed experiences included kidnapping (4.9%), war/political violence (2.5%), and terrorism (0.7%). Overall, the data suggest widespread exposure to multiple, often overlapping, forms of trauma.

### *Incident Reports: Physical Aggression*

Several incidents defined in DYS policy require timely reporting to ensure youth and staff safety and adequate review by administration staff. Youth Services Center (YSC) staff are required to generate an electronic narrative report describing incidents based on criteria in the policy. While the policy requires that a range of incidents be reported, only data involving physically aggressive behavior (i.e., fights and assaults) were included in the present study. Fights are operationally defined as mutual physical altercations between two or more individuals, typically involving behaviors such as hitting, kicking, or striking, irrespective of whether the

behavior results in criminal charges. Assaults are operationally defined as unilateral acts in which an individual intentionally inflicts or attempts to inflict physical harm on another person. The electronic incident reports are reviewed, validated, and coded by the DYS Data Management & Analysis (DMA) team. DMA recorded the codes for fights and assaults per youth and exported the data into an Excel spreadsheet for all months represented (Fiscal Years 2018-2022). I imported a de-identified data file into SPSS version 29 for analysis. For each participant, a dichotomous measure of physical aggression (*yes* = 1, *no* = 0) was used in the binary logistic regression analysis as described below. A frequency count was not utilized because the DYS incident types do not represent a true severity scale. If a youth had any endorsement for either fights or assaults, the youth was coded as 1 (yes) for physical aggression. Descriptive statistics revealed an overall high rate of aggression ($N$ = 1,001; 58.5%) among the sample. Younger youth exhibited higher rates of aggression, with 84.6% of 13-year-olds and 76.6% of 14-year-olds displaying aggressive behavior, compared to 44.1% of 18-year-olds and 42.9% of 20-year-olds. Males (59.1%) and females (55.3%) exhibited similar rates of aggression, suggesting that gender was not a distinguishing factor among the sample.

**Data Analytic Plan**

Latent Class Analysis (LCA; Collins & Lanza, 2010; Lanza & Rhoades, 2013) was employed to identify distinct groups or classes of youth based on their exposure to different types of adversity. The LCA was conducted using M*plus* 8.10 software employing maximum likelihood estimation with robust standard errors (MLR; Enders, 2001, 2010). Missing data for trauma exposures ranged from 0.1-3.8% and are discussed in the next chapter. After obtaining the latent classes, I exported the data into IBM SPSS version 29 for further analysis. When conducting an LCA, several model fit indices are commonly examined to assess the adequacy of

the model fit to the data. These statistics help determine the number of latent classes that best represents the data. I utilized the following model fit statistics: 1) Log-Likelihood (LL): This is a measure of the probability of the observed data given a specified model. Higher log-likelihood values indicate a model that better fits the data. However, it is not used in isolation. Additional fit indices include: 2) Akaike's Information Criterion (AIC): AIC is a commonly used criterion for model selection among a set of possible models. It is derived from the number of parameters in the model and the log-likelihood of the model. Lower AIC values indicate a better model fit; 3) Bayesian Information Criterion (BIC): The BIC is particularly sensitive to the sample size. BIC is used for model selection, with lower values indicating a better balance of model fit and complexity; 4) Sample Adjusted Bayesian Information Criteria (SABIC): To account for the BIC sensitivity to sample size, the SABIC provides an adjustment to sample size; 5) Entropy: Entropy is a measure of classification uncertainty, with values ranging from 0 to 1. Higher values indicate clearer delineation between classes, suggesting a better-fitting model. It is not a measure of model fit per se but rather of the quality of class assignment; 6) Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMR-LRT): This test compares the fit of a model with (k) classes to a model with (*k*-1) classes. A significant *p*-value suggests that the model with (k) classes provides a significantly better fit to the data than the model with one fewer class. These tests are especially useful for determining the number of latent classes. However, the choice of the best model in LCA is not solely based on statistical criteria but also on theoretical considerations and interpretability of the latent classes. A model must make theoretical and practical sense; one that is supported by the pattern of the data is preferred over one that is merely statistically optimal.

The analytic procedure involved several key steps. First, a series of LCA models with increasing numbers of classes were estimated to determine the best-fitting solution using the

model fit indices described above. Preference was given to models with lower BIC and AIC values, higher entropy values (indicating clearer classification), and statistically significant LMR-LRT results suggesting improved model fit with additional classes. To determine the best fitting solution, interpretability and clinical relevance were considered alongside statistical fit indices. Solutions were evaluated based on the theoretical meaningfulness of the classes, the distinctiveness of response patterns across trauma exposure types, and the practical utility of the identified groups for future research and intervention efforts. Finally, the most parsimonious model that demonstrated strong fit, interpretability, and reproducibility was selected as the final class solution. Larger item probabilities represent stronger associations and are used to define the class. After determining the latent class solution, the latent class assignments were exported into SPSS version 29 and linked to the demographic and physical aggression incident data.

Second, for research question 2, I employed a two-stage approach using binary logistic regression models in SPSS. First, Model 1 examined the relationship between latent class membership and physical aggression. In this model, latent class 4 served as the reference group to latent classes 1-3. Models 2-7 then incorporated race and ethnicity by systematically varying reference groups by racial and ethnic identity. The following reference groups are represented in the models: Model 2 (White), Model 3 (Black), Model 4 (Latinx), Model 5 (Native American/Alaskan Native/Asian & Pacific Islander), Model 6 (Asian American), and Model 7 (Multiracial), This approach avoided defaulting to White youth as the standard comparison group and enabled examination of how both trauma profiles and racial/ethnic identity influenced odds of aggressive behavior. Results are presented as odds ratios (OR). An odds ratio in logistic regression is a measure that quantifies the strength and direction of the association between a predictor variable and a binary outcome variable (Ranganathan et al., 2017). It indicates how the

odds of the outcome change with a one-unit increase in the predictor variable, assuming all other variables in the model are held constant. It is used to compare the odds of the outcome occurring between two groups defined by the predictor variable. If the odds ratio is greater than 1, it suggests that there is a positive association between the predictor and the outcome; as the predictor increases, the odds of the outcome occurring increase. If the odds ratio is less than 1, it indicates a negative association; as the predictor increases, the odds of the outcome occurring decrease. An odds ratio of 1 implies no association between the predictor and the outcome; changes in the predictor do not affect the odds of the outcome (Norton et al., 2018).

# CHAPTER 4

# RESULTS

## Fit Indices and Item Probabilities of Latent Classes

A Latent Class Analysis (LCA) was conducted in M*plus* 8.10 (Muthén & Muthén, 2020) to examine patterns of cumulative trauma and determine classifications for 1,001 youths whose legal custody was transferred to the Colorado Division of Youth Services (DYS) in fiscal years 2018-2022. LCA involves categorizing individuals into distinct groups (Collins & Lanza, 2008; Collins, 2010). In this study, the Robust Maximum Likelihood (MLR) estimation procedure was utilized to determine subgroups of respondents (i.e., latent classes) based on 23 trauma exposure types.

Table 3 provides the model fit statistics for the one, two, three, four, five, and six class solutions based on 23 trauma exposure types. Significant *p* values for the Lo-Mendell-Rubins likelihood ratio test (LMR-LRT; Lo et al., 2001; Vuong, 1989), higher log-likelihood values (LL; McLachlan & Peel, 2000), lower values for the Akaike Information Criteria (AIC; Akaike, 1973)), and the sample adjusted BIC for sample size (SABIC; Sclove, 1992) were examined to identify the best fitting model. BIC favors simpler models compared to AIC. As the sample size increases, AIC tends to select more complex models. Nylund and colleagues (2007) assert that BIC tends to perform better than AIC when the *N* is large. The SABIC was utilized over the BIC in this study to adjust for any influence related to sample size in the latent classes. The 1-class through 6-class solutions performed as expected on the LL fit statistic, with higher values as the number of classes increased. However, choosing a model with the highest log-likelihood (the

least negative) is not sufficient because more complex models will naturally fit the data better. Therefore, it is important to utilize a combination of fit indices for model selection to ensure the model is parsimonious and interpretable (Nyland et al., 2007).

The 1-class through 4-class solutions performed as expected on the AIC and SABIC fit indices, with lower values in each subsequent class. Both AIC and the SABIC take model fit into account but also penalize for the number of parameters in the model which assists with balancing fit with model complexity. The SABIC helps prevent overfitting and helps select the right level of model complexity to capture the underlying structure of the model. The LMR-LRT fit statistic revealed the most significant *p*-value for the 2-class solution ($p < .001$), followed by the 4-class ($p < .01$) and 3-class ($p < .05$) solutions, respectively. The 5-class and 6-class solutions were not significant, with only slight decreases in both AIC and SABIC indices.

Balancing theoretical considerations compared with measures of classification and goodness-of-fit indices, a four-class solution was selected. The class selection was guided by both General Strain Theory (GST; Agnew, 2001, 2002, 2013) and Bioecological Theory (Bronfenbrenner, 1979, 1989) accounting for varying levels of strain related to trauma exposures across contexts. Specifically, the four-class solution effectively captures heterogeneity in trauma exposures while remaining consistent with both theories. GST supports the differentiation of groups by levels and types of strain, which is critical for understanding the developmental and behavioral outcomes linked to these exposures. Similarly, bioecological theory specifies the necessity of accounting for environmental contexts in shaping individual experiences, which the latent classes achieve by identifying distinct patterns of trauma that align with environmental influences.

Alternative solutions with fewer classes failed to capture these theoretically meaningful distinctions between environmental contexts - for instance, a three-class solution collapsed different types of polyvictimization in ways that obscured the distinct impacts of community versus family-based trauma exposures, which both GST and Bioecological Theory suggest would have different developmental implications. Solutions with more classes began to fragment the coherent patterns of strain and ecological influence into profiles that lacked theoretical distinction. For example, the five- and six-class solutions subdivided the polyvictimization patterns into groups that showed only minimal differences in exposure patterns and contexts, creating artificial distinctions that did not meaningfully align with how strain and environmental influences typically cluster in youths' lived experiences. The four-class solution provided an optimal balance by identifying distinct, theoretically meaningful patterns of trauma exposure while maintaining clear boundaries between different ecological contexts of victimization.

**Table 3**

*Fit Indices for Latent Class Analysis Models for 1-6 Class Solutions*

| # of Classes | Log-Likelihood | AIC | SABIC | Entropy | LMR-LRT *p* value for *k*–1 |
|---|---|---|---|---|---|
| 1-Class | -10838.81 | 21723.62 | 21763.47 | N/A | N/A |
| 2-Class | -10011.78 | 20117.56 | 20199.00 | 0.81 | 0.0000 |
| 3-Class | -9860.60 | 19863.20 | 19986.22 | 0.72 | 0.0501 |
| 4-Class | -9706.59 | 19535.50 | 19767.79 | 0.72 | 0.0135 |
| 5-Class | -9648.75 | 19535.50 | 19741.69 | 0.75 | 0.1898 |
| 6-Class | -9596.33 | 19478.65 | 19726.43 | 0.75 | 0.6314 |

**Frequencies of Youth in Each Latent Class**

Table 4 displays the distribution of youths across the four latent classes identified in the analysis. Latent Class 1 (Polyvictimization – Community, Interpersonal & Family) consists of

182 individuals, which accounts for 18.2% of the total sample. Latent Class 2 (Polyvictimization – Interpersonal & Family) includes 260 individuals, making up 26.0% of the sample. Latent Class 3 (Polyvictimization – Community Violence & Separation) has 279 individuals, comprising 27.9% of the sample, bringing the cumulative percentage to 72.0% when combined with LC1 and LC2. Latent Class 4 (Lower Exposure) includes 280 individuals, representing 28.0% of the sample. The relatively even distribution across the classes suggests that there is a substantial number of youths who have experienced significant cumulative trauma characterized by differential patterns of exposure.

**Table 4**

*Latent Class Membership Frequencies*

| Latent Class | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| PV-CIF (1) | 182 | 18.2 | 18.2 |
| PV-IF (2) | 260 | 26.0 | 44.2 |
| PV-CVS (3) | 279 | 27.9 | 72.0 |
| LE (4) | 280 | 28.0 | 100.0 |

*Note*. (1) Polyvictimization – Community, Interpersonal & Family; (2) Polyvictimization – Interpersonal & Family; (3) Polyvictimization – Community Violence & Separation; (4) Lower Exposure

**Latent Class Analysis (LCA) of Trauma History Profiles**

Latent Class Analysis (LCA) was conducted to examine the pattern of relationships among 23 trauma exposure types in incarcerated youth. Four distinct latent classes emerged, each representing a group of youths with similar trauma exposure profiles (see Table 5). Table 5 illustrates the item probabilities for each latent class, showing the likelihood that youths in each latent class have experienced specific types of trauma exposure. The probabilities were used to

characterize the number of latent classes, and the findings are discussed below. Each class represents a group of youths with similar trauma exposure profiles. Each trauma type has associated probabilities in four distinct classes (Class 1 to Class 4). The item probabilities provide the likelihood of endorsing an item within a particular class and provided the basis from which to select the classes.

**Categorization of Probabilities**

The probabilities in Table 5 were first categorized into four different classes, each representing a group of individuals who have experienced various types of trauma exposure, with the number of individuals in each class being Class 1 (*n*=182), Class 2 (*n*= 260), Class 3 (*n*= 279), and Class 4 (*n*= 280). Each class shows the likelihood (probability) that individuals in that class have experienced specific types of trauma exposure, such as serious injury, medical trauma, community violence, domestic violence, school violence, physical assault, disaster, sexual abuse, physical abuse, neglect, emotional abuse, impaired caregiver, and sexual assault. For example, in Class 1, the probability of experiencing serious injury is 0.703, which means that 70.3% of individuals in this class have experienced this trauma type; while in Class 4, the probability is much lower at 0.245, indicating that only 24.5% of individuals in this class have experienced serious injury. Similarly, the probability of experiencing community violence is very high in Class 1 (0.820) and Class 3 (0.823), suggesting that over 80% of individuals in these classes have faced community violence, whereas in Class 4, the probability is significantly lower at 0.306. The table also shows that certain types of trauma exposure, such as disaster, have very low probabilities across all classes, with the highest being 0.199 in Class 1 and the lowest being 0.020 in Class 4, indicating that disasters are less commonly experienced by individuals in these classes. The categorization helps in understanding the distribution and prevalence of different

trauma types among various groups, which is crucial for targeted interventions and support for those affected by specific types of trauma exposure and in understanding the extent to which the four classes differentially experience certain types of trauma to a greater extent.

**Table 5**

*Item Probabilities for Trauma Types*

| | PV-CIF (1) ($n$ = 182) | PV-IF (2) ($n$ = 260) | PV-CVS (3) ($n$ = 279) | LE (4) ($n$ = 280) |
|---|---|---|---|---|
| Serious Accidental Injury | **0.703** | 0.432 | **0.627** | 0.245 |
| Medical Trauma | 0.455 | 0.239 | 0.276 | 0.099 |
| Community Violence | **0.820** | **0.574** | **0.823** | 0.306 |
| Domestic Violence | **0.814** | **0.602** | 0.367 | 0.112 |
| School Violence | 0.482 | 0.063 | 0.318 | 0.000 |
| Physical Assault | **0.891** | 0.347 | **0.708** | 0.173 |
| Disaster | 0.199 | 0.032 | 0.080 | 0.020 |
| Sexual Abuse | 0.422 | 0.156 | 0.039 | 0.037 |
| Physical Abuse | **0.707** | 0.481 | 0.126 | 0.044 |
| Neglect | **0.636** | **0.681** | 0.054 | 0.028 |
| Emotional Abuse | **0.804** | 0.429 | 0.126 | 0.035 |
| Impaired Caregiver | **0.623** | **0.569** | 0.118 | 0.039 |
| Sexual Assault | 0.446 | 0.111 | 0.033 | 0.026 |
| Kidnapping/Abduction | 0.168 | 0.013 | 0.049 | 0.007 |
| Terrorism | 0.021 | 0.000 | 0.012 | 0.000 |

| | | | | |
|---|---|---|---|---|
| Bereavement | **0.889** | **0.739** | **0.813** | 0.471 |
| Separation | **0.794** | **0.664** | **0.533** | 0.332 |
| War/Political Violence | 0.049 | 0.006 | 0.051 | 0.000 |
| Forced Displacement | 0.038 | 0.008 | 0.035 | 0.008 |
| Trafficking/Sexual Exploitation | 0.186 | 0.019 | 0.022 | 0.000 |
| Bullying | **0.787** | 0.277 | 0.361 | 0.140 |
| Attempted Suicide | **0.730** | 0.256 | 0.104 | 0.079 |
| Witness Suicide | 0.450 | 0.098 | 0.198 | 0.019 |

---

Each class suggests a different pattern of trauma exposures among the DYS youth sample (*n* =1,001). The Polyvictimization – Community, Interpersonal & Family (PV-CIF) group (latent class 1) item probabilities suggested relatively high endorsement on multiple trauma items, with 12 items endorsed (serious accidental injury, community violence, domestic violence, physical assault, physical abuse, neglect, emotional abuse, impaired caregiver, bereavement, separation, bullying, and attempted suicide). Youths in this latent class exhibit high levels of trauma exposure, including physical assault (89.1%), community violence (82%), domestic violence (81.4%), and serious injury (70.3%). Emotional abuse (80.4%) and neglect (63.6%) are also highly prevalent. While trauma such as disaster exposure is lower (19.9%), this group is broadly characterized by significant polyvictimization.

The Polyvictimization – Interpersonal & Family (PV-IF) latent class (latent class 2) item probabilities suggested a slightly different pattern of item endorsement, with 6 trauma exposure items dropping out (i.e., serious accidental injury, physical assault, physical abuse, emotional abuse, bullying, and attempted suicide). The pattern of trauma exposures in latent class 2

includes community violence, domestic violence, neglect, impaired caregiver, bereavement, and separation. While Classes 2 and 3 also revealed notable trauma patterns, they differed in the number and type of exposures. Class 2 (PV-IF) exhibited moderate levels of trauma exposure, particularly around domestic and community violence, but lacked some of the broader trauma endorsements seen in Class 1.

The Polyvictimization - Community Violence & Separation (PV-CVS) latent class (latent class 3) shows a very different pattern with 5 trauma items endorsed (serious accidental injury, community violence, physical assault, bereavement, and separation), primarily focused on violence experienced in the community, with an 82.3% likelihood of exposure to community violence, but lower rates of domestic violence (36.7%) and emotional abuse (12.6%).

In contrast, Class 4 (Lower Exposure) displayed much lower probabilities across all trauma types, with 24.5% experiencing serious injury and significantly less exposure to physical assault (17.3%) and community violence (30.6%). Notably, this class's item probabilities did not identify any trauma exposure types as highly probable (> .05), indicating that the pattern of trauma exposures for the youth in this group is lower and more random compared to the other groups.

Bereavement and separation are notably highly probable across latent classes 1 – 3, demonstrating a commonality among the sample of DYS youth prior to entering care. While Classes 2 and 3 also revealed notable trauma exposure patterns, they differed in the number and type of exposures. Class 2 (Polyvictimization – Interpersonal & Family) exhibited more moderate levels of trauma exposure, particularly around domestic and community violence, but lacked some of the broader trauma endorsements seen in Class 1. Class 3 (Polyvictimization - Community Violence & Separation) focused more on community-based violence, that differed

from Class 1 and 2 where more severe levels of trauma exposure were noted across all forms (i.e., interpersonal, community, and family/betrayal traumas).

**Latent Class Patterns of Aggression**

Table 6 illustrates the distribution of aggression among participants across four latent classes. In LC1, most youths (59.9%) do not exhibit aggressive behaviors, while a smaller portion (40.1%) displays aggression. In LC2, there is a slight increase in the proportion of non-aggressive youths, with 60.5% showing no aggression, while 39.5% showed aggression. Similarly, LC3 and LC4 exhibit comparable patterns, with more than half of the participants showing aggression (56.1% and 58.3%, respectively), while less than half in both classes (43.9% in LC3 and 41.7% in LC4) do not exhibit aggressive behaviors.

**Table 6**

*Aggression Patterns by Latent Class Membership*

| Latent Class | | *n* | *%* |
|---|---|---|---|
| PV-CIF (LC1) | No | 109 | 59.9 |
| | Yes | 73 | 40.1 |
| PV-IF (LC2) | No | 158 | 60.5 |
| | Yes | 103 | 39.5 |
| PV-CVS (LC3) | No | 157 | 56.1 |
| | Yes | 123 | 43.9 |
| LE (LC4) | No | 162 | 58.3 |
| | Yes | 116 | 41.7 |

Table 7 summarizes the descriptives statistics across the latent classes. The age distribution shows that 17-year-olds make up the largest age group in each class, with 16-year-

olds consistently forming the next largest group. Youth ages 13 and 20 are the least represented across all classes. Males account for over 80% of each class, while females are less frequent, with LC3 showing the highest percentage of females. In terms of race and ethnicity, Latinx youth are the largest group in all classes, followed by White youth. Black youth and other racial/ethnic groups, such as Asian American and Multiracial participants, are represented in smaller proportions.

**Table 7**

*Demographic Characteristics of the Sample By Latent Class*

| | LC1 ($n$ = 182) | | LC2 ($n$ = 261) | | LC3 ($n$ = 280) | | LC4 ($n$ = 278) | |
|---|---|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *n* | % | *n* | % |
| Age | | | | | | | | |
| 13 | 2 | 1.1% | 2 | 0.8% | 3 | 1.1% | 6 | 2.2% |
| 14 | 13 | 7.1% | 15 | 5.7% | 20 | 7.1% | 16 | 5.8% |
| 15 | 28 | 15.4% | 39 | 14.9% | 35 | 12.5% | 32 | 11.5% |
| 16 | 45 | 24.7% | 66 | 25.3% | 77 | 27.5% | 61 | 21.9% |
| 17 | 51 | 28.0% | 75 | 28.7% | 90 | 32.1% | 99 | 35.6% |
| 18 | 37 | 20.3% | 45 | 17.2% | 45 | 16.1% | 52 | 18.7% |
| 19 | 6 | 3.3% | 15 | 5.7% | 10 | 3.6% | 9 | 3.2% |
| 20 | 0 | 0.0% | 4 | 1.5% | 0 | 0.0% | 3 | 1.1% |
| Gender | | | | | | | | |
| Male | 159 | 87.4% | 231 | 88.5% | 232 | 82.9% | 238 | 85.6% |
| Female | 23 | 12.6% | 30 | 11.5% | 48 | 17.1% | 40 | 14.4% |
| *Racial & Ethnic Identities* | | | | | | | | |
| Black | 30 | 16.5% | 57 | 21.8% | 47 | 16.8% | 45 | 16.2% |
| White | 57 | 31.3% | 91 | 34.9% | 109 | 38.9% | 99 | 35.6% |
| Latinx | 81 | 44.5% | 94 | 36.0% | 108 | 38.6% | 115 | 41.4% |
| NA, AN, NH, A&PI | 2 | 1.1% | 0 | 0.0% | 1 | 0.4% | 3 | 1.1% |
| Asian American | 3 | 1.6% | 3 | 1.1% | 2 | 0.7% | 2 | 0.7% |
| Multiracial | 9 | 4.9% | 15 | 5.7% | 13 | 4.6% | 14 | 5.0% |

**Binary Logistic Regression**

This analysis aimed to determine whether latent class membership, controlling for age, gender, and racial and ethnic identity, predicts the likelihood of exhibiting physical aggression while youth are confined. A series of binary logistic regression models were estimated. First, Model 1 tested whether latent classes 1-3 predicted aggression (with LC4 serving as the reference group) without covariates. The threshold for aggression was significant ($p$-value = 0.006) indicating the categories are distinct, but the predictors do not significantly impact the odds of exhibiting aggression. Next, Model 2 added gender, age, and racial and ethnic identity, with the reference group as White. Varying reference groups for racial and ethnic identity cycled in models 3 through 7 to examine how racial and ethnic identity influenced the relationship between trauma profiles (latent class membership) and aggressive behavior. This approach enabled comparisons between specific racial and ethnic groups, moving beyond traditional single-reference-group comparisons. The outcome of interest is expressed as odds ratios (OR), with statistically significant results highlighted in Table 8.

In Model 1, latent class membership (Polyvictimization - Community, Interpersonal, and Family, Polyvictimization – Interpersonal & Family, and Polyvictimization-Community Violence & Separation, LC 1-3, respectively) did not significantly predict aggression compared to youth in the reference group (Lower Exposure, or LC4). The odds ratios (OR) are close to 1 (PV-CIF: OR = 1.07, $p$ = .73; PV-IF: OR = 1.10, $p$ = .59; PV-CVS: OR = 0.91, $p$ = .60), indicating minimal differences in the likelihood of aggression across latent class membership. Next, in models 2-7, racial and ethnic identity dummy variables were added to the model to examine whether the inclusion of these variables changed the association of the latent classes with aggression. This approach was taken to avoid defaulting to White youth as the standard

comparison group thereby de-centering White youth and instead assessed differences among all groups in a more inclusive manner.

## Table 8

Binary Logistic Regression Results

| | Model 1 | | | | Model 2 | | | | Model 3 | | | | Model 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Estimate* | SE | *p* | OR | Estimate* | SE | *p* | OR | Estimate* | SE | *p* | OR | Estimate* | SE | *p* | OR |
| PV-CIF (1) | 0.07 | 0.19 | 0.73 | 1.07 | 0.02 | 0.20 | 0.91 | 1.02 | 0.02 | 0.20 | 0.91 | 1.02 | 0.02 | 0.20 | 0.91 | 1.02 |
| PV-IF (2) | 0.09 | 0.18 | 0.59 | 1.10 | 0.06 | 0.18 | 0.76 | 1.06 | 0.05 | 0.18 | 0.77 | 1.06 | 0.06 | 0.18 | 0.76 | 1.06 |
| PV-CVS (3) | -0.09 | 0.17 | 0.60 | 0.91 | -0.14 | 0.18 | 0.42 | 0.87 | -0.14 | 0.18 | 0.42 | 0.87 | -0.14 | 0.18 | 0.42 | 0.87 |
| Age | | | | | -0.37 | 0.05 | **0.001** | 0.69 | -0.37 | 0.05 | **0.001** | 0.69 | -0.37 | 0.05 | **0.001** | 0.69 |
| Gender | | | | | 0.12 | 0.19 | 0.55 | 1.12 | 0.12 | 0.19 | 0.55 | 1.12 | 0.12 | 0.19 | 0.55 | 1.12 |
| Black | | | | | 0.74 | 0.20 | **0.001** | 2.09 | - | - | - | - | 0.67 | 0.20 | **0.001** | 1.95 |
| White | | | | | - | - | - | - | -0.72 | 0.20 | **0.001** | 0.49 | -0.07 | 0.15 | 0.66 | 0.94 |
| Latinx | | | | | 0.08 | 0.15 | 0.62 | 1.08 | -0.65 | 0.20 | **0.001** | 0.53 | - | - | - | - |
| NA, AN, A&PI** | | | | | -0.43 | 0.89 | 0.55 | 0.65 | -1.15 | 0.90 | 0.20 | 0.32 | -0.50 | 0.89 | 0.58 | 0.61 |
| Asian American | | | | | -0.54 | 0.66 | 0.41 | 0.58 | -1.27 | 0.67 | 0.06 | 0.28 | -0.62 | 0.66 | 0.35 | 0.54 |
| Multiracial | | | | | 0.32 | 0.32 | 0.32 | 1.37 | -0.41 | 0.34 | 0.23 | 0.67 | 0.24 | 0.31 | 0.44 | 1.28 |

| | Model 5 | | | | Model 6 | | | | Model 7 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimate* | SE | *p* | OR | Estimate* | SE | *p* | OR | Estimate* | SE | *p* | OR |
| PV-CIF (1) | 0.02 | 0.20 | 0.91 | 1.02 | 0.02 | 0.20 | 0.91 | 1.02 | 0.02 | 0.20 | 0.91 | 1.02 |
| PV-IF (2) | 0.06 | 0.18 | 0.76 | 1.06 | 0.06 | 0.18 | 0.75 | 1.06 | 0.06 | 0.18 | 0.76 | 1.06 |
| PV-CVS (3) | -0.15 | 0.18 | 0.41 | 0.87 | -0.14 | 0.18 | 0.42 | 0.87 | -0.15 | 0.18 | 0.41 | 0.87 |
| Age | -0.37 | 0.05 | **0.001** | 0.69 | -0.37 | 0.05 | **0.001** | 0.69 | -0.37 | 0.05 | **0.001** | 0.69 |
| Gender | 0.11 | 0.19 | 0.55 | 1.12 | 0.12 | 0.19 | 0.54 | 1.12 | 0.11 | 0.19 | 0.55 | 1.12 |
| Black | 1.40 | 0.87 | 0.11 | 4.04 | 1.41 | 0.65 | **0.03** | 4.08 | 0.47 | 0.34 | 0.17 | 1.60 |
| White | 0.66 | 0.86 | 0.44 | 1.94 | 0.67 | 0.64 | 0.30 | 1.96 | -0.27 | 0.31 | 0.39 | 0.77 |
| Latinx | 0.74 | 0.86 | 0.39 | 2.09 | 0.74 | 0.64 | 0.25 | 2.11 | -0.20 | 0.31 | 0.53 | 0.82 |
| NA, AN, A&PI** | - | - | - | - | 0.24 | 1.09 | 0.82 | 1.28 | -0.70 | 0.93 | 0.46 | 0.50 |
| Asian American | 0.11 | 1.07 | 0.92 | 1.12 | - | - | - | - | -0.82 | 0.72 | 0.25 | 0.44 |
| Multiracial | 0.97 | 0.90 | 0.28 | 2.65 | 0.98 | 0.70 | 0.16 | 2.68 | - | - | - | - |

*Note:* *The estimate (coefficient) is in logit units; **NA/AN/A&PI: Native American, Alaskan Native, Asian & Pacific Islander; Significant values are in bold ($p < .001$ and $p < .03$).

The results for Model 2 are consistent with Model 1 for LC1, LC2, LC3, age, and gender. White youths are significantly less likely to exhibit aggression compared to Black youths (OR = 0.74, $p = 0.001$). This indicates that Black youths have significantly higher odds of exhibiting aggression, accounting for trauma profiles, age, and gender. The other comparisons are not significant compared to White youths. In Model 3, Black youths are the reference group. Latinx individuals had lower odds of exhibiting aggression compared to Black youths (OR = 0.53, $p = 0.001$). White individuals had lower odds of exhibiting aggression compared to Black youths (OR = 0.49, $p = 0.001$). With Latinx youths as the reference group in Model 4, the results demonstrated the same pattern, with Black youth showing significantly higher odds of aggression (OR = 1.95, $p = 0.001$). Results for NA/AN/A&PI youths in Model 5 revealed no significant results for aggression. Results for Model 6 (Asian American as reference group) suggest that compared to Asian Americans, Black individuals had significantly higher odds of exhibiting aggression (OR = 4.08, $p = 0.03$). In Model 7 (Multiracial as reference group), no significant differences in odds among racial and ethnic identity groups were found.

Across all models, latent class membership did not significantly predict the outcome, indicating that membership in one of the four latent classes did not substantially influence the likelihood of exhibiting aggression, accounting for all other variables in the model. Age consistently emerged as a significant factor, with older youths being less likely to experience aggression in every model ($p < 0.001$). Gender, however, was not a significant predictor in any of the models, indicating no substantial difference between males and females. Racial and ethnic identity played a role in predicting aggression, particularly for Black youths compared to White and Latinx youths. These findings suggest that while latent class membership and gender do not significantly impact the likelihood of exhibiting aggression, both age and racial and ethnic

identity are important factors to understand. In the next chapter, the results will be contextualized and discussed through a general strain, bioecological, and CRT lens.

# CHAPTER 5

# DISCUSSION

This study examined whether distinct trauma profiles, identified through Latent Class Analysis (LCA), predict physical aggression among youth in Colorado's secure residential facilities, controlling for age, gender, and racial/ethnic identity. Grounded in General Strain Theory (GST; Agnew, 1992, 2001, 2002, 2013), bioecological theory (Bronfenbrenner, 1979, 1989), and CRT (Delgado & Stefancic, 2017), this dissertation explored how patterns of cumulative trauma—often referred to as polyvictimization (Finkelhor, 2007a)—relate to physical aggression during confinement, with the aim of informing more targeted and trauma-responsive approaches to care. Following a discussion of the key findings, an integrated theoretical analysis, implications, and future directions in research are discussed.

The LCA revealed four distinct trauma profile groups among the sample of 1,001 youth, with notably high rates of polyvictimization across three of the four groups. The most severe trauma exposure profile (PV-CIF; 18.2% of the total sample) showed extensive trauma across community, interpersonal, and family domains, with high rates of physical assault (89.1%), community violence (82%), and domestic violence (81.4%). The second profile (PV-IF; 26% of the total sample) exhibited similar patterns but with fewer types of exposures, while the third profile (PV-CVS; 27.9% of the total sample) predominantly showed community violence exposure (82.3%) and separation experiences. The fourth profile (Lower Exposure; 28% of the total sample) demonstrated consistently lower probabilities across all trauma types. In comparison, previous studies by Ford et al. (2013) and Charak et al. (2019), discussed in chapter

two, revealed a 3-class solution, with only one polyvictimization class. For example, Charak and colleagues (2019) found distinct groups of youth categorized as low (mixed adversity), moderate (increased rates of exposure except for emotional abuse, sexual abuse, parents threatening to abandon, and parental conflict), and high levels of trauma exposure (poly-victimization) with adversity type being significantly higher for every category of trauma exposure. Ford et al. (2013) derived a three-class solution by grouping various trauma exposures into broader categories. Their analysis, based on 19 adversity types, did not parse out distinct sources of victimization—resulting in a merged polyvictim class that combined community and interpersonal/family traumas—whereas this study included differentiation among 23 trauma indicators, leading to a four-class solution.

The four-class solution retains separate polyvictimization profiles—one that aggregates community, interpersonal, and family trauma exposures at varying levels (between LC1 and LC2) and another that specifically captures community violence combined with separation (LC3)—whereas Ford et al. (2013) and Charak et al. (2019) collapsed these exposures into a single high exposure class. This additional differentiation allowed for the examination of nuanced trauma patterns that may relate to externalizing behaviors such as physical aggression, suggesting that youth primarily exposed to community violence and separation might experience different behavioral outcomes compared to those with more generalized polyvictimization (Reid & Loughran, 2021). However, while the profiles in this study captured distinct trauma exposure patterns, latent class membership did not significantly predict physical aggression. In contrast, age and racial identity emerged as significant predictors. Specifically, younger youth were more likely to engage in physically aggressive behavior than older youth. This aligns with research indicating that adolescents in mid- to early adolescence often display less impulse control,

struggle more with emotional regulation, and may be more reactive to the stresses of confinement (Moffitt, 1993). As youth mature, aggression often declines, reflecting both developmental processes and evolving coping skills.

Furthermore, there were no significant gender-based disparities in aggression. Although not central to the questions examined in this study, some research finds that confined girls exhibit externalizing behaviors at rates comparable to boys, particularly within populations with high trauma exposure (Habersaat et al., 2018). The null finding suggests that, once in secure care, both males and females may be subject to similar stressors, policies, and discipline practices, resulting in relatively comparable rates of physical aggression. While gender was not a significant predictor, some racial and ethnic patterns appeared, with Black youth showing higher odds of exhibiting aggression compared to three other groups. Each of these findings is interpreted below through an integrated theoretical perspective.

**Theoretical Interpretation of Findings: An Integrated Perspective**

The findings of this study—specifically, the non-significant relationship between trauma profiles and physical aggression, the significantly higher odds of aggression among Black youths, and the increased likelihood of aggression among younger youths—require an integrated theoretical interpretation. No single theory fully accounts for these patterns. Instead, an integrated application of General Strain Theory (GST), Bioecological Theory, and Critical Race Theory (CRT)—complemented by insights from Black Criminology—provides a more comprehensive understanding of youth aggression in the context of secure residential care.

General Strain Theory (Agnew, 1992, 2006) posits that exposure to adverse experiences or strain increases the likelihood of maladaptive outcomes, including physical aggression, particularly when individuals lack adequate coping resources. It was anticipated that youth with

the most severe trauma profile (e.g., PV-CIF) would be most likely to exhibit physical aggression. However, trauma profiles alone did *not* significantly predict aggression. One potential explanation, consistent with prior literature, is that once trauma exposure reaches a certain threshold—a common experience among youth committed to DYS who are considered deeply involved in the CLS—additional variation in exposure may have limited predictive value (Stimmel et al., 2014). Additionally, the significant effect of age supports GST's emphasis on coping capacity and emotional regulation. Younger adolescents may be more susceptible to the behavioral consequences of strain due to underdeveloped regulatory skills and limited ability to navigate institutional environments. In other words, developmental maturity may moderate the relationship between strain and behavioral expression. Despite differences in the trauma types that informed the four latent classes, descriptive analyses on these classes revealed very little difference in the number of aggressive incidents in each latent class with percentages only slightly varying (ranging from 56.1% to 60.5%). The small differences in aggressive incidents are likely why a significant relationship between class membership and aggressive behavior was not found. In addition, the administrative data have limitations and may not reliably capture aggression, as incident reporting and documentation is inherently subjective and influenced by interpretations of what behavior should be labeled physically aggressive.

Second, Agnew (2006) expanded GST by incorporating the role of perceived injustice, where individuals who view their strain as unfair are more likely to engage in aggression. Through a CRT lens, the finding that Black youths were more likely to exhibit aggression than other youths could potentially be understood as a response to cumulative racial injustice and strain that extends beyond the types of trauma measured in this study. Black youth face unique stressors related to systemic racism, including racial trauma, over-policing, and discriminatory

treatment within various systems. The perception of these injustices as both chronic and systematic could contribute to aggressive responses as conceptualized by GST. However, these strains are frequently ignored and understudied in traditional research. Unfortunately, the present study does not capture these strains either, which is noted as an important limitation below.

In addition, GST suggests that different types of strain have varied impacts on behavior. Interpersonal strains (e.g., family violence) may lead to different outcomes than community-based strains (e.g., community violence). Youths in Class 1 experienced more interpersonal trauma, which might lead to internalized distress rather than external aggression, while youths in Classes 2 and 3, who experienced more community violence, might display aggression as a direct response to these external threats (Agnew, 2012). Further analyses would be needed to test these propositions.

Bioecological Theory (Bronfenbrenner, 1979, 1989) further contextualizes these findings by emphasizing the nested systems that shape youth development. Youth behavior is not solely a function of individual traits or histories but is embedded within interactions across multiple ecological layers—including the microsystem (e.g., staff–youth relationships), mesosystem (e.g., staff-staff dynamics), and macrosystem (e.g., institutional culture, systemic racism). The lack of association between trauma profile group membership and physical aggression may indicate that facility-level factors—such as programming structure, surveillance, or support—play a more immediate role in shaping behavioral outcomes. This framework is particularly useful in explaining why some highly traumatized youth may not engage in aggression if the environment promotes safety and regulation. It also supports the interpretation that younger youths, who are still developing cognitive and emotional self-regulation skills, may be especially sensitive to microsystem instability or institutional stressors.

Critical Race Theory (CRT) and Black Criminology add essential layers to this analysis, particularly regarding the finding that Black youth were significantly more likely to be labeled as aggressive, independent of trauma profile and age. CRT posits that racism is systemic, embedded in institutional practices and norms—including those of the criminal legal system. Within this framework, behavioral outcomes must be viewed not as reflections of individual pathology or trauma history, but as shaped by the racialized perceptions and differential treatment that Black youths often experience in confinement. Black Criminology (Unnever & Gabbidon, 2011; Unnever & Chouhy, 2022) deepens this insight by framing aggression among Black youth as a potential response to accumulated structural violence, historical marginalization, and the ongoing experience of racialized surveillance and discipline. Moreover, age and racial identity may intersect in important ways: younger Black males, in particular, are often perceived as older, more dangerous, and less redeemable—a perception that may amplify punitive responses and distort how physical aggression is identified and managed by staff in these facilities.

Together, these theories elucidate how trauma exposures, developmental influences, and structural inequity interact to produce complex behavioral outcomes in secure residential settings. The study's findings suggest that physical aggression is not simply the result of individual trauma exposures, but may be mediated by developmental stage, institutional context, and racialized systems of control. Therefore, effective intervention within a secure setting requires an approach that integrates trauma-responsive care with developmentally informed practice and anti-racist, systemic reforms. Without attention to these intersecting dimensions, efforts to reduce physical aggression risk reinforcing the very disparities they seek to address.

**Racialized Patterns of Aggression: Insights from Black Criminology**

The finding that Black youths in this study were significantly more likely to exhibit physical aggression during confinement—despite comparable trauma exposures to other youths—demands a deeper exploration beyond individual-level explanations. While General Strain Theory and bioecological frameworks contribute important insights into the developmental and ecological contexts of youth behavior, these frameworks alone are insufficient to fully explain the racial disparities in aggression observed in secure residential care. To advance understanding of these disparities, the interpretation of the finding now turns to the structural and historical influences identified by Black Criminology.

CRT provided the foundational lens for the literature review, offering a framework through which to understand how systemic racism is embedded in policies, practices, and institutional norms. Black Criminology extends this perspective by focusing explicitly on the criminal legal system and the unique, racialized experiences of Black youth within it. Developed by Black scholars, Black Criminology centers the historical and contemporary forces that shape disproportionate system contact, including over-policing, racial profiling, and harsher disciplinary responses. It emphasizes how these institutional dynamics impact behavioral outcomes and amplify perceived aggression, regardless of actual behavior (Unnever & Gabbidon, 2011; Unnever & Chouhy, 2022). This framework is especially useful for interpreting this study's finding that Black youths, even when controlling for age and other demographics, were more likely to be documented as physically aggressive. According to Black Criminology, Black youth often experience structural strains that go unmeasured in traditional trauma assessments, including racial discrimination, implicit bias, and criminalization from an early age. This points to a limitation in the study's measurement of trauma. The UCLA PTSD Reaction Index – Version 5, as used during the study period, did not assess experiences of racial trauma or

discrimination. As a result, the full scope of trauma exposure—particularly racialized structural strain—may have been underrepresented. This gap may help explain why Black youths, despite similar reported trauma levels, exhibited higher rates of physical aggression. Their experiences with racialized adversity were likely not fully captured by the tool. Future administrations of the updated version, which now includes racial trauma, will provide a more comprehensive picture in future studies. These cumulative experiences create a form of racialized strain—one that may intensify the behavioral and emotional toll of prior trauma and reduce access to coping resources within confined settings. In this context, physical aggression can be seen not merely as a reaction to prior adversity, but also as a response to ongoing institutional marginalization.

Moreover, institutional environments in secure care may reinforce these disparities. Staff perceptions of Black youth as older, more dangerous, or less amenable to rehabilitation (Fader, 2013; Feagin, 2006) can result in disproportionate surveillance, more punitive discipline, and a greater likelihood that behavior will be recorded as aggressive. These patterns align with Black Criminology's assertion that Black youth are not only more likely to be subjected to social control mechanisms, but also more likely to be mischaracterized or over-disciplined within those systems. Such racialized interpretations can produce a self-fulfilling prophecy, whereby Black youth, aware of their differential treatment, respond with defiance or distress, which is then further criminalized.

The intersection of race, age, and trauma is particularly salient. Younger Black males—often perceived through biased lenses—may be at heightened risk for both internal strain and external control. In this study, Class 1 youth (the most severely polyvictimized group) had high proportions of Black males and experienced elevated exposure to community violence, physical assault, domestic violence, and emotional abuse. Many also came from under-resourced

environments shaped by long-standing systemic inequities, including redlining, poverty, and instability in caregiving (Western & Wildeman, 2009). Nearly two-thirds of Class 1 youth experienced impaired caregiving, further underscoring the role of structural disadvantage in shaping both trauma exposure and behavioral responses. Racialized trauma, institutional practices, and social control mechanisms disproportionately affect Black youths (Galán et al., 2022; Saleem et al., 2021). These insights demand a shift in how behavioral outcomes are interpreted and addressed in secure residential settings. Rather than attributing physical aggression to individual pathology, youth-serving systems must confront the ways in which racialized CLS and institutional practices accumulate harm. Doing so requires the integration of anti-racist frameworks, institutional accountability, and supports that recognize and respond to the lived experiences of Black youths in confinement.

**Limitations of the Study**

While this study addresses key gaps in the literature and offers some important considerations for policy, practice, and future research, several limitations are evident. Most notably, the present study limited analysis of race and ethnicity to a control variable, which prevents a deeper examination of how racial and ethnic identities intersect with trauma experiences, institutional responses, and behavioral outcomes. Given the centrality of racial and ethnic identity to youth development and their experiences within the criminal legal system, this limitation significantly restricts the ability to understand how different groups experience and navigate confinement environments. Treating race and ethnicity solely as a control variable risks masking the complex ways in which systemic racism shapes both individual experiences and institutional practices. Moreover, the very categories used to classify race and ethnicity reflect historical and social constructions that warrant critical examination, a point explored in greater

detail below. For example, since race is shaped by ongoing societal debates over inclusion, equity, and power, the justice system often reflects and perpetuates the biases and inequalities embedded within these struggles (Goldberg, 1992). As a result, Black youth—especially those who display aggression—are more likely to be perceived as inherently dangerous or disruptive due to longstanding racial stereotypes. This can lead to harsher treatment, including increased disciplinary measures, extended incarceration periods, and fewer opportunities for rehabilitation or therapeutic interventions (Coles & Powell, 2020). Punitive responses can exacerbate the very behaviors the system seeks to control, as these youth may internalize feelings of hopelessness and anger from being unfairly treated. Over time, this creates a feedback loop where racial and ethnic minoritized youth, particularly Black male youth, face more severe consequences for their aggression, which can lead to further isolation, trauma, and diminished chances for successful reintegration into society after release.

The CLS, operating within a framework that has historically marginalized Black communities, in particular, must confront these biases and work toward more restorative and trauma-informed approaches to prevent further harm and reduce the cycle of negative outcomes for incarcerated Black youth. Without addressing these systemic issues, the treatment of aggressive Black male youth within the justice system risks reinforcing racial disparities, contributing to recidivism, and deepening the long-term consequences of incarceration for these individuals and their communities. Given that the study relied on secondary administrative data, the measures available—particularly for physical aggression—may be influenced by subjective reporting practices or institutional documentation norms, which could partially account for the lack of significant differences across trauma profiles. Moreover, the inability to measure trauma

exposures that occurred during confinement limits the interpretability of the observed patterns of aggression.

### *Potential Mediating and Moderating Variables*

A notable limitation to the present study is it was unable to capture several key individual and contextual factors that shape youth experiences and behaviors within facilities. For example, staff attitudes, implicit biases, and interaction patterns likely influence youth responses to the secure residential environment and is a limitation of using administrative data. Additionally, facility policies and practices vary considerably across institutions, potentially creating different conditions for youth coping and expression. Peer relationships and social dynamics within facilities represent another unmeasured factor that may mediate behavioral responses. Furthermore, the study did not assess important protective resources that youth bring with them into facilities, such as cultural knowledge, community connections, and adaptive coping strategies developed through life experience. Understanding these facility-level and individual-level factors would provide crucial insight into the varied pathways between trauma and behavioral responses during detention. This more complete picture would help explain why youth with similar trauma histories may demonstrate different behavioral patterns within the system.

### *Racialized Trauma*

This study infers the role of racialized trauma for minoritized youth; however, no direct measure of racial trauma or discrimination experiences data were available. Research consistently documents the pervasive nature of bias and discrimination across institutional systems in the United States, from education and healthcare to housing and criminal justice (Williams & Mohammed, 2013). Given this well-documented reality, it is reasonable to consider

that participants have likely encountered racial trauma and discrimination, though the specific nature, frequency, and intensity of these experiences within this sample remain unknown without targeted assessment. To this point, findings specific to Black youth lack critical contextualization and should be interpreted with caution. It is likely that the aggression finding specific to Black youth can be explained by other factors, such as over-reporting of behavior due to racial biases leading to discipline (Williams & Mohammed, 2013).

***Cross-Sectional Data***

Next, the use of cross-sectional data is an important limitation. Since the study is not longitudinal, it cannot track how aggression patterns evolve over time during confinement. Causal relationships and long-term trajectories of aggression cannot be inferred. Additionally, the use of a dichotomous yes/no for the dependent variable (aggression) limits the application of the findings and conflates minor and severe incidents, potentially obscuring the nuances of how different trauma exposures relate to the context in which the aggression occurred. Given that the study relied on secondary administrative data, the measures available—particularly for physical aggression—may be influenced by subjective reporting practices or institutional documentation norms, which could partially account for the lack of significant differences across trauma profiles. Moreover, the inability to measure trauma exposures that occurred during confinement limits the interpretability of the observed patterns of aggression. Finally, due to these limitations, this study has limited generalizability. Moreover, the findings apply specifically to Colorado's youth CLS for the period sampled but may not generalize to other states with different policing and judicial policies, facility cultures, and demographic characteristics.

## Implications

Despite the limitations discussed above, several strengths of the present study are worth noting. By focusing on physical aggression during long-term secure residential care, the present study offers a novel contribution to the literature. It identifies not only distinct trauma profiles among confined youths but also reveals that trauma exposure alone does not significantly predict physical aggression. This challenges dominant viewpoints that indicate the greater the trauma exposures, the greater the risk of externalizing behaviors (Darnell et al., 2019). The findings of this study have several important implications for practice, policy, and research, particularly in relation to trauma-informed care and racial equity in secure residential settings, discussed below.

### *Practice Implications*

First, the results suggest that interventions aimed at reducing aggression in secure care must move beyond trauma typologies alone and focus more intentionally on developmental and relational dynamics. Younger youth were significantly more likely to exhibit aggressive behaviors, pointing to the need for age-sensitive programming that supports emotional regulation development. Intervention models should incorporate strategies tailored to adolescents' cognitive and emotional capacities, such as structured co-regulation, social-emotional learning, and peer mediation practices. Second, the disproportionate odds of aggression observed among Black youths underscores the need to critically examine institutional behavior management systems. Staff training in this regard must extend beyond general trauma-informed care to include components on implicit bias and culturally responsive behavioral assessment. Facilities should embed equitable behavior-monitoring protocols that actively work to eliminate racialized interpretations of youth behavior. Finally, aggression should be understood within a broader ecological framework. Staff and leadership must prioritize building safe, predictable, and

relationship-rich environments, where aggression is not merely seen as a youth-level deficit but as a potential expression of unmet developmental needs.

### *Policy Implications*

At the policy level, these findings call for a reevaluation of how risk and behavior are assessed and documented in secure settings. Current systems that prioritize trauma screening may miss more proximal drivers of aggression, such as developmental factors or institutional dynamics. Policymakers should support tools that assess not only trauma history but also youth capacity for regulation, staff-youth interactions, and institutional culture. Additionally, the racial disparities observed in aggression outcomes demand attention. State and agency-level policies should require disaggregated data reporting on aggression and disciplinary outcomes by racial identity, age, and facility, with built-in accountability measures. Finally, facilities should conduct regular racial equity audits of behavioral responses, including use of isolation, restraint, or removal from programming, and ensure transparent methods for oversight.

### *Research Implications*

Future research should build on these findings by exploring the mechanisms through which age and racial identity shape aggression within confined environments. As noted, this study was unable to consider the facility environment itself, but future studies should focus on facility climate, surveillance practices, staff responses, and discipline protocols that mitigate aggressive responses. Mixed-methods and qualitative approaches are especially needed to capture how youth experience institutional responses to aggression and how these experiences may be influenced by racial identity and developmental age. Additionally, future research should include measures of racial trauma and staff behavior to better understand the contextual and interpersonal dimensions of aggression in secure care. Finally, longitudinal studies could provide

valuable insights into how facility conditions and relational factors interact with youth characteristics over time to either reinforce or reduce aggressive behavior.

## Conclusion

In conclusion, this study contributes to the literature on lifetime trauma exposures and physical aggression among confined youth by suggesting that demographic characteristics and systemic context may be more predictive of aggression than trauma profiles alone. These findings highlight the need better understand the mechanisms that drive physical aggression in secure residential settings. Reducing physical aggression among CLS-involved youth will require a comprehensive approach that addresses not only individual trauma histories but also the structural and contextual conditions that shape behavioral outcomes. By understanding and addressing these layered contributors to aggression, systems can better fulfill their rehabilitative mission and support the long-term well-being of youth in their care.

# REFERENCES


Abram, K. M., Teplin, L. A., Charles, D. R., Longworth, S. L., McClelland, G. M., & Dulcan, M. K. (2004). Posttraumatic stress disorder and trauma in youth in juvenile detention. *Archives of General Psychiatry*, *61*(4), 403-410. doi:10.1001/archpsyc.61.4.403

Abrams, L.S. (2013). Juvenile justice at a crossroads: Science, evidence, and twenty-first century reform. *Social Service Review, 87,* 725-752. https://doi.org/10.1086/674074

Abrams, L. S., Mizel, M. L., & Barnert, E. S. (2021). The criminalization of young children and overrepresentation of Black youth in the youth criminal legal system. *Race and Social Problems*, *13*(1), 73–84. https://doi.org/10.1007/s12552-021-09314-7

Ackerman, E., Magram, J., & Kennedy, T. D. (2024). Systematic review: Impact of juvenile incarceration. *Child Protection and Practice*, *3*, 100083. https://doi.org/10.1016/j.chipro.2024.100083

Adams, Z. W., Moreland, A., Cohen, J. R., Lee, R. C., Hanson, R. F., Danielson, C. K., Self-Brown, S., & Briggs, E. C. (2016). Polyvictimization: Latent profiles and mental health outcomes in a clinical sample of adolescents. *Psychology of Violence, 6*(1), 145–155. https://doi.org/10.1037/a0039713

Agnew, R. (1985). A revised strain theory of delinquency. *Social Forces, 64*, 151–167.

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology, 30*, 47–87.

Agnew, R. S. (2001). Building on the foundation of general strain theory: Specifying the types of strain most likely to lead to crime and delinquency. *Journal of Research in Crime & Delinquency, 38,* 319-361. https://doi.org/10.1177/0022427801038004001

Agnew, R. S. (2002). Experienced, vicarious, and anticipated strain: An exploratory study on physical victimization and delinquency. *Justice Quarterly*, *19*(4), 603–632. https://doi.org/10.1080/07418820200095371

Agnew, R. S. (2006). *Pressured into crime: An overview of general strain theory*. Oxford University Press.

Agnew, R. (2012). Reflection on "A Revised Strain Theory of Delinquency." *Social Forces*, *91*(1), 33–38. https://doi.org/10.1093/sf/sos117

Agnew, R. S. (2013). When criminal coping is likely: An extension of general strain theory. *Deviant Behavior*, *34*(8), 653-670. https://doi.org/10.1080/01639625.2013.766529

Agnew, R. S. & Moon, B. (2018). Strain theory and violent behavior. In A. T. Vazsonyi, D. J. Flannery, & Matt DeLisi (Eds.), *The Cambridge handbook of violent behavior and aggression* (pp. 453-466). Cambridge University Press.

Akaike, H. (1973). Maximum likelihood identification of Gaussian autoregressive moving average models. *Biometrika*, *60*(2), 255–265. https://doi.org/10.1093/biomet/60.2.255

American Academy of Social Work & Social Welfare. (2016a). *Ensure healthy development for all youth*. Retrieved from https://grandchallengesforsocialwork.org/ensure-healthy-development-for-all-youth/

American Academy of Social Work & Social Welfare. (2016b). *Promote smart decarceration*. Retrieved from https://grandchallengesforsocialwork.org/promote-smart-decarceration/

American Academy of Social Work & Social Welfare. (2016c). *Build healthy relationships to end violence*. Retrieved from https://grandchallengesforsocialwork.org/build-healthy-relationships/

American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, D.C.

American Psychological Association (2020). *Publication manual of the American Psychological Association* (7th ed.). https://doi.org/10.1037/0000165-000

Ames, R. L., & Loebach, J. E. (2023). Applying trauma-informed design principles to therapeutic residential care facilities to reduce retraumatization and promote resiliency among youth in care. *Journal of Child & Adolescent Trauma*, *16*(4), 805–817. https://doi.org/10.1007/s40653-023-00528-y

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, *256*, 174-186. https://doi.org/10.1007/s00406-005-0624-4

Anderson, C. A. & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27–51. https://doi.org.aurarialibrary.idm.oclc.org/10.1146/annurev.psych.53.100901.135231

Andrews, A. R., Jobe-Shields, L., López, C. M., Metzger, I. W., de Arellano, M. A. R., Saunders, B., & G. Kilpatrick, D. (2015). Polyvictimization, income, and ethnic differences in trauma-related mental health during adolescence. *Social Psychiatry and Psychiatric Epidemiology*, *50*(8), 1223–1234. https://doi.org/10.1007/s00127-015-1077-3

Apel, R., & Burrow, J. D. (2011). Adolescent victimization and violent self-help. *Youth Violence and Juvenile Justice*, *9*(2), 112–133. https://doi.org/10.1177/1541204010376939

Askew, W. (2012). Keeping promises to preserve promise: The necessity of committing to a rehabilitation model in the juvenile justice system. *Georgetown Journal on Poverty Law & Policy*, *20*, 373-395.

Asnaani, A., & Hall-Clark, B. (2017). Recent developments in understanding ethnocultural and race differences in trauma exposure and PTSD. *Current Opinion in Psychology*, *14*, 96–101. https://doi.org/10.1016/j.copsyc.2016.12.005

Baglivio, M. T., & Epps, N. (2016). The interrelatedness of adverse childhood experiences among high-risk juvenile offenders. *Youth Violence and Juvenile Justice*, *14*(3), 179-198. https://doi-org.aurarialibrary.idm.oclc.org/10.1177/1541204014566286

Baglivio, M., Epps, N., Swartz, K., Sayedul Huq, M., Sheer, A., & Hardt, N. (2014a). The prevalence of adverse childhood experiences (ACE) in the lives of juvenile offenders. *Journal of Juvenile Justice, 3*, 1–23.

Baglivio, M. T., Jackowski, K., Greenwald, M. A., & Howell, J. C. (2014b). Serious, violent, and chronic juvenile offenders: A statewide analysis of prevalence and prediction of subsequent recidivism using risk and protective factors. *Criminology & Public Policy, 13*(1), 83–116. https://doi.org/10.1111/1745-9133.12064

Baglivio, M. T., Wolff, K. T., DeLisi, M., Vaughn, M. G., & Piquero, A. R. (2016). Effortful control, negative emotionality, and juvenile recidivism: An empirical test of DeLisi and Vaughn's temperament-based theory of antisocial behavior. *The Journal of Forensic Psychiatry & Psychology*, *27*(3), 376-403. https://doi.org/10.1080/14789949.2016.1145720

Baglivio, M. T., Wolff, K. T., Epps, N., & Nelson, R. (2015). Predicting adverse childhood experiences: The importance of neighborhood context in youth trauma among delinquent youth. *Crime & Delinquency*, *63*(2), 166-188. https://doi.org/10.1177/0011128715570628

Baglivio, M. T., Zettler, H., Craig, J. M., & Wolff, K. T. (2021). Evaluating RNR-based targeted treatment and intervention dosage in the context of traumatic exposure. *Youth Violence and Juvenile Justice*, *19*(3), 251-276. https://doi.org/10.1177/1541204020988575

Barkauskienė, R., Adler, A., Čekuolienė, D., & Gervinskaitė-Paulaitienė, L. (2019). Internalising problems and borderline personality features as mediators of the link between traumatic experiences and antisocial behaviours in delinquent adolescents. *Psychiatria i Psychologia Kliniczna*, 7-12. https://doi.org/10.15557/PiPK.2019.0001

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, N. J.: Prentice Hall.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52(1), 1-26.

Barnert, E. S., Abrams, L. S., Tesema, L., Dudovitz, R., Nelson, B. B., Coker, T., …Chung, P. J. (2018). Child incarceration and long-term adult health outcomes: A longitudinal study. *International Journal of Prisoner Health, 14*(1), 26–33. https://doi.org/10.1108/IJPH-09-2016-0052

Barnert, E. S., Perry, R., Shetgiri, R., Steers, N., Dudovitz, R., Heard-Garris, N. J., Zima, B., & Chung, P. J. (2021). Adolescent Protective and Risk Factors for Incarceration through Early Adulthood. *Journal of Child and Family Studies*, *30*(6), 1428–1440. https://doi.org/10.1007/s10826-021-01954-y

Barnes, J.C., & Tielbeek, J. (2018). The behavioral genetics of aggression and violent behavior. In A.T. Vazsonyi, D.J. Flannery, & M. DeLisi (Eds.), *Violent Behavior and Aggression* (pp.83-105).

Baron, S. W. (2009). Street youths' violent responses to violent personal, vicarious, and anticipated strain. *Journal of Criminal Justice*, *37*(5), 442-451. https://doi.org/10.1016/j.jcrimjus.2009.07.004

Baron, S. W., & Forde, D. R. (2020). Childhood trauma, criminogenic social schemas, and violent crime. *Deviant Behavior*, *41*(8), 991-1004. https://doi.org/10.1080/01639625.2019.1596534

Beauchaine, T. P., & Cicchetti, D. (2019). Emotion dysregulation and emerging psychopathology: A transdiagnostic, transdisciplinary perspective. *Development and Psychopathology, 31*(3), 799–804. https://doi.org/10.1017/S0954579419000671

Becker, S. P., & Kerig, P. K. (2011). Posttraumatic stress symptoms are associated with the frequency and severity of delinquency among detained boys. *Journal of Clinical Child and Adolescent Psychology*, *40*(5), 765–771. https://doi.org/10.1080/15374416.2011.597091

Bellis, M. A., Lowey, H., Leckenby, N., Hughes, K., & Harrison, D. (2014). Adverse childhood experiences: retrospective study to determine their impact on adult health behaviours and health outcomes in a UK population. *Journal of Public Health*, *36*(1), 81-91. https://doi.org/10.1093/pubmed/fdt038

Belksy, J. (1980). Child maltreatment: An ecological integration. *American Psychologist, 35*(4), 320-335. https://doi-org.aurarialibrary.idm.oclc.org/10.1037/0003-066X.35.4.320

Bhatta, M. P., Jefferis, E., Kavadas, A., Alemagno, S. A., & Shaffer-King, P. (2014). Suicidal

behaviors among adolescents in juvenile detention: Role of adverse life experiences. *PLOS One*, *9*(2), e89408. https://doi.org/10.1371/journal.pone.0089408

Bloom, S. L. (2013). *Creating sanctuary: Toward the evolution of sane societies*. Routledge.

Bonta, A. & Andrews, D.A. (2017). *The psychology of criminal conduct.*(6th ed.). Routledge.

Bradshaw, C. P., Mitchell, M. M., O'Brennan, L. M., & Leaf, P. J. (2010). Multilevel exploration of factors contributing to the overrepresentation of black students in office disciplinary referrals. *Journal of Educational Psychology*, *102*(2), 508–520.

Braga, T., Gonçalves, L. C., Basto-Pereira, M., & Maia, Â. (2017). Unraveling the link between maltreatment and juvenile antisocial behavior: A meta-analysis of prospective longitudinal studies. *Aggression and Violent Behavior*, *33*, 37-50.

Branson, C. E., Baetz, C. L., Horwitz, S. M., & Hoagwood, K. E. (2017). Trauma-informed juvenile justice systems: A systematic review of definitions and core components. *Psychological Trauma : Theory, Research, Practice and Policy, 9*(6), 635–646. https://doi.org/10.1037/tra0000255

Bremness, A., & Polzin, W. (2014). Commentary: Developmental trauma disorder: A missed opportunity in DSM V. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 23*(2), 142–145. http://www.ncbi.nlm.nih.gov/pubmed/24872830

Briere, J., Agee, E., & Dietrich, A. (2016). Cumulative trauma and current posttraumatic stress disorder status in general population and inmate samples. *Psychological Trauma Theory Research Practice and Policy, 8*, 439–446. https://psycnet-apa-org.aurarialibrary.idm.oclc.org/doi/10.1037/tra0000107

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Bronfenbrenner, U. (1988). Interacting systems in human development. Research paradigms: Present and future. In N. Bolger, A. Caspi, G. Downey, & M. Moorehouse (Eds.), *Persons in context: Developmental processes* (pp. 25-49). Cambridge University Press.

Bronfenbrenner, U. (1989). Ecological systems theory: Annals of child development. Harvard University Press.

Bronfenbrenner, U. (1999). Environments in developmental perspective: Theoretical and operational models. In S. L. Friedman & T. D. Wachs (Eds.), *Measuring environment across the life span: Emerging methods and concepts* (p. 3–28). American Psychological Association. https://doi.org/10.1037/10317-001

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Sage Publications.

Bronfenbrenner, U., & Ceci, S. J. (1994). Nature-nuture reconceptualized in developmental perspective: A bioecological model. *Psychological review*, *101*(4), 568.

Bronson, J. E. & Carson, A. (2019). Prisoners in 2017. *U.S. Department of Justice, Bureau of Justice Statistics.* NCJ 252156. Retrieved from https://www.bjs.gov/content/pub/pdf/p17.pdf.

Brown, D. W., Anda, R. F., Tiemeier, H., Felitti, V. J., Edwards, V. J., Croft, J. B., ... Giles, W. H. (2009). Adverse childhood experiences and the risk of premature mortality. *American Journal of Preventive Medicine, 37*(5), 389–396. https://doi.org/10.1016/j.amepre.2009.06.021

Brown, C., Fine, A., & Cauffman, E. (2019). Do positive perceptions of correctional staff mitigate institutional violence among youthful offenders? *Psychology, Public Policy, and Law*, *25*(1), 38–45. https://doi.org/10.1037/law0000191

Brown, S. L., Wanamaker, K. A., Greiner, L., Scott, T., & Skilling, T. A. (2021). Complex trauma and criminogenic needs in a youth justice sample: A Gender-informed latent profile analysis. *Criminal Justice and Behavior*, *48*(2), 175-194. https://doi.org/10.1177/0093854820964513

Bushman, B. J., & Anderson, C. A. (2001). Is it time to pull the plug on hostile versus instrumental aggression dichotomy*? Psychological Review, 108*(1), 273-279. https://doi.org/10.1037/0033-295X.108.1.273

Butler, H. D., Caudill, J. W., Craig, J. M., DeLisi, M., & Trulson, C. R. (2020). 99 Percenters: An examination of the misconduct careers of the most violent and disruptive incarcerated delinquents. *Aggression and Violent Behavior*, 101520. https://doi.org/10.1016/j.avb.2020.101520

Catalano, R. F., & Hawkins, J. D. (1996). *The social development model: A theory of antisocial behavior.* In J. D. Hawkins (Ed.), *Cambridge criminology series. Delinquency and crime: Current theories* (p. 149–197). Cambridge University Press.

Chang, L., Schwartz, D., Dodge, K. A., & McBride-Chang, C. (2003). Harsh parenting in relation to child emotion regulation and aggression. *Journal of Family Psychology, 17*(4), 598–606. https://doi-org.aurarialibrary.idm.oclc.org/10.1037/0893-3200.17.4.598

Charak, R., Ford, J. D., Modrowski, C. A., & Kerig, P. K. (2019). Polyvictimization, emotion dysregulation, symptoms of posttraumatic stress disorder, and behavioral health problems among justice-involved youth: A latent class analysis. *Journal of Abnormal Child Psychology*, *47*(2), 287-298. https://doi.org/10.1007/s10802-018-0431-9

Chen, X. (2009a). The link between juvenile offending and victimization: The influence of risky lifestyles, social bonding, and individual characteristics. *Youth Violence and*

*Juvenile Justice*, *7*(2), 119–135. https://doi.org/10.1177/1541204008328799

Chen, X. (2009b). The linkage between deviant lifestyles and victimization: An examination from a life course perspective. *Journal of Interpersonal Violence*, *24*(7), 1083-1110. https://doi-org.aurarialibrary.idm.oclc.org/10.1177/0886260508322190

Cicchetti, D. (2013). Annual research review: Resilient functioning in maltreated children – past, present, and future perspectives. *Journal of Child Psychology and Psychiatry*, *54*(4), 402–422. https://doi.org/10.1111/j.1469-7610.2012.02608.x

Cicchetti, D. & Lynch, M. (1993). Toward an ecologocial/transactional model of community violence and child maltreatment: Consequences for children's development. *Psychiatry, 56*(1), 96-118. https://doi.org/10.1080/00332747.1993.11024624

Cochran, J. C. and Mears, D. P. (2014). Race, ethnic, and gender divides in juvenile court sanctioning and rehabilitative intervention. *Journal of Research in Crime and Delinquency, 52*(2), 181-212. https://doi.org/10.1177/0022427814560574

Coleman, D., & Stewart, L. M. (2010). Prevalence and impact of childhood maltreatment in incarcerated youth. *American Journal of Orthopsychiatry*, *80*(3), 343-349. https://doi.org/10.1111/j.1939-0025.2010.01038.x

Coles, J. A., & Powell, T. (2020). A BlackCrit analysis on Black urban youth and suspension disproportionality as anti-Black symbolic violence. *Race Ethnicity and Education*, *23*(1), 113–133. https://doi.org/10.1080/13613324.2019.1631778

Collins, L. M., & Lanza, S. T. (2010). *Latent class and latent transition analysis: With applications in the social, behavioral, and health sciences*. John Wiley & Sons.

Corvo, K., & deLara, E. (2010). Towards an integrated theory of relational violence: Is bullying a risk factor for domestic violence? *Aggression and Violent Behavior*, *15*(3), 181–190. https://doi.org/10.1016/j.avb.2009.12.001

Craig, J. M., & Zettler, H. R. (2021). Are the effects of adverse childhood experiences on violent recidivism offense-specific? *Youth Violence and Juvenile Justice*, *19*(1), 27–44. https://doi.org/10.1177/1541204020939638

Craig, J. M., Zettler, H., & Trulson, C. R. (2023). Trauma and violent misconduct among incarcerated juveniles: The mediating role of mental health. *Journal of Developmental and Life-Course Criminology*, *9*(1), 121–140. https://doi.org/10.1007/s40865-022-00220-z

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review, 43*(6), 1241–1299. https://doi.org/10.2307/1229039

Culyba, A. J., Abebe, K. Z., Albert, S. M., Jones, K. A., Paglisotti, T., Zimmerman, M. A., & Miller, E. (2018). Association of future orientation with violence perpetration among male youths in low-resource neighborhoods. *JAMA Pediatrics*, *172*(9), 877-879. https://doi:10.1001/jamapediatrics.2018.1158

Dahlberg, L. L. & Krug, E. G. (2002). Violence: A global public health problem. In E. G. Krug, L. L. Dahlberg, J. A. Mercy, A. B. Zwi, & R. Lozano (Eds.), *World report on violence and health* (pp. 1-21). World Health Organization.

Dalsklev, M., Cunningham, T., Dempster, M., & Hanna, D. (2019). Childhood physical and sexual abuse as a predictor of reoffending: A systematic review. *Trauma, Violence, & Abuse, 22*, 605 - 618. https://doi.org/10.1177/1524838019869082

Danese, A., Moffitt, T. E., Harrington, H., Milne, B. J., Polanczyk, G., Pariante, C. M., Poulton, R., & Caspi, A. (2009). Adverse childhood experiences and adult risk factors for age-related disease: Depression, inflammation, and clustering of metabolic risk markers. *Archives of Pediatrics & Adolescent Medicine*, *163*(12), 1135–1143. https://doi.org/10.1001/archpediatrics.2009.214

Darnell, D., Flaster, A., Hendricks, K., Kerbrat, A., & Comtois, K. A. (2019). Adolescent clinical populations and associations between trauma and behavioral and emotional problems. *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(3), 266–273. https://doi.org/10.1037/tra0000371

Delgado, R., & Stefancic, J. (2017). *Critical race theory: An introduction (3rd ed.).* New York University Press.

Delgado, R., & Stefancic, J. (2023). *Critical race theory: An introduction (4th ed.).* New York University Press.

DeLisi, M., Drury, A. J., Kosloski, A. E., Caudill, J. W., Conis, P. J., Anderson, C. A., ... & Beaver, K. M. (2010). The cycle of violence behind bars: Traumatization and institutional misconduct among juvenile delinquents in confinement. *Youth Violence and Juvenile Justice*, *8*(2), 107-121. https://doi.org/10.1177/1541204009349399

DeLisi, M., & Vaughn, M. G. (2014). Foundation for a temperament-based theory of antisocial behavior and criminal justice system involvement. *Journal of Criminal Justice*, *42*, 10-25. https://doi.org/10.1016/j.jcrimjus.2013.11.001

DeLisi, M., Vaughn, M. G., Salas-Wright, C. P., & Maynard, B. R. (2014). Violence and externalizing behavior among youth in the United States: Is there a severe 5%? *Youth Violence and Juvenile Justice*, *12*(2), 114-133.

https://doi.org/10.1177/1541204013478973

Dierkhising, C. B., Ko, S. J., Woods-Jaeger, B., Briggs, E. C., Lee, R., & Pynoos, R. S. (2013). Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network. *European Journal of Psychotraumatology, 4*(1), 20274. https://doi.org/10.3402/ejpt.v4i0.20274

Dierkhising., C. B., Lane, A., Natsuaki, M.N. (2014). Victims behind bars: A preliminary study of abuse during juvenile incarceration and post-release social and emotional functioning. *Psychology, Public Policy and Law, 20*(2):181-190. doi: 10.1037/LAW0000002

Division of Youth Services (2019). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Division of Youth Services (2020). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Division of Youth Services (2021). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Division of Youth Services (2022). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Division of Youth Services (2023). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Division of Youth Services (2023). *Validating Rovner's "Black disparities in youth incarceration: Racial disparities persist but fall from all-time high."* Unpublished manuscript.

Division of Youth Services (2024). *Annual report: Division of Youth Services, Colorado Department of Human Services*. Retrieved from: https://drive.google.com/drive/folders/1PEe_K_9Jw7PcPWMOnuL8A-z93gCFZw0b

Dodd, C. G., Kassing, F., Alvis, L. M., Hill, R. M., & Kaplow, J. B. (2022). Prevalence and correlates of externalizing behaviors among youth seeking treatment following trauma exposure. *Psychological Trauma: Theory, Research, Practice, and Policy*. Advance online publication. https://doi.org/10.1037/tra0001219

Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse & Neglect, 28*(7), 771–784. https://doi.org/10.1016/j.chiabu.2004.01.008

Duke, N., Pettingell, S. L., McMorris, B. J., & Borowsky, I. (2010). Adolescent violence perpetuation: Association with multiple types of adverse childhood experiences. *Pediatrics, 125*, e778–e786.

Dutil, S. (2020). Dismantling the school-to-prison pipeline: A trauma-informed, critical race perspective on school discipline. *Children & Schools*, 1-8. https://doi.org/10.1093/cs/cdaa016

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community

respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry*, *160*(8), 1453–1460. https://doi.org/10.1176/appi.ajp.160.8.1453

Eltink, E. M. A., Ten Hoeve, J., De Jongh, T., Van der Helm, G. H. P., Wissink, I. B., & Stams, G. J. J. M. (2018). Stability and change of adolescents' aggressive behavior in residential youth care. *Child & Youth Care Forum, 47,* 199-217. https://doi.org/10.1007/s10566-017-9425-y

Elwyn, L. J., Esaki, N., & Smith, C. A. (2017). Importance of leadership and employee engagement in trauma-informed organizational change at a girls' juvenile justice facility. *Human Service Organizations: Management, Leadership & Governance*, *41*(2), 106-118. https://doi.org/10.1080/23303131.2016.1200506

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling, 8*(3), 430-457. https://doi.org/10.1207/S15328007SEM0803_5

Enders, C. K. (2010). *Applied missing data analysis.* Guilford Press.

Erikson, E. H. (1950) *Childhood and Society*. W.W. Norton & Company.

Erikson, E. H. (1995). *A Way of Looking at Things*. W. W. Norton & Company.

Espelage, D. L. (2014). Ecological theory: Preventing youth bullying, aggression, and victimization. *Theory into Practice*, *53*(4), 257-264.

Espinosa, E. M. and Sorensen, J. R. (2015). The influence of gender and traumatic experiences on length of time served in juvenile justice settings. *Criminal Justice and Behavior, 43*(2), 187-203. https://doi.org/10.1177/0093854815605540

Fader, J. J. (2013). *Falling back: Incarceration and transitions to adulthood among urban youth*. Rutgers University Press.

Fader, J. J., Kurlychek, M. C., & Morgan, K. A. (2014). The color of juvenile justice: Racial disparities in dispositional decisions. *Social Science Research, 44*, 126–140. https://doi.org/10.1016/j.ssresearch.2013.11.006

Feagin, J. R. (2006). *Systemic racism: A theory of oppression*. Routledge Press.

Fagan, A. A., & Catalano, R. F. (2013). What works in youth violence prevention: A review of the literature. *Research on Social Work Practice*, *23*(2), 141–156. https://doi.org/10.1177/1049731512465899

Farrell, C., & Zimmerman, G. M. (2017). Does offending intensify as exposure to violence aggregates? Reconsidering the effects of repeat victimization, types of exposure to violence, and poly-victimization on property crime, violent offending, and substance use. *Journal of Criminal Justice, 53*, 25-33. https://doi.org/10.1016/j.jcrimjus.2017.09.004

Farrington, D. P., Gaffney, H., & Ttofi, M. M. (2017). Systematic reviews of explanatory risk factors for violence, offending, and delinquency. *Aggression and Violent Behavior*, *33*, 24-36. https://doi.org/10.1016/j.avb.2016.11.004

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8

Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007a). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect*, *31*(1), 7–26. https://doi.org/10.1016/j.chiabu.2006.06.008

Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007b). Re-victimization patterns in a national longitudinal sample of children and youth. *Child Abuse & Neglect, 31*, 479–502. https://doi.org/10.1016/j.chiabu.2006.03.012

Finkelhor, D., Ormrod, R., Turner, H., & Holt, M. (2009). Pathways to polyvictimization. *Child Maltreatment, 14*, 316-329. https://doi.org.aurarialibrary.idm.oclc.org/10.1177/1077559509347012

Finkelhor, D., Turner, H.A., Hamby, S.L., and Ormrod, R.K. (2011). Poly-victimization: Children's exposure of multiple types of violence, crime, and abuse. OJJDP Juvenile Justice Bulletin - NCJ235504 (pgs. 1-12). US Government Printing Office.

Fitton, L., Yu, R., & Fazel, S. (2020). Childhood maltreatment and violent outcomes: A systematic review and meta-analysis of prospective studies. *Trauma, Violence, & Abuse, 21*(4), 754-768. https://doi-org.aurarialibrary.idm.oclc.org/10.1177/1524838018795269

Ford, J. D., Charak, R., Karatzias, T., Shevlin, M., & Spinazzola, J. (2022). Can developmental trauma disorder be distinguished from posttraumatic stress disorder? A symptom-level person-centred empirical approach. *European Journal of Psychotraumatology*, *13*(2). https://doi.org/10.1080/20008066.2022.2133488

Ford, J. D., & Blaustein, M. E. (2013). Systemic self-regulation: a framework for trauma-informed services in residential juvenile justice programs. *Journal of Family Violence*, *28*(7), 665-677. https://doi.org/10.1007/s10896-013-9538-5

Ford, J. D., Chapman, J., Connor, D. F., & Cruise, K. R. (2012). Complex trauma and aggression in secure juvenile justice settings. *Criminal Justice and Behavior*, *39*(6), 694-724. https://doi.org/10.1177/0093854812436957

Ford, J. D., Charak, R., Karatzias, T., Shevlin, M., & Spinazzola, J. (2022). Can developmental trauma disorder be distinguished from posttraumatic stress disorder? A symptom-level person-centered empirical approach. *European Journal of Psychotraumatology*, *13*(2). https://doi.org/10.1080/20008066.2022.2133488

Ford, J. D., Elhai, J. D., Connor, D. F., & Frueh, B. C. (2010). Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. *Journal of Adolescent Health*, *46*(6), 545–552. https://doi.org/10.1016/j.jadohealth.2009.11.212

Ford, J. D., Grasso, D. J., Hawke, J., & Chapman, J. F. (2013). Poly-victimization among juvenile justice-involved youths. *Child Abuse & Neglect*, *37*(10), 788-800. https://doi.org/10.1016/j.chiabu.2013.01.005

Ford, J. D., Spinazzola, J., van der Kolk, B., & Grasso, D. (2018). Toward an empirically-based developmental trauma disorder diagnosis for children: Factor structure, item characteristics, reliability, and validity of the developmental trauma disorder semi-structured interview (DTD-SI). *Journal of Clinical Psychiatry, 79*(5), e1–e9. https://doi.org/doi.org/10.4088/JCP.17m11675

Ford, J. D., Spinazzola, J., & van der Kolk, B. (2021). Psychiatric comorbidity of developmental trauma disorder and posttraumatic stress disorder: findings from the DTD field trial replication (DTDFT-R). *European Journal of Psychotraumatology, 12*(1), 1929028. https://doi.org/10.1080/20008198.2021.1929028

Foshee, V. A., McNaughton Reyes, H. L., Chen, M. S., Ennett, S. T., Basile, K. C., DeGue, S., Vivolo-Kantor, A. M., Moracco, K. E., & Bowling, J. M. (2016). Shared risk factors for the perpetration of physical dating violence, bullying, and sexual harassment among

adolescents exposed to domestic violence. *Journal of Youth and Adolescence*, *45*(4), 672–686. https://doi.org/10.1007/s10964-015-0404-z

Fox, B. H., Perez, N., Cass, E., Baglivio, M. T., & Epps, N. (2015). Trauma changes everything: examining the relationship between adverse childhood experiences and serious, violent and chronic juvenile offenders. *Child Abuse & Neglect, 46,*163-173. https://doi.org/10.1016/j.chiabu.2015.01.011

Fox-Williams, B. N. (2019). The rules of (dis)engagement: Black youth and their strategies for navigating police contact. *Sociological Forum*, *34*(1), 115–137. https://doi.org/10.1111/socf.12484

Freud, S. (1959). *Three Essays on Sexuality*. Hogarth Press.

Galán, C. A., Auguste, E. E., Smith, N. A., & Meza, J. I. (2022). An Intersectional-contextual approach to racial trauma exposure risk and coping among Black youth. *Journal of Research on Adolescence*, *32*(2), 583–595. https://doi.org/10.1111/jora.12757

Gardner, M. (2016). Youthful offenders and the eighth amendment right to rehabilitation: Limitations on the punishment of juveniles. *Tennessee Law Review, 83*, 455-527.

Garza, M. R., Rich, K., & Omilian, S. M. (2019). A trauma-informed call to action: Culturally-informed, multidisciplinary theoretical and applied approaches to prevention and healing. *Journal of Aggression, Maltreatment & Trauma, 28*(4), 385–388. https://doi.org/10.1080/10926771.2019.1601144

Gesell, A. (1950). *The First Five Years of Life*. Methuen.

Gilman A. B., Hill K. G., Hawkins J. D. (2015). When is a youth's debt to society paid? Examining the long-term consequences of juvenile incarceration for adult functioning.

*Journal of Developmental and Life Course Criminology, 1*(1), 33–47. https://doi.org/10.1007/s40865-015-0002-5

Gilman, A. B., Walker, S. C., Vick, K., & Sanford, R. (2021). The impact of detention on youth outcomes: A rapid evidence review. *Crime & Delinquency, 67*(11), 1792-1813. https://doi.org/10.1177/00111287211014141

Ginwright, S., & Cammarota, J. (2002). New terrain in youth development: The promise of a social justice approach. *Social Justice*, *29*(4), 82–95. http://www.jstor.org.aurarialibrary.idm.oclc.org/stable/29768150

Goldberg, D. T. (1992). The semantics of race. *Ethnic and Racial Studies*, *15*(4), 543–569. https://doi.org/10.1080/01419870.1992.9993763

González, T. (2017). Youth incarceration, health, and length of stay. *The Fordham Urban Law Journal*, *45*(1), 45-82. https://ir.lawnet.fordham.edu/ulj/vol45/iss1/2

Graves, J., Steele, J., Kaba, F., Glowa-Kollisch, S., Ramdath, C., Rosner, Z., ... & Venters, H. (2015). Traumatic brain injury focus groups as a means to understand violence among adolescent males in the NYC jail system. *Journal of Health Care for the Poor and Underserved*, *26*(2), 345-357.

Greeson, J. K. P., Briggs, E. C., Layne, C. M., Belcher, H. M. E., Ostrowski, S. A., Kim, S., Lee, R. C., Vivrette, R. L., Pynoos, R. S., & Fairbank, J. A. (2014). Traumatic childhood experiences in the 21st century: Broadening and building on the ACE studies with data from the National Child Traumatic Stress Network. *Journal of Interpersonal Violence*, 29(3), 536–556. https://doi.org/10.1177/0886260513505217

Grevstad, J. A. (2010, June 8). *Adverse childhood experiences and juvenile justice* [PowerPoint]. Washington State Family Policy Council.

Habersaat, S., Boonmann, C., Schmeck, K., Stéphan, P., Francescotti, E., Fegert, J. M., Perler, C., Gasser, J., Schmid, M., & Urben, S. (2018). Differences and similarities in predictors of externalizing behavior problems between boys and girls: A 1-year follow-up study. *Criminal Justice and Behavior*, *45*(12), 1852–1870. https://doi.org/10.1177/0093854818800364

Haerle, D. R. (2019). Unpacking adultification: Institutional experiences and misconduct of adult court and juvenile court youth living under the same roof. *International Journal of Offender Therapy and Comparative Criminology*, *63*(5), 663-693. https://doi.org/10.1177/0306624X18811083

Hair, J. F., Babin, B. J., Black, W. C., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Harris, J. K. (2021). Primer on binary logistic regression. *Family Medicine and Community Health*, *9*(Suppl 1): e001290. https://doi.org.aurarialibrary.idm.oclc.org/10.1136%2Ffmch-2021-001290

Hartup, W. W. (2005). The Development of Aggression: Where Do We Stand? In R. E. Tremblay, W. W. Hartup, & J. Archer (Eds.), *Developmental origins of aggression* (pp. 3–22). The Guilford Press.

Hartup, W.W., Johnson, A., & Weinberg, R.A. (2001). The Institute of Child Development: Pioneering in science and application. In W.W. Hartup & R. A. Weinberg (Eds.), *Child psychology in retrospect and prospect: The 32nd Minnesota Symposium on Child Psychology* (pp. 227-257). Erlbaum.

Hay, C., & Evans, M. M. (2006). Violent victimization and involvement in delinquency: Examining predictions from general strain theory. *Journal of Criminal Justice*, *34*(3), 261–274. https://doi.org/10.1016/j.jcrimjus.2006.03.005

Hein, S., Barbot, B., Square, A., Chapman, J. F., Geib, C. F., & Grigorenko, E. L. (2017). Violent offending among juveniles: A 7-year longitudinal study of recidivism, desistance, and associations with mental health. *Law and Human Behavior*. https://doi.org/10.1037/LHB0000241

Herrenkohl, T. I. (2011). Family violence and co-occurring risk factors for children exposed to violence. In T. I. Herrenkohl, E. Eisenberg, J. H. Williams & J. M. Jensen (Eds.). *Violence in Context: Current evidence on risk, protection, and prevention* (pp. 73-91). Oxford University Press.

Herrenkohl, T. I., Hill, K. G., Chung, I.-J., Guo, J., Abbott, R. D., & Hawkins, J. D. (2003). Protective factors against serious violent behavior in adolescence: A prospective study of aggressive children. *Social Work Research*, *27*(3), 179–191. https://doi.org/10.1093/swr/27.3.179

Herrenkohl, T. I., Mersky, J. P., & Topitzes, J. (2019). Applied and translational research on trauma-responsive programs and policy: Introduction to a special issue of the American Journal of Community Psychology. *American Journal of Community Psychology*, *64*(3–4), 281–285. https://doi.org/10.1002/ajcp.12402

Himmelstein, K. E., W., & Bruckner, H. (2011). Criminal-justice and school sanctions against nonheterosexual youth: A national longitudinal study. *Pediatrics*, *127*(1), 49-57. https://doi.org/10.1542/peds.2009-2306

Hockenberry, S. & Puzzanchera, C. (2021, June). Juvenile Court Statistics 2019. National Center for Juvenile Justice. Retrieved from: https://www.ojjdp.gov/ojstatbb/njcda/pdf/jcs2019.pdf

Ingram, K. M., Espelage, D. L., Davis, J. P., & Merrin, G. J. (2020). Family violence, sibling, and peer aggression during adolescence: Associations with behavioral health outcomes. *Frontiers in Psychiatry*, *11*, 26. https://doi.org/10.3389/fpsyt.2020.00026

Irby, M. B., Hamlin, D., Rhoades, L., Freeman, N. R., Summers, P., Rhodes, S. D., & Daniel, S. (2018). Violence as a health disparity: Adolescents' perceptions of violence depicted through photovoice. *Journal of Community Psychology*, *46*(8), 1026-1044. https://doi.org/10.1002/jcop.22089

Jang, S. J., & Johnson, B. R. (2003). Strain, negative emotions, and deviant coping among African Americans: A test of general strain theory. *Journal of Quantitative Criminology*, *19*(1), 79–105. https://doi.org/10.1023/A:1022570729068

Javdani, S. (2019). Critical issues for youth involved in the youth criminal legal system: Innovations in prevention, intervention, and policy. *Journal of Prevention & Intervention in the Community*, *47*(2), 67-75. https://doi.org/10.1080/10852352.2019.1575564

Jennings, W. G., Higgins, G. E., Tewksbury, R., Gover, A. R., & Piquero, A. R. (2010). A longitudinal assessment of the victim–offender overlap. *Journal of Interpersonal Violence, 25*, 2147–2174. https://doi-org.aurarialibrary.idm.oclc.org/10.1177/0886260509354888

Jennings, W. G., Piquero, A. R., & Reingle, J. M. (2012). On the overlap between victimization and offending: A review of the literature. *Aggression and Violent Behavior*, *17*(1), 16–26. https://doi.org/10.1016/j.avb.2011.09.003

Jordan, K. (2021). Critical race theory, wrongful convictions and disparate exonerations of minority and white youths in the United States. *Journal of Mental Health and Social Behaviour*, *3*(2), 148. https://doi.org/10.33790/jmhsb1100148

Jung, H., Herrenkohl, T. I., Lee, J. O., Hemphill, S. A., Heerde, J. A., & Skinner, M. L. (2017). Gendered pathways from child abuse to adult crime through internalizing and externalizing behaviors in childhood and adolescence. *Journal of Interpersonal Violence*, *32*(18), 2724–2750. https://doi.org/10.1177/0886260515596146

Kanigel, R. (2019). *The diversity style guide*. John Wiley & Sons.

Kaplow, J. B., Rolon-Arroyo, B., Layne, C. M., Rooney, E., Oosterhoff, B., Hill, R., Steinberg, A. M., Lotterman, J., Gallagher, K. A. S., & Pynoos, R. S. (2020). Validation of the UCLA PTSD Reaction Index for DSM-5: A developmentally informed assessment tool for youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, *59*(1), 186–194. https://doi.org/10.1016/j.jaac.2018.10.019

Keels, M. (2022). Developmental & ecological perspective on the intergenerational transmission of trauma & violence. *Daedalus*, *151*(1), 67–83. https://doi.org/10.1162/daed_a_01889

Keels, M. (2024). Responding to the trauma that is endemic to the criminal legal system: Many opportunities for juvenile prevention, intervention, and rehabilitation. *Annual Review of Criminology*, *7*(Volume 7, 2024), 329–355. https://doi.org/10.1146/annurev-criminol-022222-040148

Kerig, P. K. (2018). Polyvictimization and girls' involvement in the juvenile justice system: Investigating gender-differentiated patterns of risk, recidivism, and resilience. *Journal of Interpersonal Violence, 33*(5), 789–809. https://doi.org/10.1177/0886260517744843

Kerig, P. K. (2019). Linking childhood trauma exposure to adolescent justice involvement: The concept of posttraumatic risk-seeking. *Clinical Psychology: Science and Practice*, *26*(3). https://doi.org/10.1111/cpsp.12280

Kerig, P. K., & Becker, S. P. (2010). From internalizing to externalizing: Theoretical models of the processes linking PTSD to juvenile delinquency. In S. J. Egan (Ed.), *Post-traumatic stress disorder (PTSD): Causes, symptoms and treatment* (pp. 33–78). Nova Science.

Kerig, P. K., & Becker, S. P. (2011). Trauma and girls' delinquency. In S. Miller-Johnson, L. Leve, & P. K. Kerig (Eds.), *Delinquent girls* (pp.119 –143). Springer.

Kerig, P. K., & Bennett, D. C. (2013). Beyond fear, helplessness, and horror: Peritraumatic reactions associated with posttraumatic stress symptoms among traumatized delinquent youth. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(5), 431–438. https://doi.org/10.1037/a0029609

Khamis, V. (2019). Posttraumatic stress disorder and emotion dysregulation among Syrian refugee children and adolescents resettled in Lebanon and Jordan. *Child Abuse & Neglect, 89*, 29–39. https://doi.org/10.1016/j.chiabu.2018.12.013

King, D. C., Abram, K. M., Romero, E. G., Washburn, J. J., Welty, L. J., & Teplin, L. A. (2011). Childhood maltreatment and psychiatric disorders among detained youths. *Psychiatric Services, 62*(12), 1430–1438. https://doi.org/10.1176/appi.ps.004412010

Kira, I. A., Aljakoub, J., Al Ibraheem, B., Shuwiekh, H. A. M., & Ashby, J. S. (2022). The etiology of complex PTSD in the COVID-19 and continuous traumatic stressors era: A test of competing and allied models. *Journal of Loss and Trauma*, *27*(7), 608–628. https://doi.org/10.1080/15325024.2022.2028094

Kirkinis, K., Pieterse, A. L., Martin, C., Agiliga, A., & Brownell, A. (2018). Racism, racial discrimination, and trauma: A systematic review of the social science literature. *Ethnicity & Health, 26*(3), 392–412. https://doi.org/10.1080/13557858.2018.1514453

Knutson, J. F., & Schartz, H. A. (1997). Physical abuse and neglect of children. In T. A. Widiger, A. J. Frances, H. A. Pincus, R. Ross, M. B. First, & W. Davis (Eds.), *DSM-IV sourcebook* (Vol. 3, pp. 713–804). American Psychiatric Association Press.

Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., ... & Layne, C. M. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice*, *39*(4), 396-404. https://doi.org/10.1037/0735-7028.39.4.396

Kort-Butler, L. A. (2010). Experienced and vicarious victimization: Do social support and self-esteem prevent delinquent responses? *Journal of Criminal Justice*, *38*(4), 496–505. https://doi.org/10.1016/j.jcrimjus.2010.04.019

Kovera, M. B. (2019). Racial disparities in the criminal justice system: Prevalence, causes, and a search for solutions. *Journal of Social Issues, 75*, 1139–1164. https://doi.org/10.1111/josi.12355

Kowalski, M. A. (2019). Adverse childhood experiences and justice-involved youth: The effect of trauma and programming on different recidivistic outcomes. *Youth Violence & Juvenile Justice, 17*(4), 354–384. https://doi.org/10.1177/1541204018809836

Krishnan, V. (2010, May). Early child development: A conceptual model. In *Early Childhood Council Annual Conference* (pp. 1-17).

Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, *360*, 1083-1088. https://doi.org/10.1016/S0140-6736(02)11133-0

Lacourse, E., Dupéré, V., & Loeber, R. (2008). Developmental trajectories of violence and theft. In R. Loeber, D. P. Farrington, M. Stouthamer-Loeber, & H. R. White (Eds.), *Violence and serious theft: Development and prediction from childhood to adulthood* (pp. 231–268). Routledge/Taylor & Francis Group.

Lai, Y.-L. (2019). Determinants of importation and deprivation models on committed juvenile offenders' violent misconduct: A Taiwanese perspective. *International Journal of Offender Therapy and Comparative Criminology*, *63*(8), 1242–1264. https://doi.org/10.1177/0306624x18815991

Lansford, J. E., Miller-Johnson, S., Berlin, L. J., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2007). Early physical abuse and later violent delinquency: A prospective longitudinal study. *Child Maltreatment, 12*, 233–245.

Lanza, S. T., & Collins, L. M. (2008). A new SAS procedure for latent transition analysis: Transitions in dating and sexual risk behavior. *Developmental Psychology, 44*, 446–456. https://doi.org/10.1037/0012-1649.44.2.446

Lanza, S. & Rhoades, B. (2013). Latent class analysis: an alternative perspective on subgroup analysis in prevention and treatment. *Prevention Science, 14*(2), 157-168. https://doi.org/10.1007/s11121-011-0201-1

Lanza, S. T., Tan, X., & Bray, B. C. (2013). Latent class analysis with distal outcomes: A flexible model-based approach. *Structural Equation Modeling: A Multidisciplinary Journal*, *20*(1), 1–26. https://doi.org/10.1080/10705511.2013.742377

Latessa, E. J., Listwan, S. L., & Koetzle, D. (2015). *What works (and doesn't) in reducing recidivism*. Routledge.

Lauritsen, J. L., & Quinet, K. F. D. (1995). Repeat victimization among adolescents and

young adults. *Journal of Quantitative Criminology, 11*, 143–166. https://doi.org/10.1007/BF02221121

Lauritsen, J. L., Sampson, R. J., & Laub, J. H. (1991). The link between offending and victimization among adolescents. *Criminology, 29*, 265–292. https://doi-org.aurarialibrary.idm.oclc.org/10.1111/j.1745-9125.1991.tb01067.x

Layne, C. M., Greeson, J. K. P., Ostrowski, S. A., Kim, S., Reading, S., Vivrette, R. L., Briggs, E. C., Fairbank, J. A., & Pynoos, R. S. (2014). Cumulative trauma exposure and high-risk behavior in adolescence: Findings from the National Child Traumatic Stress Network Core Data Set. *Psychological Trauma: Theory, Research, Practice, and Policy*, *6* (Suppl. 1), S40–S49. https://doi.org/10.1037/a0037799

Lefrancois, G. R. (1999). The lifespan. Wadsworth. *National Institute for Clinical Excellence (NICE)*. Available from: https://www.nice.org.uk

Leiber, M. J. (2013). Race, pre-and post-detention, and juvenile justice decision making. *Crime & Delinquency, 59*(3), 396–418. https://doi.org/10.1177/00111 28709 34597 0.

Levenson, J. S., Baglivio, M., Wolff, K. T., Epps, N., Royall, W., Gomez, K. C., & Kaplan, D. (2017). You learn what you live: Prevalence of childhood adversity in the lives of juveniles arrested for sexual offenses. *Advances in Social Work*, *18*(1), 313-334. https://doi.org/10.18060/21204

Liming, K. W., & Grube, W. A. (2018). Wellbeing outcomes for children exposed to multiple adverse experiences in early childhood: A systematic review. *Child and Adolescent Social Work Journal*, *35*(4), 317–335. https://doi.org/10.1007/s10560-018-0532-x

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika*, *88*(3), 767–778. https://doi.org/10.1093/biomet/88.3.767

Logan-Greene, P., Kim, B., & Nurius, P. (2020). Adversity profiles among court-involved youth: Translating system data into trauma-responsive programming. *Child abuse & Neglect, 104*, 104465. https://doi.org/10.1016/j.chiabu.2020.104465

Loman, M. M., & Gunnar, M. R. (2010). Early experience and the development of stress reactivity and regulation in children. *Neuroscience & Biobehavioral Reviews*, *34*(6), 867–876. https://doi.org/10.1016/j.neubiorev.2009.05.007

López, C. M., Andrews III, A. R., Chisolm, A. M., de Arellano, M. A., Saunders, B., & Kilpatrick, D. (2017). Racial/ethnic differences in trauma exposure and mental health disorders in adolescents. *Cultural Diversity and Ethnic Minority Psychology, 23*(3), 382. http://dx.doi.org/10.1037/cdp0000126

Loughran, T. A., Mulvey, E. P., Schubert, C. A., Fagan, J., Piquero, A. R., & Losoya, S. H. (2009). Estimating a dose-response relationship between length of stay and future recidivism in serious juvenile offenders. *Criminology*, *47*(3), 699-740. https://doi.org/10.1111/j.1745-9125.2009.00165.x

Lowery, P. G., Burrow, J. D., & Kaminski, R. J. (2016). A multilevel test of the racial threat hypothesis in one state's juvenile court. *Crime & Delinquency, 64*(1), 53-87. https://doi.org/10.1177/0011128716678192

Lyons-Ruth, K., & Brumariu, L. E. (2021). Emerging child competencies and personality pathology: Toward a developmental cascade model of BPD. *Current Opinion in Psychology, 37*, 32–38. https://doi.org/10.1016/j.copsyc.2020.07.004

Maas, C., Herrenkohl, T. I., & Sousa, C. (2008). Review of research on child maltreatment and violence in youth. *Trauma, Violence, & Abuse*, *9*(1), 56-67. https://doi.org/10.1177/1524838007311105

Maldonado-Molina, M. M., Jennings, W. G., Tobler, A. L., Piquero, A. R., & Canino, G. (2010). Assessing victim–offender overlap among Hispanic youth. *Journal of Criminal Justice, 38*, 1191–1201. https://doi.org/10.1016/j.jcrimjus.2010.09.008

Malvaso, C. G., Cale, J., Whitten, T., Day, A., Singh, S., Hackett, L., ... & Ross, S. (2021). Associations between adverse childhood experiences and trauma among young people who offend: A systematic literature review. *Trauma, Violence, & Abuse*, 1-18. https://doi.org/10.1177/15248380211013132

Malvaso, C. G., Delfabbro, P., & Day, A. (2018). The maltreatment–offending association: A systematic review of the methodological features of prospective and longitudinal studies. *Trauma, Violence, & Abuse*, *19*(1), 20-34. https://doi.org/10.1177/1524838015620820

Marlowe, D., Ho, T., Carey, S., & Chadick, C. (2020). Employing standardized risk assessment in pretrial release decisions: Association with criminal justice outcomes and racial equity. *Law and Human Behavior, 44*(5), 361-376 . https://doi.org/10.1037/lhb0000413.

Martin, M. S., Eljdupovic, G., McKenzie, K., & Colman, I. (2015). Risk of violence by inmates with childhood trauma and mental health needs. *Law and Human Behavior*, *39*(6), 614. https://doi.org/10.1037/lhb0000149

Maschi, T., Morgen, K., Leibowitz, G., & Rees, J. (2019). Exploring the relationship between cumulative trauma and recidivism among older adults: Does race and offense history matter? *Traumatology*, *25*(1), 11-20. https://doi.org/10.1037/trm0000167

McCarter, S., & Durant, T. (2022). Disproportionate minority contact (DMC) to racial and ethnic disparities (RED) in juvenile justice: What does it mean, and does it matter? *Journal of*

*Forensic Social Work*, *6*(1), 57-76. https://doi.org/10.15763/issn.1936-9298.2022.6.1.57-76

McCuish, E. C., Corrado, R., Lussier, P., & Hart, S. D. (2014). Psychopathic traits and offending trajectories from early adolescence to adulthood. *Journal of Criminal Justice*, *42*(1), 66–76. https://doi.org/10.1016/j.jcrimjus.2013.12.004

McCuish, E., Lussier, P., & Corrado, R. (2016). Criminal careers of juvenile sex and nonsex offenders: Evidence from a prospective longitudinal study. *Youth Violence and Juvenile Justice*, *14*(3), 199–224. https://doi.org/10.1177/1541204014567541

McDougall, A., Campbell, M. A., & Santor, D. A. (2013). Institutional offense patterns in adolescent offenders: The role of antisocial and mental health indicators. *Youth Violence and Juvenile Justice*, *11*(2), 99-114. https://doi.org/10.1177/1541204012457960

McLachlan, G. J., & Peel, D. (2000). *Finite mixture models*. John Wiley & Sons.

McNeill, F. (2013). Transforming Rehabilitation: Evidence, values and ideology. *British Journal of Community Justice*, *11*(2-3), 83-85.

Mendel, R. A. (2011). *No place for kids: The case for reducing juvenile incarceration*. Annie E. Casey Foundation.

Mendoza, M., Blake, J. J., Marchbanks, M. P., & Ragan, K. (2020). Race, gender, and disability and the risk for juvenile justice contact. *The Journal of Special Education*, *53*(4), 226–235. https://doi.org/10.1177/0022466919845113

Mercy, J. A., Krug, E. G., Dahlberg, L. L., & Zwi, A. B. (2003). Violence and health: the United States in a global perspective. *American Journal of Public Health*, *93*(2), 256-261.

Metzger, I. W., Anderson, R. E., Are, F., & Ritchwood, T. (2021). Healing interpersonal and racial trauma: Integrating racial socialization into trauma-focused cognitive behavioral

therapy for African American youth. *Child Maltreatment, 26*(1), 17–27. https://doi.org/10.1177/1077559520921457

Miller, M. A., & Marsee, M. A. (2019). Emotional reactivity and antisocial behavior relative to posttraumatic stress symptom expression: A latent profile analysis. *Journal of Abnormal Child Psychology*, *47*(8), 1339-1350. https://doi.org/10.1007/s10802-019-00514-9

Mitton, K. (2019). Public health and violence. *Critical Public Health, 29*(2), 135-137. https://doi.org/10.1080/09581596.2019.1564223

Modrowski, C. A., Mendez, L., & Kerig, P. K. (2021). Associations among trauma exposure, posttraumatic dissociation, reckless/self-destructive behavior, and adolescent offending. *Journal of Trauma & Dissociation*, 1-15. https://doi-org.aurarialibrary.idm.oclc.org/10.1080/15299732.2020.1869655

Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, *100*(4), 674–701. https://doi.org/10.1037/0033-295X.100.4.674

Morris, M. (2016). *Pushout: The criminalization of Black girls in schools*. The New Press.

Mozley, M. M., Lin, B., & Kerig, P. K. (2018). Posttraumatic overmodulation, callous–unemotional traits, and offending among justice-involved youth. *Journal of Aggression, Maltreatment & Trauma*, *27*(7), 744-758. https://doi.org/10.1080/10926771.2017.1420724

Muthén, L. K., & Muthén, B. O. (2020). Mplus (Version 8.4). Author.

Nair, P., Schuler, M. E., Black, M. M., Kettinger, L., & Harrington, D. (2003). Cumulative environmental risk in substance abusing women: Early intervention, parenting stress, child abuse potential and child development. *Child Abuse & Neglect*, *27*(9), 997–1017.

https://doi.org/10.1016/s0145-2134(03)00169-8

National Research Council (2013). *Reforming Juvenile Justice: A Developmental Approach. Committee on Assessing Juvenile Justice Reform*, Richard J. Bonnie, Robert L. Johnson, Betty M. Chemers, and Julie A. Schuck, Eds. Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, D.C.: The National Academies Press.

Norton, E. C., Dowd, B. E., & Maciejewski, M. L. (2018). Odds ratios—current best practice and use. *JAMA, 320*(1), 84. https://doi.org/10.1001/jama.2018.6971

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A monte carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(4), 535–569. https://doi.org/10.1080/10705510701575396

Office of Juvenile Justice and Delinquency Prevention (2019). Statistical Briefing Book. Retrieved from https://www.ojjdp.gov/ojstatbb/snapshots/DataSnapshot_CJRP2017.pdf

Oglesby-Neal, A., & Peterson, B. (2021). Influence of race in the deep end of the youth criminal legal system. *Youth Violence and Juvenile Justice*, *19*(2), 186-205. https://doi.org/10.1177/1541204020958465

Olafson, E., Boat, B. W., Putnam, K. T., Thieken, L., Marrow, M. T., & Putnam, F. W. (2018). Implementing trauma and grief component therapy for adolescents and think trauma for traumatized youth in secure juvenile justice settings. *Journal of Interpersonal Violence*, *33*(16), 2537-2557. https://doi.org/10.1177/0886260516628287

Omura, J., Wood, E., Nguyen, P., Kerr, T., & DeBeck, K. (2014). Incarceration among street-involved youth in a Canadian study: Implications for health and policy interventions. *International Journal of Drug Policy, 25*, 291–296. https://10.1016/j.drugpo.2013.10.010

Opara, I., Assan, M. A., Pierre, K., Iii, J. F. G., Metzger, I., Hamilton, J., & Arugu, E. (2020). Suicide among Black children: An integrated model of the interpersonal-psychological theory of suicide and intersectionality theory for researchers and clinicians. *Journal of Black Studies, 51*(6), 611-631. https://doi.org/10.1177/002193472093541

Ousey, G. C., Wilcox, P., & Schreck, C. J. (2015). Violent victimization, confluence of risks and the nature of criminal behavior: Testing main and interactive effects from Agnew's extension of General Strain Theory. *Journal of Criminal Justice*, *43*(2), 164-173. https://doi.org/10.1016/j.jcrimjus.2015.02.006

Palmer, J. W. (2014). *Constitutional rights of prisoners*. Routledge.

Pane Seifert, H. T., Tunno, A. M., Briggs, E. C., Hill, S., Grasso, D. J., Adams, Z. W., & Ford, J. D. (2022). Polyvictimization and psychosocial outcomes among trauma-exposed, clinic-referred youth involved in the youth criminal legal system. *Child Maltreatment*, *27*(4), 626-636.

Papalia, N., & Widom, C. S. (2024). Do insecure adult attachment styles mediate the relationship between childhood maltreatment and violent behavior? Development and Psychopathology, 36(2), 636–647. https://doi.org/10.1017/S0954579422001468

Parke, R. D. & Slaby, R. (1983). The development of aggression. In P. H. Mussen (Series Ed.), E.M. Hetherington (Vol. Ed.), *Handbook of Child Psychology, Vol. 4, Socialization, personality, and social development* (pp. 547-641). Wiley.

Pechorro, P., DeLisi, M., Abrunhosa Gonçalves, R., Pedro Oliveira, J. (2021). The role of low

self-control as a mediator between trauma and antisociality/criminality in youth. *International Journal of Environmental Research & Public Health, 18*, 567. https://doi.org/10.3390/ijerph18020567

Pederson, C., Fite, P., & Poquiz, J. (2020). Demographic differences in youth perceptions of staff: A national evaluation of adjudicated youth. *International Journal of Offender Therapy and Comparative Criminology, 65*, 1143 - 1163. https://doi.org/10.1177/0306624X20928027

Perkins, N. H., & Barry, J. E. (2019). Should failure to protect laws include physical and emotional sibling violence? *Child & Family Social Work*, 206-209. https://doi.org/10.1111/cfs.12643

Piaget, J. (1952). *The Origins of Intelligence in Children.* International University Press.

Piaget, J., & Cook, M. T. (1954). *The construction of reality in the child*. Basic Books.

Piquero (2008). Disproportionate minority contact. *The Future of Children, 18,* 60-61. https://www.jstor.org/stable/20179979

Piquero, A. R. (2015). Understanding race/ethnicity differences in offending across the life course: Gaps and opportunities. *Journal of Developmental and Life-Course Criminology*, *1*(1), 21–32. https://doi.org/10.1007/s40865-015-0004-3

Piquero, N. L., & Sealock, M. D. (2000). Generalizing general strain theory: An examination of an offending population. *Justice Quarterly*, *17*(3), 449–484. https://doi-org.aurarialibrary.idm.oclc.org/10.1080/07418820000094631

Piquero, N. L., & Sealock, M. D. (2004). Gender and general strain theory: A preliminary test of Broidy and Agnew's gender/gst hypotheses. *Justice Quarterly, 21*(1), 125–158. https://doi.org/10.1080/07418820400095761

Polanco-Roman, L., Ebrahimi, C. T., Satinsky, E. N., Benau, E. M., Martins Lanes, A., Iyer, M., & Galán, C. A. (2024). Racism-related experiences and traumatic stress symptoms in ethnoracially minoritized youth: A systematic review and meta-analysis. *Journal of Clinical Child & Adolescent Psychology*, *53*(4), 690–707. https://doi.org/10.1080/15374416.2023.2292042

Polaschek, D. L. (2009). Rehabilitating high-risk offenders: Pre-treatment motivation, therapeutic responsivity, and change. *Journal of the New Zealand College of Clinical Psychologists, Spring*, 39-47.

Popkin, S. J., Bogle, M., Zweig, J. M., Saxena, P., Breslav, L., & Michie, M. (2015). Let girls be girls: How coercive sexual environments affect girls who live in disadvantaged communities and what we can do about it. Urban Institute.

Puzzanchera, C., Hockenberry, S., and Sickmund, M. (2022). *Youth and the juvenile justice system: 2022 national report*. National Center for Juvenile Justice.

Puzzanchera, C. (2021). *Juvenile arrests, 2019*. Office of Juvenile Justice and Delinquency Prevention.

Pynoos, R.S., & Steinberg, A.M. (2015). *UCLA PTSD Reaction Index for Children/Adolescents-DSM 5*. https://www.reactionindex.com

Ranganathan P., Pramesh C. S., Aggarwal R. (2017). Common pitfalls in statistical analysis: Logistic regression. *Perspectives in Clinical Reearch, 8*(3), 148-151. https://doi.org/10.4103/picr.PICR_87_17

Reid, J. A., & Loughran, T. A. (2021). A latent class typology of justice-involved youth victims and exploration of trauma-related psychological symptoms. *Justice Quarterly*, *38*(2), 181–195. https://doi.org/10.1080/07418825.2019.1595700

Reisch, M. (2002). Defining social justice in a socially unjust world. *Families in Society*, *83*(4), 343-354. https://doi.org/10.1606/1044-3894.17

Richmond, M. (1917). *Social diagnosis.* Russell Sage Foundation.

Ritchie, H. & Roser, M. (2019). "Causes of Death" (*Published online at OurWorldinData.org*). Retrieved from https://ourworldindata.org/causes-of-death [Online Resource]

Rivara, F., Adhia, A., Lyons, V., Massey, A., Mills, B., Morgan, E., Simckes, M., & Rowhani-Rahbar, A. (2019). The effects of violence on health. *Health Affairs*, *38*(10), 1622-1629,A1-A6. https://doi.org/10.1377/hlthaff.2019.00480

Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2011). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*, *41*(1), 71–83. https://doi.org/10.1017/s0033291710000401

Rosa, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology. *Journal of Family Theory & Review*, *5*(4), 243-258.

Rosenberg, H. J., Vance, J. E., Rosenberg, S. D., Wolford, G. L., Ashley, S. W., & Howard, M. L. (2014). Trauma exposure, psychiatric disorders, and resiliency in juvenile-justice-involved youth. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*(4), 430–437. https://doi.org/10.1037/a0033199

Rovner, J. (2016). Racial disparities in youth commitments and arrests. The Sentencing Project. Retrieved from: https://www.sentencingproject.org/publications/racial-disparities-in-youth-commitments-and-arrests/

Ruch, D. A., Steelesmith, D. L., Brock, G., Boch, S. J., Quinn, C. R., Bridge, J. A., Campo, J. V., & Fontanella, C. A. (2021). Mortality and cause of death among youths previously incarcerated in the juvenile legal system. *JAMA Network Open, 4*(12), e2140352. https://doi.org/10.1001/jamanetworkopen.2021.40352

Rutherford, A., Zwi, A. B., Grove, N. J., & Butchart, A. (2007). Violence: a priority for public health? (part 2). *Journal of Epidemiology & Community Health*, *61*(9), 764-770. DOI:10.1136/jech.2006.049072

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), Primary prevention of psychopathology: Vol. 3. Social competence in children (pp. 49–74). University Press of New England.

Saleem, F. T., Anderson, R. E., & Williams, M. (2020). Addressing the "myth" of racial trauma: Developmental and ecological considerations for youth of color. *Clinical Child and Family Psychology Review*, *23*(1), 1-14. https://doi.org/10.1007/s10567-019-00304-1

Saleem, F. T., Howard, T. C., & Langley, A. K. (2021). Understanding and addressing racial stress and trauma in schools: A pathway toward resistance and healing. *Psychology in the Schools*, *59*(12), 2506–2521. https://doi.org/10.1002/pits.22615

Sampson, R. J., & Laub, J. H. (1995). *Crime in the making: Pathways and turning points through life*. Harvard University Press.

Schreck, C. J., Stewart, E. A., & Osgood, D. W. (2008). A reappraisal of the overlap of violent offenders and victims. *Criminology*, *46*(4), 871–906. https://doi.org/10.1111/j.1745-9125.2008.00127.x

Schneider, S. (2020). Associations between childhood exposure to community violence, child maltreatment and school outcomes. *Child Abuse & Neglect, 104*, 104473.

https://doi.org/10.1016/j.chiabu.2020.104473

Sclove, S. L. (1987). Application of model-selection criteria to some problems in multivariate analysis. *Psychometrika*, *52*(3), 333–343. https://www.doi.org/10.1007/BF02294360

Scott, E. S. (2000). The legal construction of adolescence. *Hofstra Law. Review*, *29*, 547.

Scott, E. S., & Steinberg, L. (2003). Blaming youth. *Texas. Law Review*, *81*, 799-840.

Seay, K. D. (2020). Pathways from parental substance use to child internalizing and externalizing behaviors in a child protective services sample. *Child Maltreatment, 25*(4), 446–456. https://doi.org/10.1177/1077559520913638

Shelton, L. (2019). *The Bronfenbrenner primer: A guide to develecology*. Routledge.

Sichel, C. E., Burson, E., Javdani, S., & Godfrey, E. B. (2019). Theorizing safety informed settings: Supporting staff at youth residential facilities. *American Journal of Community Psychology, 63*, 405-417. https://doi.org/10.1002/ajcp.12307

Sickmund, M., Sladky, A., & Kang, W. (2019). Easy Access to Juvenile Court Statistics: 1985-2018. Retrieved from https://www.ojjdp.gov/ojstatbb/ezajcs/

Skeem, J. L., Polaschek, D. L., Patrick, C. J., & Lilienfeld, S. O. (2011). Psychopathic personality: Bridging the gap between scientific evidence and public policy. *Psychological Science in the Public Interest*, *12*(3), 95-162.

Skinner, B. F. (1948). Superstition in the pigeon. *Journal of Experimental Psychology, 38*, 168-172. https://doi:https://doi.org/10.1037/h0055873

Skinner, B. F. (1953). *Science and human behavior*. New York, NY: MacMillan.

Smith, C., & Thornberry, T. P. (1995). The relationship between childhood maltreatment and adolescent involvement in delinquency. *Criminology*, *33*(4), 451-481. https://doi.org/10.1111/j.1745-9125.1995.tb01186.x

Spinazzola, J., van der Kolk, B., & Ford, J. D. (2018). When nowhere is safe: Interpersonal trauma and attachment adversity as antecedents of posttraumatic stress disorder and developmental trauma disorder. *Journal of Traumatic Stress, 31*(5), 631–642. https://doi.org/10.1002/jts.22320

Spinazzola, J., van der Kolk, B., & Ford, J. D. (2021). Developmental trauma disorder: A legacy of attachment trauma in victimized children. *Journal of Traumatic Stress, 34*(4), 711–720. https://doi.org/10.1002/jts.22697

Stimmel, M. A., Cruise, K. R., Ford, J. D., & Weiss, R. A. (2014). Trauma exposure, posttraumatic stress disorder symptomatology, and aggression in male juvenile offenders. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*(2), 184–191. https://doi.org/10.1037/a0032509

Su, Y., Meng, X., Yang, G., & D'Arcy, C. (2022). The relationship between childhood maltreatment and mental health problems: coping strategies and social support act as mediators. *BMC Psychiatry*, *22*(1), 1-11. https://doi.org/10.1186/s12888-022-04001-2

Supkoff, L.M., Puig, J. & Sroufe, L.A. (2012). Situating resilience in developmental context. In M. Unger (Eds.) *The Social Ecology of Resilience* (pp. 127-142). Springer.

Tajima, E. A. (2021). First, do no harm: From diversity and inclusion to equity and anti-racism in interpersonal violence research and scholarship. *Journal of Interpersonal Violence*, *36*(11–12), 4953–4987. https://doi.org/10.1177/08862605211012999

Tasca, M., Griffin, M. L., & Rodriguez, N. (2010). The effect of importation and deprivation factors on violent misconduct: An examination of Black and Latino youth in prison. *Youth Violence and Juvenile Justice*, *8*(3), 234-249. https://doi-org.aurarialibrary.idm.oclc.org/10.1177/1541204010366619

Taxman, F. S. (2014). Second generation of RNR: The importance of systemic responsivity in expanding core principles of responsivity. *Federal Probation*, *78*(2), 79-91.

Tillaart, J. V. d., Eltink, E., Stams, G., Helm, P. v. d., & Wissink, I. B. (2018). Aggressive incidents in residential youth care. *International Journal of Offender Therapy and Comparative Criminology, 62*(13), 3991-4007. https://doi.org/10.1177/0306624x18758898

Torres, O. M. (2019). The not-so-hidden bias lurking within the criminal justice system: issues of race and gender in the law. *Social Justice and Equity Law Journal, 3*(1), 132-164.

Tremblay, R. E., & Côté, S. (2005). The Developmental Origins of Aggression: Where Are We Going? In R.E. Tremblay, W.W. Hartup, & J. Archer (Eds.), *Developmental origins of aggression* (pp. 447-464).

Tremblay, R. E., Hartup, W. W., & Archer, J. (Eds.). (2005). *Developmental origins of aggression*. Guilford Press.

Trulson, C. R., Craig, J. M., Caudill, J. W., & DeLisi, M. (2022). Violent institutional misconduct in the transition from juvenile to adult correctional facilities. *The Prison Journal*, *102*(5), 519–541. https://doi.org/10.1177/00328855221121079

Turanovic, J. J., & Pratt, T. C. (2013). The consequences of maladaptive coping: Integrating general strain and self-control theories to specify a causal pathway between victimization and offending. *Journal of Quantitative Criminology*, *29*(3), 321-345. https://doi.org/10.1007/s10940-012-9180-z

Ulloa, E. C., Dyson, R. B., & Wynes, D. D. (2012). Inter-partner violence in the context of gangs: A review. *Aggression and Violent Behavior*, *17*(5), 397–404. https://doi.org/10.1016/j.avb.2012.05.001

Unnever, J. D., & Chouhy, C. (2022). Black males, impulsivity, and externalizing behaviors: A Black criminology analysis. *Justice Quarterly*, *39*(3), 642–671. https://doi.org/10.1080/07418825.2020.1789200

Unnever, J. D., & Gabbidon, S. L. (2011). *A theory of African American offending: Race, racism, and crime*. Routledge.

Van der Helm, P., Stams, G. J., van Genabeek, M., & van der Laan, P. (2012). Group climate, personality, and self-reported aggression in incarcerated male youth. *The Journal of Forensic Psychiatry & Psychology*, *23*(1), 23–39. https://doi.org/10.1080/14789949.2011.633615

van der Kolk, B., Ford, J. D., & Spinazzola, J. (2019). Comorbidity of developmental trauma disorder (DTD) and post-traumatic stress disorder: findings from the DTD field trial. *European Journal of Psychotraumatology, 10*(1), 1562841. https://doi.org/10.1080/20008198.2018.1562841

van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. *Journal of Traumatic Stress, 18*(5), 389–399. https://doi.org/10.1002/jts.20047

Van der Zouwen, M., Hoeve, M., Hendriks, A. M., Asscher, J. J., & Stams, G. J. J. (2018). The association between attachment and psychopathic traits. *Aggression and Violent Behavior*, *43*, 45-55. https://doi.org/10.1016/j.avb.2018.09.00

Villalta, L., Smith, P., Hickin, N., & Stringaris, A. (2018). Emotion regulation difficulties in traumatized youth: A meta-analysis and conceptual review. *European Child & Adolescent Psychiatry, 27*(4), 527–544. https://doi.org/10.1007/s00787-018-1105-4

Vitopoulos, N. A., Peterson-Badali, M., Brown, S., & Skilling, T. A. (2019). The relationship between trauma, recidivism risk, and reoffending in male and female juvenile offenders. *Journal of Child & Adolescent Trauma*, *12*(3), 351-364. https://doi.org/10.1007/s40653-018-0238-4

Vuong, Q. H. (1989). Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica*, *57*(2), 307–333. https://doi.org/10.2307/1912557

Vygotsky, L.S. (1978). *Mind in Society*. Harvard University Press.

Wamser-Nanney, R., Cherry, K. E., Campbell, C., & Trombetta, E. (2021). Racial differences in children's trauma symptoms following complex trauma exposure. *Journal of Interpersonal Violence*, *36*(5–6), 2498–2520. https://doi.org/10.1177/0886260518760019

Washington, D. M., Harper, T., Hill, A. B., & Kern, L. J. (2021). Achieving juvenile justice through abolition: A critical review of social work's role in shaping the juvenile legal system and steps toward achieving an antiracist future. *Social Sciences*, *10*(6). https://doi.org/10.3390/socsci10060211

Webb, P., Savard, D., & Delaney, A. (2020). The color of confinement: examining youth exoneration decisions and the critical race theory. *Journal of Ethnicity in Criminal Justice, 18*(3), 206–237. https://doi.org/10.1080/15377938.2020.1754990

Weissman, D. G., Bitran, D., Miller, A. B., Schaefer, J. D., Sheridan, M. A., & McLaughlin, K. A. (2019). Difficulties with emotion regulation as a transdiagnostic mechanism linking child maltreatment with the emergence of psychopathology. *Development and Psychopathology, 31*(3), 899–915. https://doi.org/10.1017/S0954579419000348

Wen, A., Gubner, N. R., Garrison, M. M., & Walker, S. C. (2023). Racial disparities in youth pretrial detention: A retrospective cohort study grounded in critical race theory. *Health &*

*Justice*, *11*(1), 14. https://doi.org/10.1186/s40352-022-00203-8

Western, B., & Wildeman, C. (2009). The black family and mass incarceration. *Annals of the American Academy of Political and Social Science, 621*(1), 221-242. https://doi.org/10.1177/0002716208324850

Widom, C. S. (1989a). Child abuse, neglect, and adult behavior: Research design and findings on criminality, violence, and child abuse. *American Journal of Orthopsychiatry, 59*(3), 355-367. https://doi.org/10.1111/j.1939-0025.1989.tb01671.x

Widom, C. S. (1989b). The cycle of violence. *Science*, *244*(4901), 160-166. https://doi.org/10.1126/science.2704995

Widom, C. S. (2014). Varieties of violent behavior. *Criminology*, *52*(3), 313-344. https://doi-org.aurarialibrary.idm.oclc.org/10.1111/1745-9125.12046

Widom, C. S. (2017). Long-term impact of childhood abuse and neglect on crime and violence. *Clinical Psychology: Science and Practice, 24*(2), 186–202. https://doi.org/10.1037/h0101743

Widom, C. S. (2022). Long-term consequences of childhood maltreatment. In *Handbook of Child Maltreatment* (pp. 371-395). Springer, Cham.

Widom, C., DuMont, K., & Czaja, S. J. (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. *Archives of General Psychiatry*, *64*(1), 49–56. https://doi.org/10.1001/archpsyc.64.1.49

Williams, L. M., & Herrera, V. M. (2007). Child maltreatment and adolescent violence: Understanding complex connections. *Child Maltreatment*, *12*(3), 203–207. https://doi.org/10.1177/1077559507304427

Williams, M. T., Malcoun, E., Sawyer, B. A., Davis, D. M., Nouri, L. B., & Bruce, S. L. (2014). Cultural adaptations of prolonged exposure therapy for treatment and prevention of posttraumatic stress disorder in African Americans. *Behavioral Sciences, 4*(2), 102–124.

Williams, M. T., Metzger, I. W., Leins, C., & DeLapp, C. (2018). Assessing racial trauma within a DSM-5 framework: The UConn Racial/Ethnic Stress & Trauma Survey. *Practice Innovations, 3*(4), 242–260. http://dxdoi.org/10.1037/pri0000076

Williams, D. R., & Mohammed, S. A. (2013). Racism and health I: Pathways and scientific evidence. *American Behavioral Scientist*, *57*(8), 1152–1173. https://doi.org/10.1177/0002764213487340

Wilson, H. W., & Widom, C. S. (2010). Does physical abuse, sexual abuse, or neglect in childhood increase the likelihood of same-sex sexual relationships and cohabitation? A prospective 30-year follow-up. *Archives of Sexual Behavior, 39*, 63–74. https://doi:10.1007/s10508-008-9449-3

Wolff, K. T., & Baglivio, M. T. (2017). Adverse childhood experiences, negative emotionality, and pathways to juvenile recidivism. *Crime & Delinquency, 63*(12), 1495–1521. https://doi.org/10.1177/0011128715627469

World Health Organization (2014). *Global status report on violence prevention 2014.* WHO Press.

Wright, K. N. (1991). A study of individual, environmental, and interactive effects in explaining adjustment to prison. *Justice Quarterly*, *8*(2), 217-242. https://doi.org/10.1080/07418829100091011

Wright, E. M., & Fagan, A. A. (2013). The cycle of violence in context: Exploring the moderating roles of neighborhood disadvantage and cultural norms. *Criminology*, *51*(2), 217–249. https://doi.org/10.1111/1745-9125.12003

Yoder, J. R., Hodge, A. I., Ruch, D., & Dillard, R. (2019). Effects of childhood polyvictimization on victimization in juvenile correctional facilities: The mediating role of trauma symptomatology. *Youth Violence and Juvenile Justice*, *17*(2), 129–153. https://doi.org/10.1177/1541204018757038

Yoder, J., & Tunstall, A. (2022). Cascading effects of cumulative trauma: Callous traits among justice involved youth. *Youth Violence and Juvenile Justice*, *20*(4), 292–311. https://doi.org/10.1177/15412040221101922

Yohros, A. (2022). Examining the relationship between adverse childhood experiences and juvenile recidivism: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *24*(3), 1640-1655. https://doi.org/10.1177/15248380211073846

Yoon, S. (2017). Child maltreatment characteristics as predictors of heterogeneity in internalizing symptom trajectories among children in the child welfare system. *Child Abuse & Neglect, 72*, 247–257. https://doi.org/10.1016/jchiabu.2017.08.022

Yoon, S., Kobulsky, J. M., Yoon, D., & Kim, W. (2017). Developmental pathways from child maltreatment to adolescent substance use: The roles of posttraumatic stress symptoms and mother–child relationships. *Children and Youth Services Review, 82*, 271–279. https://doi.org/10.1016/j.childyouth.2017.09.035

Zell, E., Krizan, Z., & Teeter, S. R. (2015). Evaluating gender similarities and differences using metasynthesis. *American Psychologist*, *70*(1), 10. https://doi.org/10.1037/a0038208

Zhang, Y., Zhang, J., & Ding, C. (2019). Investigating the association between parental absence

and developmental trauma disorder symptoms. *Journal of Traumatic Stress, 32*(5), 733–741. https://doi.org/10.1002/jts.22446