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LOYOLA UNIVERSITY CHICAGO

INSTITUTIONAL EXPERIENCES OF JUSTICE-INVOLVED ADOLESCENTS:

PROFILES, PREDICTORS, AND POST-RELEASE ASSOCIATIONS

A DISSERTATION DEFENSE SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN CLINICAL PSYCHOLOGY

BY

ELIZABETH M. SARGENT

CHICAGO, IL

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CHAPTER ONE

INTRODUCTION

Due to the rehabilitative focus of the juvenile justice system in the United States, the majority of justice-involved youth are expected to receive intervention within their homes and communities after court involvement. However, many young people involved in the justice system will spend time in a setting away from home before or after adjudication. Juvenile Court Statistics from the Office of Juvenile Justice and Delinquency Prevention indicate that in 2018, about 26% of delinquency cases involved youth being detained prior to adjudication and 8% involved placement by the court after adjudication (Sickmund et al., 2020). Placement for youth who are found delinquent or guilty of an offense, referred to here as institutions, custody, secure settings, or residential placements, can include short-term or long-term correctional facilities, residential treatment centers, group homes, boot camps, wilderness camps, and shelters (Sickmund et al., 2019). Per the most recent Juvenile Residential Facility Census, there were 1,510 juvenile residential facilities housing 37,529 justice-involved youth in the United States on any given day in 2018 (Puzzanchera et al., 2020).

The effects of residential justice placements have long been a topic of concern amongst researchers and policy makers. There remain questions as to what experiences youth have in justice settings and how their offending behaviors and psychological well-being may be affected post-release from these settings. To explore these questions further, theories based on both community and correctional settings are useful. The current study pulls from an ecological stress

process approach, conceptualizing juvenile justice placements as settings to which adolescents take on unique stressors from their environments. More specifically, the ecological stress process model of violence exposure utilizes a stress process paradigm to conceptualize exposure to violence in childhood (Foster & Brooks-Gunn, 2009). This model recognizes multiple sources of stress, mediators and moderators of stress, and the outcomes of stress, as interconnected (Mohammad et al, 2015; Foster & Brooks-Gunn, 2009). Contributing factors to chronic stress and increased violence exposure in community settings can include neighborhood disadvantage, structural inequities, racism, family adversities, low socioeconomic status as well as individual factors such as how youth cope with stress (Foster & Brooks-Gunn, 2009). Parallel to how stressful experiences within a community setting can contribute to symptoms of mental illness and delinquent behaviors in youth (Moffitt, 2013; Flannery et al., 2007; Mrug & Windle, 2010; Wilson et al., 2009), stressful experiences within a justice setting may have similar associations. Stressors within juvenile justice placements can include exposure to violence as well as the sanctions and restrictions unique to justice settings.

In addition to an ecological process approach, the deprivation and importation theories of imprisonment are relevant to the current study. Deprivation theory recognizes that correctional settings deny individuals freedom and control, which contributes to distress (Sykes, 1958; Thomas, 1977). Restrictions and punishments seen within correctional settings (e.g. limited time outside a cell, solitary confinement, room searches, lack of privacy) can be environmental stressors which contribute to psychological dysfunction (van der Laan & Eichelsheim, 2013). However, what individuals bring with them into correctional settings also matters. Importation theory highlights how adjustment to and experience in justice settings depend on personal characteristics, vulnerabilities, and experiences prior to placement (Thomas, 1977). In line with

importation theory, youth who enter the justice system often have several psychosocial risk factors and certain groups based on demographics are at increased risk of justice-involvement as well. For example, research has highlighted higher representation of males, Black, Latinx and Native American youth, and youth from low-income families in the justice system (Scott et al., 2002). Previous research also suggests youth with past mental health diagnoses and hospitalizations are at higher risk for justice involvement than those without a mental health history (Scott et al., 2002). Lastly, trauma experiences are an important factor to consider, as the majority of adolescents who enter the justice system have extensive backgrounds of violence exposure (Barnert et al., 2016; Abram et al., 2004; Martin et al., 1998) in addition to other environmental factors such as low parental supervision, peer deviance, and low family income (Gatti et al., 2009). Similar to how certain variables predict justice involvement, previous research has highlighted demographic factors (Wolff et al., 2009; Peterson-Badali & Koegl, 2002; Kiessl & Wurger, 2002; Hodge & Yoder, 2017; Khoury-Kassabri & Attar-Schwartz, 2014; Attar-Schwartz & Khoury-Kassabri, 2015; Wolff et al., 2009) as well as past trauma and psychological symptoms (Yoder et al., 2019; Fazel et al., 2016; Blitz et al., 2008; Wolff et al., 2009; Sedlak et al., 2013; Khoury-Kassabri & Attar-Schwartz, 2014; Dierkhising, 2014; Meade et al., 2020; Kiessl & Wurger, 2002) as predictors of increased institutional violence exposure and harsher treatment in justice settings.

Violence exposure is a particularly important variable to study in justice-involved youth with institutional stays, as it can be both an importation and deprivation variable. Violence exposure includes witnessing of, or direct victimization involving, physical assault, sexual assault, and forms of childhood maltreatment such as abuse and neglect (Finkelhor et al., 2015). Violence exposure has been connected to several adverse outcomes for children and adolescents,

including a variety of psychological disorders, traumatic stress disorders and/or symptoms of posttraumatic stress, and delinquent behaviors (Moffitt, 2013; Flannery et al., 2007; Mrug & Windle, 2010; Wilson et al., 2009). The connections between juvenile delinquency and violence exposure have prompted extensive research in this area with justice-involved youth.

In juvenile justice populations, violence exposure has been associated with psychological symptoms, including increased PTSD, depression, substance use disorders, and other co-occurring mental illnesses (Rosenberg et al., 2014; Dixon, Howie & Starling, 2005). Violence exposure has also been positively associated with future violent offending in justice-involved adolescents (Baskin & Sommers, 2014). Youth in the justice system tend to have early and recurring exposure to violence and re-victimization over time, often referred to as “complex” trauma (Ford, 2010; Ford et al., 2012). Complex trauma can include experiences of domestic violence, traumatic loss, sexual abuse, neglect, community violence, school bullying, war violence, and many others (Ford et al., 2012). Justice settings can expose youth to further violence, including witnessing physical altercations or direct victimization through physical altercations with other residents or correctional staff. (Lambie & Randell, 2013; Peterson-Badali & Koegl, 2002; Dierkhising et al., 2014). For adolescents with prior histories of trauma, experiences within justice settings can contribute to their complex trauma presentations, potentially heightening reoffending post-release and/or psychological symptoms.

Beyond violence exposure, youth in justice settings are subjected to rules and punishments unique to the justice system such as solitary confinement, strip searches, room searches, and limited time outside their cell or room. Research on adults’ experiences in prison describe “prisonization” or “institutionalization”, which refers to psychological changes seen in individuals when they adapt to a prison environment (Haney, 2012). Prisoners may adapt

psychologically in response to loss of freedom and autonomy, lack of privacy, social isolation, constant supervision, and the looming threat of additional punishments or violence (Haney, 2012). Studies with adults have suggested that, as a result of the harsh prison environment, individuals experience significant psychological problems during an institutional stay and after release (Nurse et al., 2003; Haney, 2012). In addition to the effects on psychological functioning, justice settings may also contribute to further dysfunctional behaviors. Justice settings are meant to be harsh and punitive as a means of deterring offenders from future crime, but research has indicated such a deterrent effect may not exist, and in fact, harsh settings may increase re-offending (Chen & Shapiro, 2007). When it comes to juvenile justice, some prior research findings suggest more restrictive settings such as a residential placement are associated with greater likelihood of adult criminality (Gatti et al., 2009). However, little is known about the specific stressors faced during in institutional justice settings, and how these settings affect juveniles psychologically and behaviorally post-release.

Furthermore, complex trauma is described as not only recurring traumatic events, but often varying types of traumatic events one experiences (Ford et al., 2012). The accumulation of traumatic stressors tends to be associated with more negative outcomes, with some affected individuals being “polyvictims” who experience a wide variety of stressors and have especially severe psychological dysfunction associated (Finkelhor et al., 2009). Due to the complexities of how traumatic events and other life stressors are experienced over time, the use of person-centered analyses has been used in prior studies to better understand patterns of violence exposure in youth (Lambert et al., 2010; Sargent et al., 2020). Similar to violence exposure in community settings, there appears to be variability in the experiences of youth in justice settings (Dierkhising et al., 2014). Using person-centered analyses to find patterns of institutional

experiences can help understand which experiences tend to cluster together in subgroups of justice-involved youth, and which youth are experiencing the accumulation of multiple stressors.

There are several reasons why studying profiles of youth detention experiences is necessary. First, because there is variability in experience during detainment (Dierkhising et al., 2014), it is possible that there are patterns in institutional experiences that are associated with demographics (e.g. race, gender, age) or psychological factors (e.g. symptoms of mental illness). Some youth in justice settings may be more likely to witness violence, be victimized, or face harsh punishments more frequently. If such patterns can be empirically identified and it is determined that the experience of multiple institutional stressors are prevalent, steps can be taken to minimize re-traumatization for youth during institutional stays. Since institutional stressors can further elevate the risk of reoffending and threaten psychological wellbeing for youth, as they seem to for adult populations (Haney, 2012; Chen & Shapiro, 2007), identification of the prevalence of multi-stress experiences can help policymakers understand the scope of the problem and galvanize stakeholders to make system changes. For example, if it is found that racial minority youth or other groups are more prone to multi-stress experiences, pressure can be placed on stakeholders to confront systemic racism and other forms of discrimination in the juvenile corrections world.

Finally, it is of utmost importance to examine both behavioral and psychological outcomes for youth after their release from justice settings. Research on community samples of adolescents has indicated environmental stressors and exposure to violence are associated with delinquent behaviors and justice involvement (Abram et al., 2013; Turner et al., 2016; McNeely & Wilcox, 2015). Previous research has indicated incarceration in comparison to community intervention is a risk for recidivism for adult men (Jolliffe & Hedderman, 2012). Experiencing

violent crime (Boxer et al., 2009) as well as spending time in harsher adult correctional settings (Chen and Shapiro 2007) may also be associated with an increased risk for reoffending. Data is limited on how institutional experiences affect youth behavior after release, but there is data which suggests traumatic and stressful experiences are associated with quicker re-offense for this population (Wolff et al., 2017). For youth already involved in the justice system, further delinquent behaviors can lead to continued justice involvement and incarceration. Therefore, the question of whether violent and/or stressful experiences during stays in justice facilities contribute to increased chances of recidivism has important implications for juvenile justice policy, which aims to prevent recidivism.

Even beyond concerns about recidivism, modern researchers have argued that rehabilitation also means helping justice-involved people lead positive lives, including healthy psychological functioning (Fortune, 2018). Unfortunately, the experience of incarceration can be associated with poorer mental health functioning in both adults (Boxer et al., 2009; Piper & Berle, 2019; Kaba et al., 2014) and juveniles (Dierkhising et al., 2014; White et al., 2010; Barnert et al., 2017). Therefore, examining post-release mental health symptoms of youth could also have important clinical and justice policy implications. If certain stressors or experiences within justice settings are found to contribute to symptoms of mental illness, clinicians working with justice-involved populations can be made aware of experiences in justice settings as specific risk factors for psychopathology. Understanding and acknowledging the unique stress and experience of justice settings for juveniles can inform psychological assessment and treatment with previously incarcerated young people. Lastly, findings may illuminate which practices in juvenile justice settings can be most detrimental to the mental health of youth. Results can

inform policy changes for systems working with youth and encourage justice settings to continue lessening or eliminating damaging practices.

The purpose of the current study is to 1) identify profiles of institutional experience via measures of violence exposure, sanctions, and restrictions during stays in justice settings, 2) identify demographic/historical, institutional, and psychological correlates of institutional experience profiles, and 3) examine the association between institutional experience and outcomes of reoffending and psychological symptoms post-release.

CHAPTER TWO

LITERATURE REVIEW

Violence Exposure in Children and Adolescents

The prevalence and impact of violence exposure in childhood and adolescence are well-documented. Violence exposure includes witnessing of, or direct victimization involving, physical assault, sexual assault, and forms of childhood maltreatment such as abuse and neglect (Finkelhor et al., 2015). According to the National Survey on Children's Exposure to Violence (NatSCEV) 58% of youth 17 or younger reported at least one instance of exposure to violence in the year prior (Finkelhor et al., 2015). Prior research suggests exposure to violence has deleterious effects on youth psychological functioning. Violence exposure in childhood and adolescence is a risk factor for a variety of psychological disorders including mood disorders, anxiety disorders, substance use problems, psychotic disorders, and behavioral disorders as well as co-occurrence of multiple psychological disorders (Moffitt, 2013). Symptoms of trauma such as post-traumatic stress and dissociation are also seen in youth as a result of exposure to violence (Flannery et al., 2007). In addition, witnessing violence in early adolescence has been associated with increases in anxiety, depression, aggression, and delinquency (Mrug & Windle, 2010). Not only is exposure to violence an experience of many U.S. children, but there are subsets of youth who appear to have repeated instances of victimization. There is variability among youth in the frequency of victimization and types of traumas experienced. For example, about 11% of youth in the NatSCEV sample were considered polyvictims who had experienced six or more types of victimization in the year prior (Finkelhor et al., 2015). A meta-analysis of

the associations between youth violence exposure and delinquency revealed victimization had larger effects on later delinquent behavior rather than witnessed violence (Wilson et al., 2009). However, there appears to be significant overlap in various types of violence exposure such that witnessed violence is associated with increased odds of other types of violence exposure including sexual victimization and maltreatment by family members (Finkelhor et al., 2015). Youth who are exposed to multiple instances and types of violence exhibit significant psychological difficulties (Finkelhor et al., 2015).

It is clear that both witnessing violence and direct victimization can contribute to psychological difficulties and behavioral problems. More comprehensive models attempt to understand what life circumstances tend to be associated with violence exposure and how violence exposure becomes a chronic stressor for some. There are also many factors that can alter the associations between stressors such as violence exposure and mental health. The ecological stress process model of violence exposure is one such model that recognizes multiple sources of stress, potential mediators and moderators of stress, and the outcomes of stress, as all being connected (Mohammad et al., 2015; Foster & Brooks-Gunn, 2009). Contributing factors to chronic stress and increased violence exposure in the lives of children and adolescents can include neighborhood disadvantage, structural inequities, racism, family adversities, low socioeconomic status as well as individual factors such as how youth cope with stress (Foster & Brooks-Gunn, 2009). The ecological stress process model is based on a study by Foster & Brooks-Gunn (2009) which utilized a stress process paradigm to conceptualize exposure to violence in childhood. This study focused specifically on forms of interpersonal violence as stressors that challenge a child's sense of safety and are associated with emotions such as helplessness, anger, and fear (Foster & Brooks-Gunn, 2009). The stress process framework of

exposure to violence was meant to have four main implications: 1) youth are exposed to multiple stressors based on context, 2) violence exposure is connected to other life stressors and combinations of various types of violence exposure can have unique effects, 3) childhood stressors including violence exposure can affect a range of outcomes, including both psychological and behavioral, and 4) both personal and social resources can serve to help youth cope with stressors (Foster & Brooks-Gunn, 2009). The stress process framework by Foster & Brooks-Gunn (2009) recognizes the importance of context for youth exposed to violence. This includes recognizing neighborhood disadvantage as a predictor of increased violence exposure, as well as certain demographic factors (older age, Hispanic, African American, and Native American ethnicity, and male gender) and externalizing behaviors increasing the risk of violence exposure for youth (Foster & Brooks-Gunn, 2009). The current study utilizes the stress process model approach in conceptualizing stressors for juvenile justice youth prior to and during stays in justice settings.

Violence Exposure and Risk Factors for Justice-Involved Youth

Youth involved in the justice system often have extensive trauma histories (Abram et al., 2013) and, as a result, are more likely to experience psychological symptoms compared to their peers (Shufelt & Coccozza, 2006). An epidemiologic study of juvenile detainees in Chicago revealed that 92% of the sample had experienced at least one traumatic event, and 84% had experienced multiple traumatic events (Abram et al., 2013). Other studies show similar findings, with 86% to 94% of justice-involved youth reporting exposure to at least one trauma and 71% reporting at least two traumatic events (Rosenberg et al., 2014; Stimmel, et al., 2014). Youth are exposed to various forms of traumatic stressors, but the elevated rates of trauma exposure and

trauma symptoms among justice-involved youth are largely due to violence exposure (Martin et al., 1998).

Factors such as neighborhood disadvantage, low family support, and exposure to violence are also associated with various types of juvenile delinquency, including property, drug, and violent crime (Turner et al., 2016). It is not surprising then, that youth involved in the justice system are more likely to come from disadvantaged, high-crime neighborhoods (McNeely & Wilcox, 2015) and have elevated rates of exposure to violence and traumatic events compared to those who are not involved in the system.

Institutional Violence Exposure

While the studies above provide a strong foundation for prevalence of trauma in the lives of justice-involved youth, much of the existing research focuses on violence exposure prior to involvement with the justice system. Institutional experiences of violence can be similar to traumatic events outside institutions; this may include witnessing or being involved in physical fights, sexual abuse, and forms of emotional abuse such as humiliation of residents. For both adults and youth, this may include witnessing or hearing about violence between other residents and/or staff members, being victimized by other detainees and/or staff members (Lambie & Randell, 2013; Peterson-Badali & Koegl, 2002), and facing harsh punishments from staff (Dierkhising et al., 2014). Prior literature indicates that psychological and behavioral difficulties of justice-involved youth, who already have vulnerabilities and higher rates of violence exposure, may be compounded by institutional violence. Due to limited data on institutional experiences within the juvenile justice system, information regarding adult populations will also be briefly reviewed.

In examining adults in the correctional system, violence while incarcerated is prevalent. A study of 124 men who had served time in state prison or county jails found that 47% (n = 58) of the sample had witnessed violence during their stay and 15% (n = 19) had witnessed violence as well as been victimized during their stay (Boxer et al., 2009). A study of 7,221 men and 564 women examined 6-month prevalence rates (per 1,000 residents) for resident on resident and staff on resident violence (Wolff et al., 2007). This study asked residents about various forms of physical violence (e.g. being slapped, hit, kicked, or bit; choked or attempted to drown; hit with an object; beat up; threatened or harmed with a shank or knife) (Wolff et al., 2007). Findings indicated about 205 per 1,000 male residents and 206 per 1,000 female residents experienced resident on resident violence (Wolff et al., 2007). Rates of staff on resident violence were lower for females (83 per 1,000) and higher for males (246 per 1,000) (Wolff et al., 2007). Another study of 3,986 incarcerated adult men found that both childhood and adult traumatic experiences contributed to symptoms of depression, anxiety, substance use, aggression, and hopelessness (Wolff & Shi, 2012). Rates of traumatic experiences in childhood were higher than traumatic experiences in adulthood, and the childhood experiences were a particularly robust predictor of psychological and behavioral outcomes in adulthood (Wolff & Shi, 2012). Therefore, while it is important to consider traumatic experiences such as violence exposure across the lifespan for justice-involved individuals of all ages, periods earlier in development such as childhood and adolescence are likely to shape psychological and behavioral functioning into adulthood.

As mentioned, adolescents in the justice system have elevated rates of exposure to violence even prior to being in custody (Abram et al., 2013). Experiences within justice settings can expose them to further violence after initial detainment, incarceration, or institutionalization (e.g., Dierkhising et al., 2014). Two national samples of justice-involved youth have collected

data on experiences of abuse and violence exposure in institutional settings. One such study is the Survey on Youth Residential Placements (SYRP; Sedlak, 2003), which collected anonymous, computer-assisted data from 7,073 youth in over 200 juvenile justice facilities in the U.S (Snyder & Sickmund, 2006; Sedlak, 2003). Youth were included in the SYRP if they were between the ages of 10 to 20 and placed in residential facilities due to being accused or adjudicated of delinquent offenses (Snyder & Sickmund, 2006; Sedlak, 2003). Although this study focused more heavily on types of punishment and control used by staff at justice institutions, the SYRP also asked respondents whether they were afraid of being physically attacked in their institution by other residents, staff, or others coming in from outside (Sedlak, 2016). Results showed 25% of the sample was fearful of being attacked by another resident, 22% were fearful of being attacked by staff, and 15% were fearful of being attacked by someone visiting the institution (Sedlak, 2016).

The other national sample is part of the National Survey of Youth in Custody (NSYC), which is collected as part of the U.S. Prison Rape Elimination Act (PREA) of 2003. The most recent NSYC-3 survey, collected in 2018, sampled from facilities holding at least 10 adjudicated youth (25% or more of the facility population being adjudicated) for at least 90 days (Smith & Stroop, 2019). The NSYC-3 completed 6,049 interviews with youth ages 14 and younger to 18 and older and utilized anonymous, computer-assisted interviewing techniques (Smith & Stroop, 2019). Findings from the NSYC-3 showed that 7.1% of youth in juvenile facilities endorsed sexual victimization in the 12 months prior to data collection (Smith & Stroop, 2019). Further, 1.9% of youth reported sexual victimization involving another youth, and 5.8% reported sexual victimization by facility staff (Smith & Stroop, 2019). Both the SYRP and NSYC-3 national

samples will be cited frequently throughout the current study as they are two of very few large, nationally representative studies that examine abuse and violence for juveniles in custody.

In addition, there are some smaller studies that reflect experiences of justice-involved youth while in correctional or residential facilities. A smaller study of 62 young adults previously incarcerated as juveniles revealed that 82% of participants reported witnessing physical abuse between detained individuals, 70% reported witnessing physical abuse between detained individuals and staff, and 66% witnessed excessive use of solitary confinement (Dierkhising et al., 2014). On average, youth reported experiencing about 4 incidents of personal victimization during institutional stays, including emotional, physical, and sexual abuse (Dierkhising et al., 2014). There was variability in the data such that some ex-residents reported no instances of abuse while incarcerated, but others reported over 50 incidents of witnessed abuse or victimization (Dierkhising et al., 2014). Other, similar institutional settings that care for youth can shed light on institutional violence rates as well. In a study of 1,324 Israeli Arab and Jewish adolescents (ages 11-19) in residential care centers, 56% of the sample reported being exposed to physical violence by peers in the past month (Pinchover & Attar-Schwartz, 2014). Further, the staff in some settings may allow such violence to occur. A study of 100 male juveniles, the majority being ages 16-18, in secure facilities across Ontario, Canada shed light on the involvement of juvenile staff in peer-on-peer violence (Person-Badali & Koegl, 2002). This study found 46 out of 99 juvenile respondents reported correctional staff “turned a blind eye” to peer-on-peer violence when it occurred, and qualitative data indicated that, in some cases, staff may even encourage violence between juvenile detainees (Peterson-Badali & Koegl, 2002). This information highlights how it is not only the interactions youth have with one another, but the culture of institutional staff, which can impact youth experiences. A particularly relevant piece of

an institution which affects experiences of youth are the restrictions and sanctions utilized by staff.

Institutional Restrictions and Sanctions

Historically, one of the main aims of incarceration has been to deter further offending. This is in line with the specific deterrence hypothesis, which predicts that those who experience harsher or more restrictive prison environments will be less likely to re-offend (Drago et al., 2009). Past policy has proposed that justice settings should be harsh environments to strengthen the deterrence effect (Johnson-Listwan et al., 2013). Restrictions and sanctions are two elements that can contribute to the perceived harshness of a setting. Restrictions describe steps taken to limit freedoms of or impose control over those in correctional institutions. Restrictions may limit programming and privileges in correctional settings and can also be imposed as a sanction (American Bar Association, 2011). Examples of rules and restrictions in correctional settings may include regular room searches, limits on visitation and communication, staff access to mail and other personal items, limited time outside one's cell, and limited free time throughout the day (McDonough et al., 1999). Sanctions refer to disciplinary actions taken by correctional staff to maintain order and safety within the institution (American Bar Association, 2011). Examples of sanctions can include physical restraints, transfers to disciplinary housing units, time in segregated or isolation cells, loss of privileges like free time or personal items, and additional charges or time added to a sentence (Parent et al., 1994; O'Hear, 2012).

Past studies based on the ecological stress process model have focused on environmental stressors that occur in the community. Periods of institutional confinement present new stressors unique to the justice system in the form of restrictions and sanctions. Although limited, some research is available regarding the types of sanctions and restrictions seen in correctional settings

and how they may contribute to psychological and behavioral functioning. Haney (2012) argues that the “pains of imprisonment” for adult offenders often echo instances of traumatic and stressful experiences in childhood. In addition to experiencing abuse and neglect in prison systems, institutional practices or punishments such as frequent, unannounced cell moves or transfers to other institutions may also contribute to psychological distress of inmates (Haney, 2012). Regular sanctioning practices also add to the ecological stress of a correctional environment. One example of this is the practice of extending stay time in response to undesirable behavior. As a way of deterring inmates from violating rules or causing disruption, adult prisons employ the use of “good time” rules by which credits toward time served can be taken for institutional violations, thereby extending an individual’s stay (O’Hear, 2012).

Youth in correctional and residential justice settings are subject to similar restrictions and punishments for misbehavior. A report outlining methods of the SYRP data collection indicated that group punishment, which involved punishing groups of youth for the actions of a subgroup, and removal of privileges are the most common punishments (Sedlak, 2016). Other disciplinary measures can include locking a youth in their cell, locking a youth in a separate cell (also referred to as solitary confinement or segregation), forcing physical exercise, re-housing youth, or assigning extra work (Sedlak, 2016). Per the SYRS, other methods of control staff may use with youth can include strip searches, using handcuffs or other wrist restraints, holding youth down, utilizing security belts or chains, spraying youth with pepper spray, and placing youth in restraint chairs (Sedlak, 2016). The Juvenile Offenders and Victims 2014 National Report (Snyder & Sickmund, 2006) utilized data from the Survey of Youth in Residential Placement (SYRP) (Sedlak, 2003). The SYRP collected data from 7,073 youth, ages 10-20, in over 200 juvenile justice facilities in the U.S (Snyder & Sickmund, 2006; Sedlak, 2003). The SYRP

collected information regarding the respondents' perceptions of whether punishments were fairly given when youth did something wrong and whether staff used physical force when it was not needed (Sedlak, 2016). Half of youth described being treated unfairly by staff in their institutions, while 30% reported that punishments by staff were fair (Snyder & Sickmund, 2006). Another 34% of the sample reported that staff had used unnecessary force when interacting with youth (Snyder & Sickmund, 2006). More severe methods of control were reported less frequently, with 4% of youth reporting placement in restraint chairs and 7% being sprayed with pepper spray (Snyder & Sickmund, 2006). Further, while a seemingly small number face such harsh punishments, other residents are aware of, and thus exposed to, these harsh practices. The SYRP found that 29% of youth reported being in a facility where other residents they lived with were put in a restraint chair, and 30% reported living with others who were pepper sprayed (Snyder & Sickmund, 2006). While research in this area is limited, the available literature suggests correctional sanctions and control measures may have an impact on youth psychology. Previous research has revealed an association between perceived safety in a correctional environment and the reported number of sanctions received such that youth who received more sanctions felt less safe, though the directionality of this association was unclear (Lujan & Fanniff, 2019). Experiences that lead youth to feel threatened or unsafe during stays institutional settings may have effects on mental health functioning after they are released.

It is important to recognize that institutional experiences and practices do not always fit neatly into one category. Violent or traumatic experiences, sanctions, and restrictions may at times overlap. For example, spending a certain number of hours in one's cell per day may be a regular restriction, but additional hours may be added as a punishment. Further, while measures such as physical restraint, strip searching, and isolation are often labeled as restrictions or

sanctions due to the justice-related environment, juvenile justice advocates have argued these practices can be forms of trauma or maltreatment to youth as well [The Annie E. Casey Foundation (AECF), 2015] (Clark, 2017). Even non-violent aspects of residential settings have been found to relate to institutional violence. Another analysis of the Survey on Youth Residential Placement (SYRP) found that many institutional factors were positively correlated with greater risk of victimization for youth (Sedlak et al., 2013). The study measured several victimization experiences including theft, robbery, physical assault, and sexual assault while in the residential placement (Sedlak et al., 2013). Higher risk of all four victimization experiences correlated with a higher percentage of youth in the same unit reporting that staff apply rules unfairly, negative opinions of staff, and higher percentage of youth reporting they received solitary confinement (Sedlak et al., 2013). The SYRP also measured methods of physical control, including being held down, placed in handcuffs/security belt/chains, strip searched, sprayed with pepper spray, or put in a restraint chair (Sedlak et al., 2013). Youth who experienced more of these physical controls by staff also had a higher risk of victimization within the facility (Sedlak et al., 2013). Thus, some youth may be experiencing a cumulative effect of multiple stressors and exposures to violence within institutional settings.

Patterns of Institutional Experience

While research has given some attention to how specific variables in institutional settings can impact youth (e.g. Lujan & Faniff, 2019; Dierkhising et al., 2014), a more nuanced approach is needed to examine the climate experienced by various youth in justice institutions. Finding patterns of variables relative to one another in different sub-groups of people has been referred to as a “person-centered” analytic approach, which is often used to examine patterns of attributes or experiences (Leon & Dickson, 2018; Lambert et al., 2010; Sargent et al., 2020). In examining

patterns of the current study variables (institutional violence exposure, sanctions, and restrictions) the current study can provide a more complex understanding of youth experiences while institutionalized. For example, one group of youth may spend more time in isolation and experience more staff-perpetrated abuse, while another group may experience lower levels of the aforementioned variables but higher frequency of victimization by peers. A person-centered approach as described can be used to find classes of people who share experiences and reveal which institutional experiences tend to cluster together. Taking an additional step, resultant groups can then be used to determine what other factors or outcomes these groups of people have in common. Person-centered data can be especially useful for clinicians attempting to individualize services to youth as much as possible in order to maximize effectiveness.

Demographic Correlates of Institutional Experience

Violence exposure, restrictions, and sanctions may be present to some extent in all residential justice settings, but experiences can certainly differ. One of the ways in which researchers have examined differences in institutional experience is based on demographic factors like age, gender, and race. As research on juvenile populations is limited, available information on both adults and adolescents will be reviewed.

Research on adult populations indicate that certain demographic factors such as gender, age, race, and education status influence victimization while in prison. A study of 7,000 male inmates revealed that men who were younger, white, and had sexual offense convictions were more likely to report being victimized by other inmates (Wolff et al., 2009). Men who were non-white, more highly educated, and had a violent crime conviction were more likely to be victimized by correctional staff (Wolff et al., 2009). In another, large study of both male and female adults who were previously incarcerated, males (246 per 1,000) appeared to experience

much higher rates of staff on resident victimization than females (83 per 1,000), though resident on resident physical assault was comparable across gender (Wolff et al., 2007). Similarly, research has found that youth with certain demographic factors have reported differences in institutional experience (Peterson-Badali & Koegl, 2002; Kiessl & Wurger, 2002; Hodge & Yoder, 2017).

Age.

First, research findings have shown those who are younger at the time of their institutional stay may be at higher risk for negative experiences. Data from the Survey on Youth Residential Placement (SYRP) found that youth and young adults (ages 10-20) who are younger at the time of their institutional placement were more likely to experience multiple types of victimization (theft, robbery, physical and sexual assault) (Sedlak et al., 2013). Even when matched on other risk factors for institutional victimization, age played a strong role. More than one quarter of the youth under 13 reported being victimized, while only 9% of the 20-year-olds in the sample reported victimization during their stay (Sedlak et al., 2013). Another study of 806 males in 18 facilities across South Africa found younger boys were at greater risk for victimization (Kiessl & Wurger, 2002). In this study, 63% of youth ages 10-13 reported being victimized by other youth in the institution, and the percentage decreased in groups of older juveniles (e.g., 33% of youth 16-17 and 18% of young adults 21+ being victimized) (Kiessl & Wurger, 2002). This trend may be in part due to less behavioral control of younger adolescents. Another study utilizing data from the SYRP found that those who were younger at the time of institutionalization had more externalizing behaviors during their stay and staff were more likely to use physical control measures on them (Hodge & Yoder, 2017). Interestingly, there also appear to be unique patterns regarding victimization experiences by age. The sample of South

African juveniles found that though the youngest children (ages 10-13) were most likely to be victimized by other youth, they were the least likely to experience sexual victimization (Kiehl & Wurger, 2002).

Gender.

Gender also appears to influence institutional experiences for youth, though results are mixed. Generally, studies suggest males are more likely to experience physical violence from staff and peers. SYRP data has shown that while females were more likely to exhibit externalizing behaviors, males were more likely to experience staff physical control measures and isolation (Hodge & Yoder, 2017). Another study utilizing data from 1,324 Jewish and Arab adolescents in Israeli residential care settings found that boys were more likely to be physically victimized by peers in residential institutions (Khoury-Kassabri & Attar-Schwartz, 2014). Further analysis on this sample found no significant differences in verbal victimization (e.g., being yelled at, sworn at) between boys and girls, but girls were more likely to be the victims of indirect victimization via rumors and social exclusion (Attar-Schwartz & Khoury-Kassabri, 2015). While the highest rates of sexual assault in community samples tend to be among teenage girls (Finkelhor et al., 2013), this does not always extend to juvenile justice settings. Another study using the National Survey of Youth in Custody (NSYC-2) found no differences between males versus females in reported sexual victimization (Ahlin, 2021). However, some research suggests non-heterosexual and transgender individuals in prisons have higher rates of victimization in custody than cis-hetero individuals (e.g., Man & Cronan, 2001).

Race/Ethnicity.

Studies on adult populations have shown some differences in institutional victimization by race/ethnicity. In a sample of 7,221 adult males in prisons or jails, Hispanic and black men

had significantly higher rates of reported physical victimization while incarcerated than white men, with Hispanic men showing the highest rates (Blitz et al., 2008). In the examining both male and female inmates with mental illness, results showed that black and Hispanic inmates, regardless of gender, had higher rates of sexual victimization by other inmates than non-Hispanic white inmates (Wolff et al., 2009).

Studies on youth have exhibited mixed findings regarding institutional experiences by race/ethnicity. One study on SYRP data found that white youth were more likely to show trauma symptoms in relation to the cumulative effects of pre-institutional victimization and victimization while in custody (Yoder et al., 2019). However, the SYRP found no significant associations between race/ethnicity of the youth and the control measures enforced by staff (Hodge & Yoder, 2017). The sample of 100 male justice-involved youth in Ontario facilities found that non-white youth, who were mostly black and aboriginal, were significantly more likely to report being picked on by correctional staff than white youth (Peterson-Badali & Koegl, 2002). The study of 806 juveniles in South African facilities also found that the minority racial groups in institutions, which are Asian and white groups in South Africa, were at greater risk for victimization than black and multiracial groups, which make up the racial majority in South Africa (Kiessl & Wurger, 2002). Overall, the limited information available suggests there may be differences in violence experiences by race that are dependent upon who perpetrates the violence (staff or other youth) and which racial/ethnic groups make up the majority in that setting.

Trauma History and Psychological Correlates of Institutional Experience

Trauma history and psychological factors also play a role in institutional experience. Prior research has shown that individuals with histories of trauma and mental health disorders are at elevated risk for victimization while in custody (Dierkhising et al., 2014; Fazel et al., 2016). A

study of a large adult sample (n = 14,499) from the Survey of Inmates in State and Federal Correctional Facilities measured endorsement of five types of physical injuries experienced prior to and during incarceration (Meade et al, 2020). These included being pushed, grabbed, slapped, kicked, bit, shoved, hit with a fist, beaten up, choked, or assaulted with a weapon (Meade et al., 2020). Results revealed that each type of victimization a participant reported experiencing prior to incarceration was associated with a 10% increase in physical victimization while incarcerated, and a history of sexual abuse was associated with an even greater increase in victimization while incarcerated (Meade et al., 2020). Histories of victimization were also associated with harsher punishment from staff in adult settings. The same study measured the severity of sanctions various participants received, with severity ranging from a formal reprimand to solitary confinement (Meade et al., 2020). Results revealed those who had experienced physical or sexual violence prior to incarceration were more likely to receive harsh sanctions, although they were also more likely to engage in misconduct while incarcerated (Meade et al., 2020).

Similar results have been found in adolescents. While in the institutional setting, the South African study of over 800 male youth found that those who experienced victimization by other youth while in custody were also at greater risk to experience corporal punishment or victimization by correctional staff (Kiessl & Wurger, 2002). Youth who experienced sexual assault or both physical and sexual assault by other youth in custody were even more likely to report corporal punishment and victimization by correctional staff than those who only experienced physical violence during their stay (Kiessl & Wurger, 2002). Another study analyzing SYRP data found that correctional staff used significantly more control measures on youth with histories of physical and sexual abuse (Hodge & Yoder, 2017). Results from the SYRP have further shown that youth with histories of polyvictimization in childhood report

increased victimization while they are in juvenile custody (Yoder et al., 2019). Trauma symptoms associated with early polyvictimization explained part of this association between past trauma and institutional trauma (Yoder et al., 2019), suggesting response to past trauma plays a role in risk of institutional victimization. These associations are particularly concerning from a trauma-informed mental health standpoint as it is clear youth with trauma are especially vulnerable in settings which already put them at risk for witnessing violence and being victimized by others.

As the Yoder and colleagues (2019) study suggests, mental health symptoms may play a role in increased rates of institutional violence exposure. A systematic review of adult prison populations from 2003 to 2015 concluded that individuals with mental health disorders are more likely to be victimized while in jails or prisons when compared to others without a mental health history (Fazel et al., 2016). This association applies for both physical and sexual victimization, and regardless of who perpetrates the violence (staff or other inmates). A study of over 7,000 adult males and females in 14 different prison/jail systems assessed which participants had ever received treatment for various mental disorders including schizophrenia, bipolar, depression, PTSD, or an anxiety disorder (Blitz et al., 2008). Men with mental disorders were 1.6 times more likely to be physically victimized by another inmate than men without a history of mental disorder (Blitz, Wolff, & Shi, 2008). Men with histories of bipolar and schizophrenia were the most likely to be physically victimized by other inmates (Blitz et al., 2008). Physical victimization perpetrated by staff was also 1.2 times higher for men with histories of mental illness compared to those without mental illness. Females in the sample showed similar elevated rates of victimization. When compared to female inmates without mental health histories, female inmates with mental disorders were 1.6 times more likely to endorse physical victimization by

other inmates and 2.5 times more likely to endorse being physically attacked by another inmate with a weapon (Blitz et al., 2008). Another large sample of adult inmates (n = 6,964 males and 564 females) found increased rates of sexual victimization for individuals with a history of mental illness compared to those with no history of mental illness (Wolff et al., 2009). One in 12 male inmates with a mental illness reported sexual victimization by other inmates in the 6 months prior, while only one in 33 without a mental illness reported sexual victimization (Wolff et al., 2009).

Again, though research is limited in juvenile justice settings, similar patterns are observed in which mental disorder is a risk factor for violence in institutional settings. The Survey on Youth Residential Placement (SYRP) found that youth who have been diagnosed with a learning disability were at greater risk of being victimized when it came to theft, robbery, and physical assault during an institutional stay (Sedlak et al., 2013). The study of Israeli youth in residential care centers found higher levels of reported adjustment difficulties, including hyperactivity, emotional symptoms, conduct problems, and peer problems, were associated with increased physical victimization by peers during a residential stay (Khoury-Kassabri & Attar-Schwartz, 2014).

Differences in State and Type of Institution

In studying institutional experiences of justice-involved youth, it is important to recognize that experience can differ based on the setting and type of institution in which an individual spends time. First, due to differences in state laws and regulations for justice institutions, institutional experiences may vary across state. Unfortunately, violence and harsh treatments do not appear to have been historically limited to certain state corrections systems. A report compiled by the Annie E. Casey Foundation (2015) utilized news reports and lawsuits

from across the United States to examine evidence of maltreatment within juvenile justice settings. This report specifically focused on recurring maltreatment within state systems, which the writers defined as evidence of one or more state-funded facilities failing to protect detained youth from violence between residents or between staff and residents, sexual assault, excessive isolation, or excessive restraints (AECF, 2015). Such maltreatment had been documented either legally or by the press in 22 states in the U.S. since the year 2000 (AECF, 2015). However, there have been less cases of recurring maltreatment for certain states as the years have passed. For example, Pennsylvania, Kentucky, and Washington did not exhibit evidence of violent or abusive conditions since 2000, but other states such as Arizona, Oklahoma, and Michigan did (AECF, 2015). Thus, the state in which justice-involved youth are institutionalized may also determine the pattern of their individual experiences.

Second, youth may have different experiences based on the type of program they are involved in. When thinking of juvenile justice placements, the first that comes to mind for many may be correctional centers, where youth can be placed for lengthy terms after they have been found guilty and sentenced by the court. Justice-involved youth can also be placed in detention centers, which hold them for shorter sentences and often before court appearances for charges. Justice-involved youth can also be placed in other settings such as residential programs, reform schools, boot camps, inpatient mental health, or substance use programs. Data from the SYRP show that the fear of being physically attacked is most prevalent for youth in correctional settings (42%) in comparison to youth in detention centers (38%) or community-based settings (29%) (Sedlak, 2016). However, that is not to say that abuse and violence does not occur in non-correctional settings such as residential placements. Similar to youth in correctional and detention centers, youth in other residential settings may also be exposed to violence,

maltreatment, and harsh environments. At least as of 2007, there does not appear to be a central agency that tracks information on justice-involved youth in residential/community-based settings specifically (Kutz & O'Connell, 2007). However, staff at residential and group home facilities are a category of perpetrators of child abuse and neglect assessed yearly through the National Child Abuse and Neglect Data System (U.S. Department of Health and Human Services, 2021). In 2019, the NDCANS found 720 cases of child abuse and neglect reported with residential or group home staff as perpetrators (U.S. Department of Health and Human Services, 2021). In 2007, the U.S. Government Accountability Office (GAO) released a report on concerns of abuse and deaths in residential treatment programs for youth (Kutz & O'Connell, 2007). Findings highlighted that there were thousands of abuse allegations against residential centers from 1990 to 2007, with some cases involving death of residents from undernourishment or staff not recognizing youth illness (Kutz & O'Connell, 2007).

In addition to the role of staff, the overall social climate and other residents have an impact on youth during residential stays. A study of youth ages 11-19 involved in the Israeli welfare system found that 56% of youth reported being exposed to peer violence at least once in the past month during residential stays (Pinchover & Attar-Schwartz, 2014). This study found that the more negatively youth perceived the social climate (measured by caretaker support, strictness, satisfaction, other youth behavior, and other youth friendliness) of the residential center, the more difficulties they had in adjusting to that environment (Pinchover & Attar-Schwartz, 2014). Regarding violence and abuse, the youth in this study also showed poorer adjustment if they reported physical victimization by peers (Pinchover & Attar-Schwartz, 2014). Thus, both violence exposure as well as climate factors like strictness negatively affected youth ability to adjust in residential placement. Since justice-involved youth are placed into various

types of settings, it is important to consider not only how correction and detention centers treat youth, but how all justice-related settings treat and affect young people.

Institutional Experience as a Predictor of Recidivism

Examining the trauma and stress youth experience during institutional justice stays is especially important due to the potential adverse effects such settings have on behavior. Certain institutional experiences, such as violence exposure during a detention stay can be forms of re-traumatization (Ford et al., 2016), which may have deleterious effects on behavioral functioning post-release, leading to recidivism.

When comparing adults who have been incarcerated versus those who were diverted to community rehabilitation, it appears that the correctional experience itself can serve as a risk for recidivism. A study of 5,500 male offenders in the United Kingdom used propensity score matching in order to compare men with similar background characteristics who had been incarcerated versus those who received community supervision. Results showed that the men who had been incarcerated were significantly more likely to commit another offense one year later (Jolliffe & Hedderman, 2012). The group of men who had been incarcerated also offended more quickly and committed more offenses on average than the group who received community intervention (Jolliffe & Hedderman, 2012). Studies such as this provide reason to believe something about being in custody affects later behavior. It is likely that certain stressful experiences such as violence exposure and sanctioning play a role. Some research makes this connection between experiences during incarceration and behavior post-release. A study of 124 adult men who had spent time in prison or jail found that experiencing violent crime while incarcerated was significantly associated with increases in antisocial behavior after release (Boxer et al., 2009). These results were observed even after controlling for demographic

variables, violence exposure outside corrections, time since release, and violent offender status (Boxer et al., 2009).

Further, institutional experiences need not involve violence to have a negative impact on behavior. The restrictions and sanctions characteristic of justice settings have negative correlates as well. While such restrictions and sanctions are meant to have a deterrent effect, research does not always support such an effect of harsh and restrictive settings in adult offenders. A study by Chen and Shapiro (2007) found that offenders who spent time in high-security facilities, with a presumably harsher environment, were not any less likely to reoffend than those who had spent time in minimum security facilities. This study further posited that harsher institutional conditions were associated with greater criminal involvement post-release (Chen & Shapiro, 2007). Such findings could occur for several reasons. One important confound in the literature is the fact that more serious or violent adults tend to be sent to harsher prison settings (Drago et al., 2009), which is a standard practice in adult sentencing (Katz et al., 2003). Thus, these individuals may be more likely to re-offend due to their history of offense rather than the conditions of the institution they spend time in. The current study will address this confound of offense history by controlling for it in analyses.

Juvenile populations also exhibit increased behavioral problems and reoffending associated with past institutional experiences. The previously discussed study of 62 young adults who had been confined as juveniles revealed that their reported abuse during incarceration predicted increased criminal involvement post-release (Dierkhising et al., 2014). Previous research with the current study sample of 1,354 serious adolescent offenders found that the number of sanctions given during institutional confinement predicted increased total offending one year after release (Schubert et al., 2012).

Instead of only examining whether a person will re-offend, more studies have started used survival analysis to examine how long youth with various characteristics can “survive” without another offense. The timing of re-offense is thought to be important because youth who re-offend more quickly may have different levels of risk than those who re-offend later (Wolff et al., 2017). As mentioned in a previously cited adult study (Jolliffe & Hedderman, 2012), time spent in custody can also be associated with a greater number of offenses post-release as well as a shorter time period before re-offense. Other research on youth has indicated that traumatic stressors also contribute to recidivism. A study using archival data from the Federal Department of Juvenile Justice examined associations between adverse childhood experiences (ACEs) and recidivism in justice-involved youth (Wolff et al., 2017). This study found that an increased number of ACEs was associated with an increased risk for re-offending one year after completion of a community-based intervention (Wolff et al., 2017).

Post-Release Psychological Associations of Institutional Experience

Beyond the issue of whether previously incarcerated individuals are more likely to offend, the psychological functioning of previously incarcerated people should be considered an important public health issue. Prior research suggests institutional experiences can significantly impact mental health functioning in both adults and youth who are justice-involved.

The adult literature has found some associations between incarceration experiences and mental health after release. A study of 124 adult men who had spent time in prison or jail found that experiencing violent crime while incarcerated was significantly associated with increases in depression and anxiety after release (Boxer et al., 2009). A meta-analysis conducted on incarceration experiences and PTSD defined potentially traumatic experiences (PTEs) in prison as “any form of actual, attempted or threatened physical, sexual, emotional or environmental

abuse or neglect, resulting in significant psychological distress” (p. 855) (Piper & Berle, 2019). Piper and Berle (2019) analyzed six studies with data on experiences of incarceration and PTSD, five of which reflected periods of adult confinement. Findings indicated that PTEs including victimization and abuse, coercion, and solitary confinement, were all related to increased symptoms of PTSD after release (Piper & Berle, 2019). Sanctioning practices such as the use of restrictive housing or solitary confinement is suspected to be associated with adverse psychological functioning. However, there is likely a more complex interaction between pre-existing mental illness and stressors faced in prison which contributes to further psychological suffering. For example, a study analyzing over 200,000 medical records from New York City jails found that the 7% of admissions involving solitary confinement were responsible for over 50% of self-harm acts (Kaba et al., 2014). Having a serious mental illness and being placed in solitary confinement at least once were two significant predictors of self-harm in incarcerated participants (Kaba et al., 2014). Connections between mental health and prison stressors like restrictive housing remain unclear due to limited research.

Similar to the adult literature, research on post-release psychological functioning is limited in juvenile populations. Some research has attempted to examine whether time spent in juvenile custody predicts mental health symptoms for youth, but findings have been mixed. White and colleagues (2010) studied a sample of 510 boys to compare symptoms of depression and anxiety between those who had been in custody and those who had not record of formal arrest or custody. A smaller sample (n = 148) was matched based on demographics and earlier trajectories of depression and anxiety symptoms. Youth who had spent time in custody showed slightly higher anxiety and slightly lower depression symptoms one year later, but these results were not significantly different from youth who had not been in custody (White et al., 2010). A

stated limitation of White and colleagues (2010) study was a lack of longer-term follow-up with participants, as other studies have suggested effects of incarceration in adolescence that extend into adulthood (Barnert et al., 2017). For example, a study using data from the National Longitudinal Study of Adolescent to Adult Health (n = 14,344) examined associations between cumulative time spent incarcerated prior to age 25 and later adult (ages 26-34) psychological and health functioning, while controlling for baseline social determinants of health functioning (Barnert et al., 2017). Results showed even short-term institutional stays less than one month predicted increased depressive symptoms in adulthood. Further, participants who stayed longer than 1 year in custody before age 25 were 4 times as likely to exhibit depressive symptoms and 2 times as likely to exhibit suicidal ideation in later adulthood (Barnert et al., 2017). Further, White and colleagues (2010) noted in their discussion that a lack of data on institutional experience was another limitation. Together, these varied findings suggest we must look deeper into what experiences youth have while in custody that may affect mental health afterward. Though studies are few, abuse and violence exposure while in custody appear to be predictors of psychological symptoms after release. A previously cited study of young adults incarcerated as juveniles revealed that reported abuse during incarceration predicted increased depression and PTSD symptoms after release (Dierkhising et al., 2014). Considering specific practices, isolation has been associated with adverse mental health (e.g. PTSD) and behavioral outcomes (e.g. future offending) (Birckhead, 2015; Simkins et al., 2012).

Gaps in the Literature

The prevalence and severity of violence that can affect justice-involved youth in institutional settings suggest an urgent need to increase our understanding of their experiences. Unfortunately, there is a critical knowledge gap on institutional experiences of justice-involved

youth. This restricts knowledge on how best to intervene to reduce recidivism and foster mental health in this population (Mulvey, 2004). First, the existing research on institutional violence exposure has largely been descriptive, documenting prevalence rates within samples (e.g., Sedlak, 2016; Smith & Stroop, 2019; Peterson-Badali & Koegl, 2002) but providing much less information regarding patterns of experience and how those patterns relate to certain subgroups of justice-involved youth.

Second, given the heightened risk of delinquent behaviors for youth with trauma exposure (Mrug & Windle, 2010; Wilson et al., 2009; Moffitt, 2013; Flannery et al., 2007; Barnert et al., 2016; Abram et al., 2004; Martin et al., 1998), there is a need to understand the long-term effects of potentially stressful and traumatic institutional experiences on reoffending. We know from community samples of adolescents that stressors in one's community, including violence exposure, increase delinquency (Mrug & Windle, 2010; Wilson et al., 2009; Mohammad et al., 2015; Foster & Brooks-Gunn, 2009). What we know less about is how institutional stressors and heightened violence exposure in institutional justice settings affect youth behavior after release. It is reasonable to suspect that environmental stressors in institutions may have similar effects to community stressors, but this remains largely unexplored.

Finally, more attention should be given to the long-term effects of institutional experiences on youth mental health. Some criminology research has put forth theory on how prison affects adult mental health via the process of prisonization or post incarceration syndrome (Haney, 2012; Gorski, 2001). Researchers and justice advocacy groups often pose the question of whether stays in custody have similar, long-term psychological effects on youth (Holman & Ziedenberg, 2006). Research findings have been mixed, suggesting that mental health depends not just on whether someone has spent time in juvenile custody, but what happened in juvenile

custody that may or may not have affected mental health. In recent literature, adult and juvenile studies compare groups of participants with and without histories of incarceration (e.g., Schnikkter et al., 2014) or focus on mental health while youth are in custody, but not after (e.g., Homan & Ziedenberg, 2006). Much more information is needed on which experiences during institutional stays are most relevant to mental health post-release.

The Current Study

The current study will utilize data from the Pathways to Desistance project, a longitudinal examination of justice-involved youth in Philadelphia and Phoenix (Mulvey, 2004). Many high-quality publications have resulted from this data. However, relatively few studies have utilized Pathways to Desistance data to understand how experiences in institutional settings relate to trauma, reoffending, and mental health functioning. Furthermore, while the Pathways to Desistance team has published a study on institutional predictors of post-detention offending, this study utilized categorical rather than continuous measures of post-detention offending; further study of continuous outcomes to better understand more nuanced effects was called for by the authors (Schubert et al., 2012). Overall, information on institutional experiences can help ensure support and protection for youth at risk for violence exposure in detention settings. This current study can shed light on whether certain experiences or accumulation of stressors are associated with better or worse outcomes after release.

Specific Aims and Hypotheses.

Aim 1. Aim 1 of the current study will utilize a latent profile analysis to identify subgroups of youth with varying institutional experiences based on their reported institutional violence exposure, restrictions, and sanctions. Previous person-centered studies on trauma and adverse experiences in youth have found multiple profiles or classes (e.g. Sargent et al., 2020;

Wolff et al., 2018), and a study on group home sanctioning experiences for youth found two profiles of restrictive interventions (Matte-Landry & Collin-Vezina, 2020).

Hypothesis 1. Analyses were expected to reveal at least two distinct subgroups from the latent profile analysis, with one showing high exposure to institutional violence and restrictions/sanctioning and the other showing low institutional exposure to violence and restrictions/sanctioning.

Aim 2. Aim 2 of the current study will examine whether youth profiles of institutional experience differ based on demographic, institutional, or psychosocial factors.

Hypothesis 2a. Participants who are younger at the time of institutional stay will be more likely to fit into profiles with the highest peer-perpetrated victimization than youth who are older at the time of stay.

Hypothesis 2b. Males will be more likely than females to fit into profiles in which there is higher exposure to institutional violence and sanctions/restrictions. As the Pathways to Desistance sample did not collect information on sexual orientation or whether youth identified as transgender, these unfortunately cannot be explored in the current study.

Hypothesis 2c. Youth of color, particularly Black and Latinx youth will be over-represented in profiles with higher levels of staff-perpetrated institutional violence and sanctioning/restrictions than White youth.

Hypothesis 2d. Being in correctional settings (prisons, jails, and detention centers) will be associated with profiles in which there is higher exposure to institutional violence and restrictions/sanctioning in comparison to non-correctional settings.

Research Question 2e. Differences in profiles between state setting (Pennsylvania and Arizona) will be examined to determine whether youth institutionalized in one state have different experiences than youth in the other state. No specific predictions are made.

Hypothesis 2f. Individuals within profiles with higher institutional violence exposure and restrictions/sanctioning will show a higher number of pre-institutional violence exposure than individuals in profiles with lower institutional violence exposure and restrictions/sanctioning.

Hypothesis 2g. Youth within profiles with higher levels of institutional violence exposure and restrictions/sanctioning, will also exhibit higher levels of pre-existing mental health symptomology including symptoms of depression, anxiety, hostility, somatization, and interpersonal sensitivity.

Aim 3. Aim 3 will explore the impact of institutional experience on post-detention outcomes of re-offending and psychological symptoms. Analyses controlled for pre-custody offending, pre-custody violence exposure, and demographics.

Hypothesis 3a.i. Profiles of institutional experience with higher levels of institutional violence and restrictions/sanctioning will predict increased self-reported total offending post-release. Profile membership will account for variance in offending beyond the effect of covariates.

Hypothesis 3a.ii. Profiles of institutional experience with higher levels of institutional violence and restrictions/sanctioning will predict increased self-reported aggressive offending post-release. Profile membership will account for variance in offending beyond the effect of covariates.

Hypothesis 3b.i. Profiles with higher institutional violence and restrictions/sanctions will predict a shorter amount of time before the next re-arrest.

Hypothesis 3b.ii. Profiles with higher institutional violence and restrictions/sanctions will predict a shorter amount of time before the next offense.

Hypothesis 3c. Profiles with higher institutional violence and restrictions/sanctions will predict a steeper increase in mental health symptom trajectories post-release, beyond relevant pre-institutional covariates.

CHAPTER THREE

METHOD

Procedure

Research Design.

The current study utilized data from the Pathways to Desistance project (Mulvey, 2004), a large longitudinal, multi-site sample of primarily serious adolescent offenders. Data were collected between November 2000 and April 2010. Participants were recruited from the juvenile and adult justice systems in Maricopa County, Arizona, and Philadelphia, Pennsylvania based on a review of their court records. Individuals recruited had been adjudicated guilty or delinquent of a serious offense, predominantly felonies. Serious offenses included felonies, less serious property crime, any crimes that were considered for trial in the adult system, misdemeanor weapon offenses and sexual assault, and drug offenses. Due to the high prevalence of felony drug offenses, the Pathways to Desistance project limited the sample to only 15% of males being enrolled based on a drug offense.

Informed consents and assents were obtained from participants and their parent(s)/guardian(s). Primarily self-report data were collected from participants at baseline, 6, 12, 18, 24, 30, 36, 48, 60, 72 and 84 months after baseline, and within 30 days of a release from a residential facility. Calendar data on the timing of institutional stays as well as other major events such as re-arrest or subsequent court appearances were collected on a monthly basis as well. Self-report data from the participants were collected using computer assisted interviews which were conducted in the participants' homes, in public places like libraries, or in facilities if youth were detained at the

time. Further information about Pathways to Desistance procedures can be found in Schubert and colleagues (2004).

The current study conducted secondary analyses of the following Pathways to Desistance data sets: baseline surveys, follow-up data, data from release interviews, and calendar data. Analyses in the current study were centered upon the first institutional stay for youth while in the study so as to minimize the confound of multiple stays.

Participants

Secondary data analyses for the current study included both male and female participants from the Pathways to Desistance project who had at least one institutional stay during the study period and a corresponding release interview. Participants with release data included 678 adolescents ages 14-19 at the beginning of the study ($M=15.99$, $SD=1.15$). The sample is majority male (92%) and racially diverse (20% Caucasian, 39% African American, 37% Latinx, and 4% other).

Measures

Demographics/Covariates.

Age, gender, and race/ethnicity were examined as potential predictors of institutional experience profiles. Additionally, the state in which data were collected and the type of setting youth are in at the time of their release interview (correctional vs. non-correctional) were examined as predictors of institutional experience profiles. The length of stay as measured by number of days spent in the rated institution was used as a covariate when examining institutional experience profiles because youth who spend more time in an institution may be exposed to more violence, restrictions, and sanctions. Lastly, although the original proposal planned to utilize the number of institutional stays prior to study involvement as an additional

covariate, this was not possible, as the original study staff masked this data after collection for confidentiality purposes.

Pre-Institutional and Institutional Violence.

The Exposure to Violence Inventory (ETV; Selner-O'Hagan et al, 1998) was used at baseline, follow-ups and at release interviews in the Pathways to Desistance Study. The ETV inquires about 6 items on victimization (e.g., “Have you been chased where you thought you might be seriously hurt?”) and 7 items on witnessed violence (e.g., “Have you seen anyone else get beaten up, mugged, or seriously threatened by another person?”). The ETV total score, calculated by the Pathways to Desistance Study team as a count of different types of violence exposure participants endorsed, was found to have acceptable levels of internal consistency at follow-up timepoints (range $\alpha = .74 - .75$). At baseline, the ETV total score reflects the past year, and at follow up timepoints, the ETV total score reflects the follow-up period (6 months to 1 year).

The same survey was modified to assess violence exposure during institutional stay. Participants were asked to report on their experience of various forms of witnessed violence and victimization during their residential stays. The Pathways to Desistance Study first coded youth responses as a binary measure (Yes = 1, No = 0), and then computed scores for a count of items within different categories. The counts within categories will be used in the current study as that is what was made available to collaborating researchers. The sum scores include the following categories: resident on resident witnessed violence (count of 7 items), staff on resident witnessed violence (count of 7 items), resident to participant victimization (count of 7 items), staff to participant victimization (count of 7 items), total witnessing score (count of 14 items), and total victimization score (count of 14 items).

Sanctions and Restrictions.

Two surveys in the Pathways to Desistance Study provided information on sanctioning and restrictions during stay. The current study chose to use certain variables that may represent significant stressors or forms of maltreatment for youth during their residential stays.

The restrictions subscale of the Programming Levels, Activities and Privileges measure (Parent et al., 1994; McDonough et al., 1999) assessed areas regarding privileges and restrictions. Participants were asked to report how frequently they experienced certain privileges or restrictions on a scale of 1 to 8 (1 = Twice a day, 2 = Daily, 3 = More than once a week, 4 = Once a week, 5 = Once every two weeks, 6 = Once a month, 7 = Once every few months, 8 = Never), such that higher scores indicated more freedom and privilege. Some questions on the restrictions scale ask participants about the amount of time spent in/out of their cell or room, rated on a scale of 1-5 (1 = None, 2 = Maybe an hour a day, 3 = A few hours a day, 4 = Most of the day, 5 = All day). Participants were asked to rate the frequency/timing of privileges and restrictions across three timepoints during their stay: at first arrival, during general stay, and the last few weeks. The current study will use the average score across these timepoints, which was computed by Pathways to Desistance. The following items were chosen from the restrictions subscale: How often was your room searched? (1-8 scale); How often were you strip searched? (1-8 scale); How much free time did you have? (1-5 scale); How much of the day did you spend locked in your room (1-5). One item, whether staff has opened the youth's mail, was excluded from the profile analysis of institutional experience. First, it is unclear whether this restriction would be expected to contribute to significant distress for youth. Further, this item is broken down within the study in regard to the purposes of mail screening (contraband vs. reading content). Lack of research on mail screening procedures and their effects by purpose limits the

ability to make reasonable predictions about how this might affect youth psychology and behavior.

The second measure, called Sanctioning Practices and Institutional Climate (adapted from Parent et al, 1994; Moos, 1997; Fagan, 1998), assessed the number of times youth experienced various sanctions during their stay. Participants were asked to provide an open-ended estimate on the number of times they received various sanctions. The current study originally proposed using the following items: beaten up by staff, written up, put in isolation, sent to a different unit, lost privileges, given extra duties, physically restrained, and given medication by staff. Two items regarding whether a participant had new charges brought against them or time added to their sentence were excluded from analyses due to a very low response rate; these items were added to an alternate version of the surveys and not available for the majority of participants surveyed at release interviews. Items that were only given to youth in community settings regarding being sent to a more restrictive program or being suspended from a program were also excluded from analyses, as only 40 participants answered these questions.

Psychological Measures.

The current study used five subscales of the Brief Symptom Inventory (BSI, Derogatis & Melisaratos, 1983) as mental health symptom outcomes, which were assessed at each follow-up timepoint as well as at the release interview. The BSI asks respondents to rate how much they have been bothered by various symptoms over the past week on a Likert scale of “0 = Not at all” to “4 = Extremely”. The anxiety subscale includes 6 items (e.g. “Feeling tense or keyed up”). The depression subscale also includes 6 items (e.g. “Feeling no interest in things”). The somatization subscale includes 7 items (e.g., “faintness or dizziness”) to assess for physical symptoms associated with mental illness. The somatization subscale will be included in the

current study because it shows adequate validity and measures of somatization may be particularly salient for non-white participants (Hunter & Schmidt, 2010; Hwang et al., 2008). The hostility subscale includes 5 items and measures cognitions and emotions related to externalizing behavior (e.g., “having urges to break or smash things”). The interpersonal sensitivity subscale (4 items, e.g., “feeling inferior to others”) will also be included due to the relevance of mental health in relation to interactions with others during and after release from custody. Subscale measures are calculated as a mean score, with higher scores indicating increased symptoms. The Pathways to Desistance Study calculated internal consistency scores at baseline and each follow-up for each subscale, which range from acceptable to good (somatization $\alpha = .79 - .83$; interpersonal sensitivity $\alpha = .68 - .77$; depression $\alpha = .79 - .84$; anxiety $\alpha = .73 - .80$; hostility $\alpha = .69 - .80$).

Offending.

The Self-Reported Offending questionnaire (SRO; Huizinga et al., 1991) was given to participants at baseline and all follow up time points. The 22 items ask about involvement in various offenses (e.g. “have you been in a fight?”, “have you stolen a car?”) since the last follow up time point and how frequently participants were involved in each offense. The current study used this measure to assess post-release offending, while controlling for offending prior to institutional stay. The current study used two continuous measures of offending: 1) the frequency of total offending (non-drug offenses) score, which is the sum of the frequencies reported across the 22 acts within each recall period, excluding drug offenses and 2) the aggressive offending variety proportion score, calculated by the number of aggressive acts which were committed in the recall period divided by the number of aggressive offense items the participant responded to. Using both scores allowed for a measure of general frequency of

offending as well as examining associations between profiles and particularly concerning violent offenses.

Two dichotomous measures from the Pathways to Desistance calendar data were used to measure re-offense as well. Calendar data was collected by the study team for each month a participant was enrolled. Participants were asked at each follow-up timepoint to report which prior months they were arrested and charged by police. They were also asked to report which months they engaged in antisocial behaviors as measured by the same 22 items on the Self-Report of Offending scale. Self-report calendar data indicating the timing of re-arrest and timing of engagement in antisocial behavior were used as broad measures of failure in survival analyses.

CHAPTER FOUR

RESULTS

Missing Data

For the institutional experience variables, missing data was minimal with only about 1% missing data on the exposure to violence variables and 1-5% missing on the sanctions and restrictions variables used. The pre-institutional violence exposure measure was determined by utilizing the highest total exposure to violence score (a count of 14 items) from all baseline and follow-up timepoints prior to the first institutional stay of the study. Pre-institutional mental health symptom variables were taken from the timepoint prior to institutional stay. For participants whose stays began before the baseline data collection, the baseline score was used. Twelve participants had stays which appeared to begin at the start of the study, but the beginning of the stay was unclear in relation to the other study follow up periods. Similarly, 16 participants had stays later on in the study, but it was unclear when their stays began. Therefore, the pre-institutional variables were coded as missing for these 28 participants as pre-institutional scores were not able to be determined accurately. Therefore, only about 4% of data was missing on the pre-institutional violence exposure measure. However, for the mental health symptom variables, about 20% of participants were missing data from the original data collection due to missed or partial interview completion, technical difficulties in the interview, or the participant answering too few items to compute a mean score for the symptom subscales. For pre-institutional offending measures only 4-5% of participants were missing data. However, 16-17% of

participants were missing data for post-release offending measures, which was again due to a combination of missed and partial interviews and technical difficulties in the interview.

Descriptive Results

Descriptive analyses included plots of the data and evaluations of assumptions (i.e. skewness and kurtosis) in order to better understand the study variables and their limitations. Study variables were plotted to determine evaluations of skewness and kurtosis. Previous literature suggests a cutoff of 3.29 for skewness and kurtosis Z-scores (Field, 2011). Larger samples often do not deviate from normality enough to require transformations, so less conservative estimates can be utilized (Tabachnik & Fidell, 2007). Mplus analyses allow for corrections of skewed variables by applying maximum likelihood estimation with robust standard errors as has been done in previous research with exposure to violence data (Esposito et al., 2017). Therefore, no data transformations were made to variables for analyses conducted in Mplus. However, some extreme outliers were removed from analyses on sanctioning variables, which youth were asked to estimate freely. Similarly, for other continuous variables, extreme outliers were omitted from analyses, but no data transformations were made. See tables 2 and 4 for descriptive statistics of variables within each latent class.

Prevalence of different institutional experiences varied. For institutional violence exposure, 81% of participants reported observing one or more types of resident-on-resident violence, and about 37% reported witnessing one or more types of staff on resident violence during their stay. Rates of reported victimization were lower, with about 23% reporting one or more instances of victimization by another resident, and 11.7% reporting one or more instances of being victimized by staff. In examining the prevalence of various sanctions participants reported on, being written up for rule violations was common, with about 67% of the sample

reporting one or more write ups during their stay. Losing privileges was also common, with 64.4% reporting losing privileges once or more during their stay. Being placed in isolation was less common, but still occurred for 41.3% of the sample. Being given extra duties was not as common, with only 33% of the sample reporting this sanction. Physical restraint was also less common, with 29.9% of the sample reportedly receiving this as a sanction. The least common sanction was being given medication by staff, which only 7.6% of the sample reported had happened to them. In examining restrictions, room searches appeared common for most participants, with only about 10.5% of the sample reporting never having their room searched. Strip searches were less common, with 38.3% of the sample having never been strip searched, and only about 3% of the sample reporting very frequent (daily or more) strip searches. The amount of time spent locked in their cell varied, with the majority of the sample reporting an hour to a few hours locked in their cell daily. About 38% of the sample reported they did not spend any time during the day locked in their cell, and 19.2% of the sample reported spending most of the day or all day on average locked in their cell. Prevalence of free time was similarly varied with most of the sample reporting having at least an hour or more of free time during the day. About 6.3% of the sample reported having no free time during their stay and 28.8% reporting having most of the day or all-day free time.

Aim 1 Results: Latent Profile Analysis

To test the fit of a multi-class model for the institutional experience variables, a latent profile analysis (LPA) in Mplus version 7.1 (Muthén & Muthén, 2013) was conducted. Changes to the proposed model were needed as, upon further examination of best data practices, the inclusion of highly correlated variables in a latent profile analysis, especially variables which are the sum of subscales, is not recommended (Sinha et al., 2021). Preliminary analyses revealed

moderate correlations between some of the institutional experience variables. Two variables were eliminated from the analyses: “number of times beaten up by staff” and “number of times sent to a different unit.” The “beaten up by staff” variable was removed from analyses because this item appeared to be better reflected by other items such as an item for staff to participant restraints on the sanctioning scale, and physical victimization by staff as measured by the ETV scale. The “beaten up by staff” item was moderately correlated with being victimized by staff ($r = 0.42, p < .001$) as well as being restrained by staff ($r = 0.47, p < .001$). The “sent to a different unit” sanctioning item was also removed because it correlated moderately with total institutional victimization ($r = 0.36, p < .001$), and in practice, unit movements may not always reflect sanctioning. For example, youth may move units in detention settings due to staff changes, protective custody, or other administrative changes not connected to their behavior.

After removing correlated variables and total scores, the following variables were used: Four institutional violence variables (witnessed violence resident on resident, witnessed violence staff on resident, victimization by residents, victimization by staff), four restriction variables (room searches, strip searches, free time, time locked in cell), and six sanction variables (write ups, isolation, loss of privileges, extra duties, physical restraint, given medication). The number of days in the institutional stay period was also used as a covariate in the latent profile analyses. Additionally, due to a zero-inflated distribution being observed in three of the violence exposure variables (witnessed staff to resident violence, victimization by staff, and victimization by residents) and all six of the sanction variables, a Poisson distribution for count variables was used in Mplus analyses in order to find the best fitting model for the data considering their non-normal distribution.

LPAs were conducted that specified 1-, 2-, 3-, and 4-class models as possible solutions.

Model fit was assessed using a combination of the Akaike Information Criterion (AIC; Akaike, 1987), Bayesian Information Criterion (BIC; Schwarz, 1978), Adjusted Bayesian Information Criterion (ABIC, Sclove, 1987), entropy (Ramaswamy et al, 1993), Bootstrap Likelihood Ratio Test (McLachlan & Peel, 2000), and Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMRT; Lo et al., 2001). The BLRT and LMRT compare the fit of a target model (e.g., a 3-class model) to that of alternative models specifying fewer classes (e.g., a 2-class model). BLRT and LMRT p-values $< .05$ provide evidence that the target model explains variance more completely than another model specifying a different number of classes, and p-values $> .05$ would indicate the target model does not provide superior fit compared to other models. Information criterion values closer to 0 are also representative of better model fit, although the BIC is not accompanied by a p-value that can allow for comparisons of competing models. Entropy values close to 1.00 suggest better classification accuracy. Past research (Nylund et al., 2007) recommends that the LMRT be used to establish an upper limit for the number of classes to be extracted in the sample, and the BLRT and BIC be used to determine the most appropriate model. The number of initial stage optimizations was set to 500 and the number of final stage optimizations was set to 200. Results revealed that a 2-class model provided a superior fit for the data compared to a 1-class model as evidenced by an AIC/BIC closer to 0 and a significant p-value for the LMRT. However, a 3-class model was a superior fit compared to the 2-class model, as evidenced by a significant LMRT p value and an AIC/BIC closer to 0. When a 4-class model was tested, the LMRT p-value was no longer significant, indicating that a 4-class model was not a significantly better fit for the data in comparison to a 3-class model (See Table 1).

Table 1. Latent Profile Analysis Results

| # of Classes | BLRT | LMRT | AIC / BIC | Entropy |
|--------------|------------|-------------------------|---------------------|---------|
| 1-class | - | - | 53602.95 / 53686.28 | - |
| 2-class | $p < .001$ | 10214.62 ($p = .009$) | 43322.40 / 43427.23 | 0.98 |
| 3-class | $p < .001$ | 12412.69 ($p = .001$) | 41194.76 / 41321.10 | 0.96 |
| 4-class | $p < .001$ | 1740.88 ($p = .738$) | 39469.19 / 39966.30 | 0.96 |

BLRT – Bootstrap Likelihood Ratio Test

LMRT – Lo-Mendell-Rubin Adjusted Likelihood Ratio Test

AIC – Akaike Information Criteria

BIC – Bayesian Information Criteria

Composition of Profiles.

The composition of the profiles for the 3-class model showed one **low exposure/low sanctions** class ($n = 409$) with relatively lower scores on all of the violence exposure variables and lower scores on all of the sanction variables. This class also had the lowest reported frequency of room searches, the greatest amount of time spent locked in their rooms, and the highest amount of free time compared to the other two classes. This class had a value for strip search frequency between the other two classes. The second class ($n = 81$) can be characterized as **high exposure/high sanctions**. This class exhibited the highest witnessed violence and staff victimization, the highest sanctions with the exception of forced medication, the highest frequency of room searches, and the lowest frequency of strip searches. In this class, forced medication and amount of free time fell between the values of the other two classes. Lastly, this class had the lowest amount of time spent locked in their rooms. The third and final class ($n = 188$) can be characterized as **peer victimization/medication** as this class showed the highest reported victimization by other residents and the highest frequency of forced medication by staff. Other violence exposure and sanctioning variables all fell between the values of the other two classes. As for restrictions, this class showed room search frequency and time spent locked in their rooms which also fell between the values of the other two classes, the relatively lowest

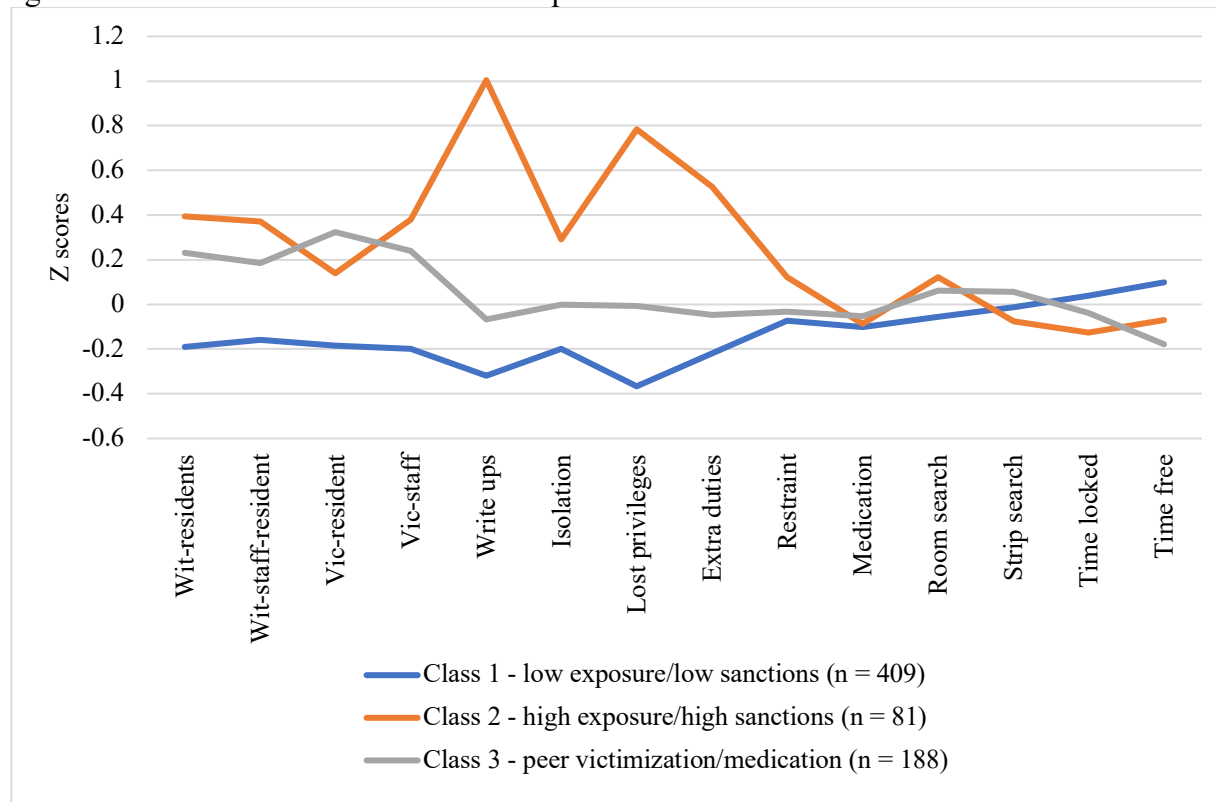
scores for free time, and relatively highest scores for strip searches. Notably, when comparing means of the restriction scores across classes, only the “free time” mean scores were significantly different across classes. See Table 2 for descriptive statistics by profile and Figure 1 for a visual representation of profiles.

Table 2. Institutional Experience Variables by Class

| | Class | N | Mean (SD) |
|---|-------|-----|---------------|
| Witnessed violence – Resident to Resident | 1 | 408 | 1.99 (1.73) |
| | 2 | 81 | 3.04 (1.83) |
| | 3 | 188 | 2.80 (1.94) |
| Witnessed violence – Staff to Resident | 1 | 408 | .50 (.93) |
| | 2 | 81 | 1.09 (1.33) |
| | 3 | 188 | .93 (1.34) |
| Victimization by Resident | 1 | 408 | .20 (.49) |
| | 2 | 81 | .43 (.72) |
| | 3 | 188 | .56 (.99) |
| Victimization by Staff | 1 | 408 | .06 (.25) |
| | 2 | 81 | .35 (.67) |
| | 3 | 188 | .28 (.72) |
| Room Search Frequency | 1 | 407 | 5.79 (1.81) |
| | 2 | 80 | 5.47 (1.84) |
| | 3 | 188 | 5.58 (1.80) |
| Strip Search Frequency | 1 | 404 | 6.56 (1.74) |
| | 2 | 80 | 6.68 (1.72) |
| | 3 | 186 | 6.44 (1.79) |
| Time Locked in Room | 1 | 389 | 2.43 (1.28) |
| | 2 | 78 | 2.20 (1.21) |
| | 3 | 181 | 2.37 (1.25) |
| Free Time | 1 | 408 | 3.24 (1.06) |
| | 2 | 81 | 3.05 (.85) |
| | 3 | 188 | 2.94 (.95) |
| Write ups | 1 | 400 | 1.44 (1.98) |
| | 2 | 75 | 47.79 (32.78) |
| | 3 | 185 | 10.42 (8.66) |
| Isolation | 1 | 392 | .43 (.85) |
| | 2 | 73 | 5.99 (8.86) |
| | 3 | 178 | 2.80 (4.08) |
| Loss of privileges | 1 | 404 | 1.15 (1.73) |
| | 2 | 66 | 26.29 (20.02) |
| | 3 | 183 | 9.13 (9.39) |

| | | | |
|---------------------|---|-----|-----------------|
| Extra duties | 1 | 406 | .33 (.90) |
| | 2 | 74 | 13.58 (16.85) |
| | 3 | 184 | 3.47 (5.15) |
| Physical restraint | 1 | 408 | .29 (1.20) |
| | 2 | 81 | 8.07 (16.61) |
| | 3 | 188 | 1.79 (3.26) |
| Medication | 1 | 403 | .31 (4.51) |
| | 2 | 78 | 1.24 (7.08) |
| | 3 | 182 | 3.85 (25.27) |
| Days in Institution | 1 | 409 | 235.29 (234.72) |
| | 2 | 81 | 370.72 (235.73) |
| | 3 | 188 | 349.49 (267.94) |

Figure 1. Latent Profiles of Institutional Experience



*Notes: Room search and Strip search variables are reverse coded on Figure 1

A follow-up ANOVA analysis was conducted to determine which mean values across classes were significantly different. All variables used in the latent profile analysis had significantly different mean values across classes with the exception of the room search [$F(2,$

674) = 1.51, $p = .22$], strip search [$F(2, 667) = .57, p = .57$], and time spent locked in room [$F(2, 645) = 1.13, p = .32$] variables.

Aim 2 Results: Demographic and Institutional Factors Across Latent Classes

Aim 2 used Chi-square and MANOVA comparisons to determine whether there were significant differences in demographics, institutional variables, trauma history, and psychological symptoms between resultant profiles from the latent profile analysis. Chi-square analyses showed no significant differences by gender [$\chi^2(2, 678) = 2.44, p = .295$], race [$\chi^2(6, 678) = 1.96, p = .923$] or study site [$\chi^2(2, 678) = .71, p = .70$] across the three latent classes. Results showed there was a significant difference in class membership depending on the type of institutional setting (see Table 3) [$\chi^2(2, 678) = 13.58, p = .001$] such that the low exposure/low sanctions class had a greater number of participants in correctional settings than would be expected ($p < .001$) and the high exposure/high sanctions class had less participants in correctional settings than would be expected ($p < .01$).

Table 3. Latent Class by Setting Type

| Latent Class | Setting Type | |
|--------------------------------------|--------------|------------------|
| | Correctional | Non-correctional |
| Class 1: low exposure | 269 | 140 |
| Class 2: high exposure/high sanction | 38 | 43 |
| Class 3: peer victimization | 103 | 85 |

$\chi^2(2, 678) = 13.58, p = .001$

A MANOVA analysis was conducted to determine whether there were significant differences in pre-institutional mental health symptoms, pre-institutional violence exposure, or age, across the latent classes. Box's test of equality of covariance matrices indicated the covariance matrices of the dependent variables were not equal across groups. Therefore, Pillai's

trace, which is an estimate that is more robust to violations of the assumption of equality of covariance matrices, was used and indicated a significant difference in dependent variables across the latent classes (Pillais' Trace = .15, $F(16, 1066) = 5.48, p < .001, \eta_p^2 = .076$). Further, Levene's test of equality of variances was also violated for age and hostility variables. Therefore, separate ANOVA analyses were run with the Welch's F statistic for these variables, which is a more robust estimator for dependent variables with error variances that are unequal across groups. More stringent p-values of .01 were used to remain conservative due to multiple analyses. Results showed no significant differences in class membership based on somatic [$F(2, 539) = 2.49, p = .08, \eta_p^2 = .009$], interpersonal [$F(2, 539) = 1.63, p = .20, \eta_p^2 = .006$], depressive [$F(2, 539) = 1.44, p = .24, \eta_p^2 = .005$], or anxiety symptoms [$F(2, 539) = 1.54, p = .22, \eta_p^2 = .006$]. However, there were significant differences in age [$F_{Welch}(2, 252.90) = 32.72, p < .001, \eta_p^2 = .049$], pre-institutional violence exposure [$F(2, 539) = 9.24, p < .001, \eta_p^2 = .033$], and hostility [$F_{Welch}(2, 160.68) = 15.67, p < .001, \eta_p^2 = .075$] between classes. Games-Howell post-hoc comparisons revealed participants in the low exposure/low sanctions class ($M_{age} = 18.67, SD = 2.01$) tended to be significantly older than participants in the other two classes [Class 2 $M_{age} = 17.62, SD = 1.29$; Class 3 $M_{age} = 17.96, SD = 1.71$]. Post-hoc comparisons for pre-institutional violence exposure showed participants in class 2 (high exposure/high sanctions) had significantly higher scores on pre-institutional violence exposure ($M = 7.15, SD = 2.37$) compared to the other two classes (class 1 $M = 5.60, SD = 2.85$; class 3 $M = 6.09, SD = 2.93$). Finally, the post-hoc comparisons for hostility showed class 2 (high exposure/high sanctions) ($M = 1.12, SD = 1.04$) and class 3 (peer victimization/medication) ($M = .80, SD = .74$) having significantly higher hostility scores than class 1 (low exposure/low sanctions) ($M = .54, SD = .61$).

Aim 3 Results: Post-Release Offending

Aim 3 used hierarchical multiple regression, survival analysis, and multilevel modeling to examine how institutional experiences may predict post-release offending and mental health symptoms.

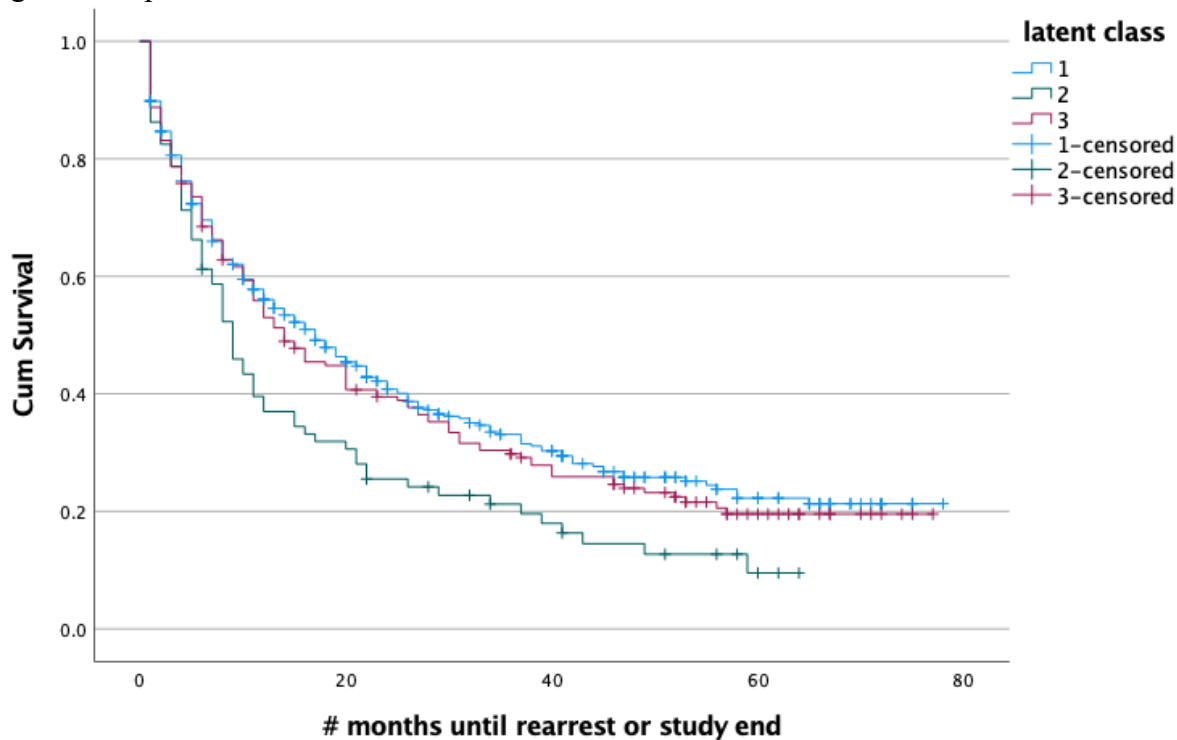
A hierarchical linear regression analysis with variables entered in forward fashion was used to assess the relationship between institutional experience and general offending, as measured by self-reported offending frequency, excluding drug-related offending. This variable was calculated from the first follow-up timepoint post-release. Age, race, gender, pre-institutional violence exposure, and pre-institutional offending frequency (excluding drug offenses) were used as covariates in step one of the regression. Results indicated the profiles of institutional experience did not contribute significantly to offending frequency post-release beyond pre-institutional covariates [$F_{change} = .38, p = .685$]. Considering covariates, pre-institutional offending frequency ($\beta = .20, p < .001$) and pre-institutional violence exposure ($\beta = .13, p = .003$) were predictive of increased offending frequency post-release.

A hierarchical linear regression analysis with variables entered in forward fashion was used to assess the relationship between institutional experience and aggressive offending, as measured by the aggressive offending variety proportion score, at the first follow-up timepoint post-release. Age, race, gender, pre-institutional violence exposure, and pre-institutional aggressive offending were used as covariates in step one of the regression. Profile membership was entered as a predictor in the second step of the model. Findings indicated the profiles of institutional experience did not contribute significantly to aggressive offending post-release beyond pre-institutional covariates [$F_{change} = 1.65, p = .19$]. Pre-institutional aggressive offending ($\beta = .25, p < .001$), pre-institutional violence exposure ($\beta = .15, p < .001$), and male

gender ($\beta = .10, p = .012$) were predictive of increased aggressive offending variety post-release, and being of Black/African American race was associated with decreased aggressive offending post-release ($\beta = -.13, p < .001$).

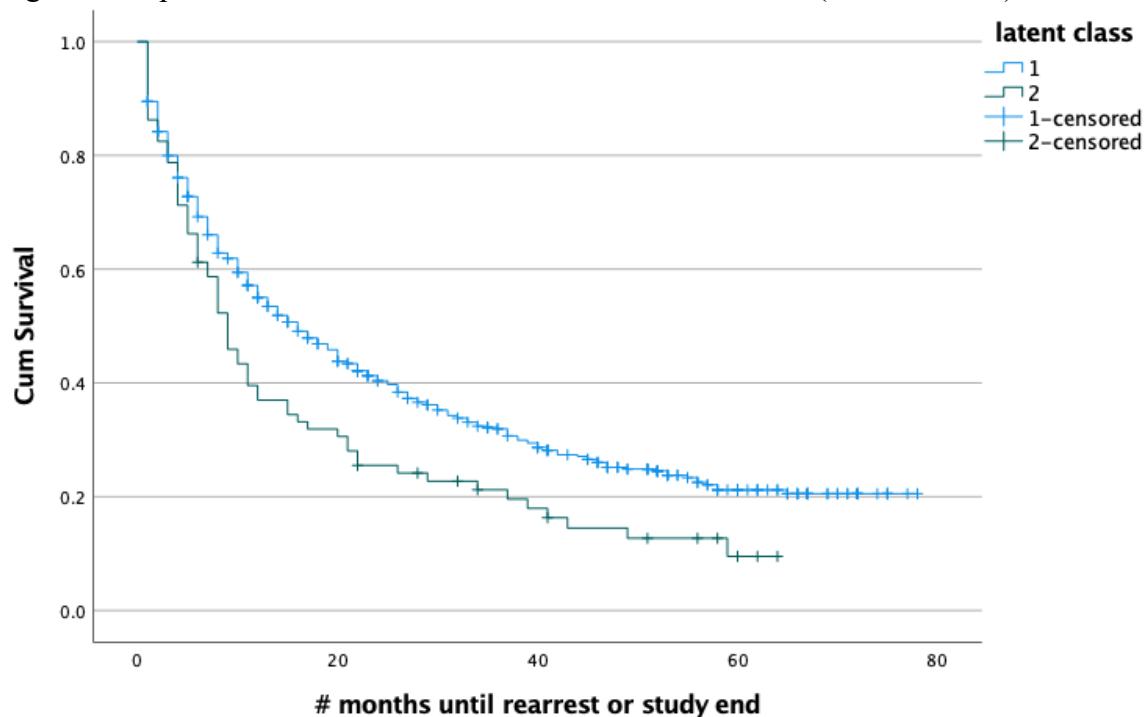
Survival analyses were used to examine whether certain profiles of youth institutional experience differentially predicted time to next arrest over the study period. First, the Kaplan-Meier method log rank test was used to determine whether there were differences in the survival distribution across the institutional experience classes. The survival distributions for the three classes were significantly different [$\chi^2(2) = 8.04, p = .02$]. The survival function showed classes 1 (low exposure/low sanctions) and 3 (peer victimization/medication) as having very similar distributions, and class 2 (high exposure/high sanctions) having a steeper increase in risk for rearrest over time. Class 2 showed the highest likelihood for rearrest compared to the other two classes. By the end of the study period, 32.4% of the participants in class 1 and 23.6% of participants in class 3 “survived” without re-arrest after release. In comparison, 15% of participants in class 2 “survived” to the end of their study period without re-arrest. The Kaplan-Meier survival function exhibited areas in which the curves of latent classes 1 and 3 crossed over one another, thereby violating the assumption of proportional hazards needed to utilize Cox regression (see Figure 2).

Figure 2. Kaplan-Meier Survival Function of Time to Re-arrest



Due to the violation of proportional hazards with classes 1 and 3, a cox proportional hazards regression model was used with classes 1 and 3 combined and class 2 in order to examine the effects of several factors on the number of months until re-arrest or the end of the study. When classes 1 and 3 were combined, the proportional hazards assumption was met, as evidenced by the Kaplan-Meier curves no longer crossing over one another (see Figure 3).

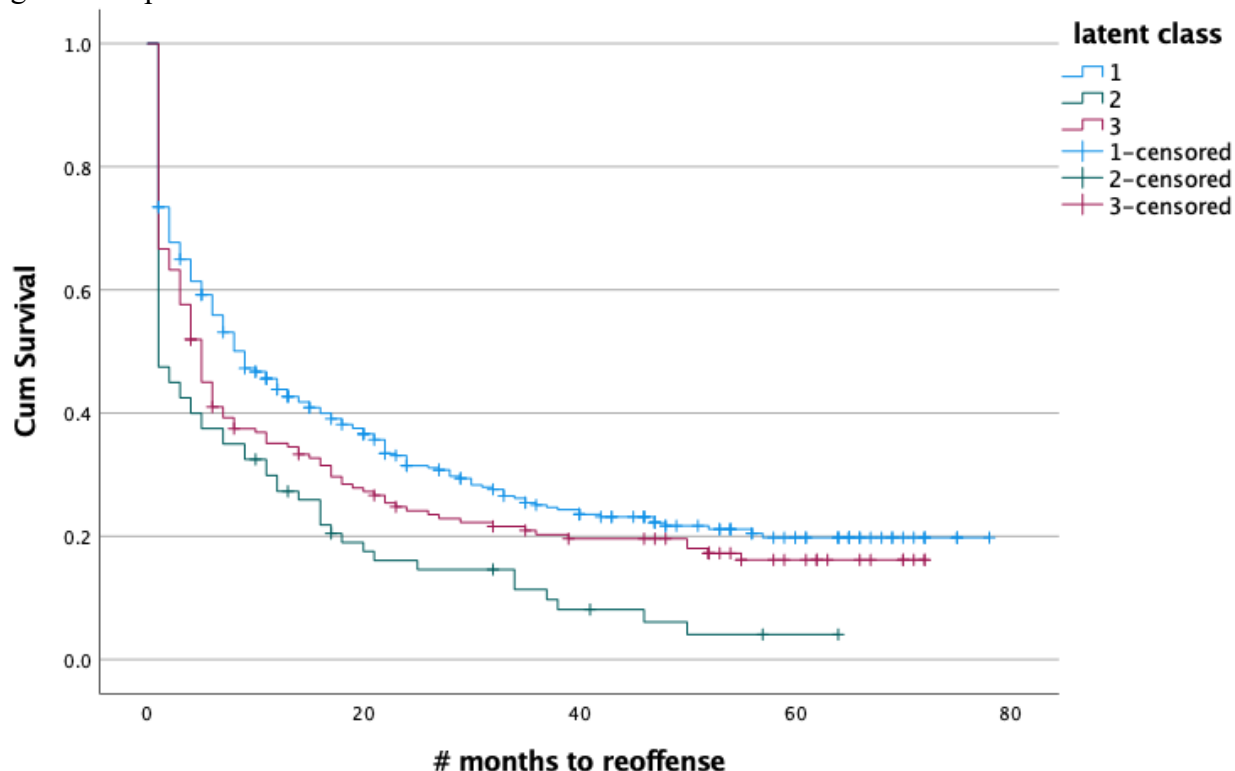
Figure 3. Kaplan-Meier Survival Function of Time to Re-arrest (2-class model)



The current study considered the following variables as predictors for time to rearrest: demographics (age at time of release, race, gender), pre-institutional violence exposure, and pre-institutional offending as measured by the number of offenses endorsed from the self-reported offending measure at the timepoint prior to institutionalization. Results showed several significant covariates in predicting time to rearrest. Participants who were younger at the time of their release showed shorter times to rearrest than those who were older at release [adjusted hazard ratio (HR) = 0.90, 95% CI: 0.84–0.96, $p < .001$]. Females showed a longer time to rearrest compared to males (HR = .46, 95% CI: 0.31–0.69, $p < .001$). Additionally, individuals with increased pre-institutional violence exposure (HR = 1.07, 95% CI: 1.03–1.11, $p < .001$) had a shorter time to rearrest. After controlling for these significant covariates, institutional experience profile was no longer a significant predictor of time to rearrest [$\chi^2(1) = 1.32, p = .25$].

Survival analyses were also used to examine whether certain profiles of youth institutional experience differentially predicted time to next self-reported offense over the study period. First, the Kaplan-Meier method log rank test was used to determine whether there were differences in the survival distribution across the institutional experience classes (see Figure 4).

Figure 4. Kaplan Meier Survival Function of Time to Re-offense



The survival distributions for the three classes were significantly different [$\chi^2(2) = 17.52, p < .001$]. The survival function showed class 1 (low exposure/low sanctions) having the highest percentage of participants reoffending in the first month after release, but also having the most gradual decrease in survival as time passed. Class 1 overall had the lowest percentage of individuals reoffending by the end of the study. Class 3 (peer victimization/medication) showed a curve similar to class 1, but with a steeper increase in reoffending in the earlier months after release. Class 2 (high exposure/high sanctions) showed the highest likelihood for reoffending over time compared to the other two classes, and steadier increase for risk of reoffending over

time. By the end of the study period, 25.7% of the participants in class 1 and 19.2% of participants in class 3 “survived” without re-offense after release. In comparison, only 8.8% of participants in class 2 “survived” to the end of their study period without re-offense. Notably, the Kaplan-Meier curves did not overlap, meaning the proportional hazards assumption was met for this analysis. Cox proportional hazards regression models (Cox, 1972) were used to study the effects of several factors on the number of months until reoffense or the end of the study. The current study considered the following variables as predictors for reoffending: demographics (age at time of release, race, gender), pre-institutional violence exposure, and pre-institutional offending as measured by the number of offenses endorsed from the self-reported offending measure at the timepoint prior to institutionalization. Results showed several significant covariates in predicting reoffense. Participants who were younger at the time of their release had a shorter time to reoffense than those who were older at release [adjusted hazard ratio (HR) = 0.92, 95% CI: 0.87–0.97, $p = .004$]. Females had a longer time to reoffense compared to males (HR = .58, 95% CI: 0.40–0.84, $p = .003$). Additionally, individuals with increased pre-institutional offending (HR = 1.002, 95% CI: 1.000–1.003, $p = .007$) and increased pre-institutional violence exposure (HR = 1.106, 95% CI: 1.069–1.144, $p < .001$) reoffended more quickly. After controlling for these significant covariates, institutional experience profile was no longer a significant predictor of time to reoffense [$\chi^2(2) = 2.83$, $p = .243$]. See Table 4 for descriptive statistics of pre-institutional mental health and offending and post-release offending.

Table 4. Pre- and Post- Institutional Variables by Class

| | Class | N | Mean (SD) |
|--|-------|-----|-------------------|
| Age at Release | 1 | 409 | 19.05 (2.19) |
| | 2 | 81 | 17.59 (1.35) |
| | 3 | 188 | 18.23 (1.99) |
| Somatic Symptoms (pre-institutional) | 1 | 316 | .26 (.53) |
| | 2 | 72 | .39 (.54) |
| | 3 | 155 | .35 (.54) |
| Interpersonal Sensitivity (pre-institutional) | 1 | 316 | .60 (.03) |
| | 2 | 72 | .53 (.71) |
| | 3 | 155 | .41 (.63) |
| Depressive Symptoms (pre-institutional) | 1 | 316 | .54 (.72) |
| | 2 | 72 | .70 (.74) |
| | 3 | 155 | .61 (.70) |
| Anxiety Symptoms (pre-institutional) | 1 | 316 | .41 (.62) |
| | 2 | 72 | .55 (.56) |
| | 3 | 155 | .44 (.61) |
| Hostility Symptoms (pre-institutional) | 1 | 315 | .54 (.61) |
| | 2 | 72 | 1.12 (1.04) |
| | 3 | 155 | .80 (.74) |
| Violence Exposure (pre-institutional) | 1 | 391 | 5.52 (2.88) |
| | 2 | 79 | 6.99 (2.44) |
| | 3 | 180 | 6.15 (2.89) |
| General Offending Frequency (pre-institutional) | 1 | 389 | 20.94 (57.63) |
| | 2 | 76 | 65.42 (121.16) |
| | 3 | 176 | 25.39 (58.98) |
| General Offending Frequency (post-release) | 1 | 330 | 11.36 (33.80) |
| | 2 | 73 | 21.47 (48.40) |
| | 3 | 163 | 13.34 (34.99) |
| Aggressive Offending Variety (pre-institutional) | 1 | 391 | .12 (.16) |
| | 2 | 79 | .28 (.27) |
| | 3 | 179 | .19 (.20) |
| Aggressive Offending Variety (post-release) | 1 | 332 | .06 (.10) |
| | 2 | 76 | .11 (.14) |
| | 3 | 163 | .08 (.13) |

Aim 3 Results: Post-Release Mental Health

To explore the impact of institutional experience on psychological symptoms post-release, the current study used multi-level modeling (MLM) with a two-level nested model in the

Hierarchical Linear Modeling (HLM) software program (Bryk and Raudenbush, 1992). A subset of 374 participants with at least three follow-up timepoints post-release were used in the multilevel modeling analysis. At level one of the model, time was used as the predictor of mental health symptoms (time nested within person). Due to multiple analyses with five different outcome variables, a more stringent p-value at the alpha .01 level was used to evaluate significance. Unconditional model results for anxiety symptoms showed, on average, a positive slope [*Coeff.* = .002, *SE* = 0.001, *p* < .001], meaning anxiety symptoms gradually increase in the sample. However, the variability in trajectory of slopes was not significant across participants [$\chi^2(369) = 391.62$, *p* = .200]. For depressive symptoms, a similar pattern was true where there was also a gradual increase on average for depressive symptoms [*Coeff.* = .003, *SE* = 0.001, *p* < .001], but the variability in trajectory of slopes was nonsignificant [$\chi^2(369) = 414.73$, *p* = .05]. For hostility symptoms there was also an average increase over time [*Coeff.* = .003, *SE* = 0.001, *p* < .001], but no significant difference in the variability of trajectory of slopes [$\chi^2(369) = 323.15$, *p* > .05]. Interpersonal sensitivity symptoms also showed a gradual increase over time on average [*Coeff.* = 0.001, *SE* = 0.001, *p* = .009], but no significant difference in the variability of trajectory of slopes [$\chi^2(369) = 353.12$, *p* > .05]. Lastly, for somatic symptoms, there was an average increase over time [*Coeff.* = .002, *SE* = 0.001, *p* < .001], but no significant difference in the variability of trajectory of slopes [$\chi^2(369) = 415.74$, *p* = .047]. In sum, results for each of the five mental health outcome variables indicated that the slopes of score change did not vary significantly. In fact, subsequent analyses of the variance components indicated that less than 1% of the overall variability in scores across the mental health domains studied was due to variability in slopes. Due to slopes not varying significantly, subsequent steps of multilevel modeling were not performed.

CHAPTER FIVE

DISCUSSION

The current study aimed to examine associations among institutional experiences of justice-involved youth, their histories of violence exposure, offending behaviors, and mental health functioning. The first overarching goal of this study was to identify individual level factors which make certain youth more vulnerable to stress and trauma in justice settings. The second goal was to determine whether stressful or traumatic experiences in justice settings were predictive of adverse outcomes such as reoffending behaviors and psychological symptom increases. The current study findings have implications for understanding the diversity in needs of youth within juvenile justice institutions. Findings indicate a need for individualized and trauma-informed support for justice-involved youth as they are entering and leaving justice institutions.

Preliminary Analyses: Institutional Experiences

From preliminary analyses of institutional experience variables, results show exposure to violence in institutional settings is prevalent in this sample. Witnessing violence between residents was the most common experience (81%) and witnessing staff on resident violence was the second most common experience (37%). Being the victim of violence from other residents (23%) or staff members (11.7%) were relatively less common. The most common sanctions received were write ups and loss of privileges. Still, over one quarter of the sample reported being placed in isolation (41.3%) or physically restrained (29.9%). The least common sanctioning practice was being given medication by staff. Experiences of restrictions also varied

based on type, with room searches being the most common, and strip searches being utilized with over half of participants, though not frequently. The amount of time spent in a cell or room also varied, with the majority of participants reporting only up to a few hours locked in. Similarly, free time varied, with the majority of participants having at least some free time during their days. These two variables likely reflect programming practices and security levels of institutions youth were living in. Notably, “free time” may also be thought of as unstructured time, as institutions for youth often have set programming activities depending upon the setting (e.g., group meetings for therapy, programs, religious purposes). Unstructured or “free” time is an ambiguous variable, as it could be associated with increased or decreased stress and positive or negative behaviors in youth. Unstructured time could be used as a form of reward for youth, a form of punishment (e.g., sitting out from regular programming), or could simply be a reflection of an environment in which there is not a great deal of planned programming. While time spent locked in a cell or room is likely to be stress inducing for youth, it is important to consider that free, unstructured time can also be thought of as potentially detrimental to behavioral outcomes as unstructured time in community settings is associated with increased behavioral problems in adolescents (Bartko & Eccles, 2003; Trinidad et al., 2018).

Overall, these findings show that institutional experience is varied. Variance can be partially attributed to differences in the facilities themselves as facility purpose and security level is expected to affect restrictions such as how much free time youth are given and how often rooms need to be searched. Youth behaviors and needs also influence the type of setting they are placed in and how they interact with other youth and staff. In addition, prevalence rates of witnessed violence and victimization show that a large portion of youth are witnessing violence, but a smaller portion are being victimized. This may indicate there are smaller subsets of youth

who are perpetrating violence against others and/or being victimized directly, but that most institutionalized youth, even outside those subsets, are witnessing violence around them. While experience is varied, violence exposure as well as other potentially stressful practices (e.g., strip searches, restraint, isolation) are prevalent in this sample. The prevalence of even the least common situations (e.g., staff on youth violence, medication as a sanction) is higher than one would expect considering ethical codes for staff working with justice-involved youth indicate staff should avoid use of physical force and other potentially damaging practices (Sachs, 1999). Results support the need for monitoring practices of juvenile correctional staff, especially in relation to uses of force and other potentially psychologically damaging practices like isolation.

Aim 1: Latent Profile Analysis

While Aim 1 of the current study was meant to be more exploratory in nature, results are consistent with the broad prediction that at least two profiles or classes of youth would be identified in the latent profile analysis. However, findings were inconsistent with the original prediction that one class would show high exposure to institutional violence and restrictions/sanctioning and the other showing low institutional exposure to violence and restrictions/sanctioning. The resulting profiles were more complicated than hypothesized, as there was a third class which presented with significantly higher levels of peer victimization and medication as a sanction (class 3). This third peer victimization/medication class suggests a subset of youth who are especially vulnerable to victimization by peers. This finding suggests this subset of youth are more often in placements where there is access and ability for staff to use medication on residents, further supporting the idea that these class 3 youth may have increased psychological needs. Previous research has suggested incarcerated individuals with mental illness and learning disabilities are at increased risk for peer victimization (Blitz et al., 2008;

Wolff et al., 2009; Sedlak et al., 2013), which is what class 3 findings may be supporting as well.

In fact, analyses under aim 2 did find class 3 youth had greater hostility related mental health symptoms in comparison to class 1 youth. However, no differences were found between the classes on other mental health variables and unfortunately the current study did not measure other potentially related symptoms such as the presence of learning disabilities.

Another finding which appeared different from what would be expected was related to class 1, which showed the relatively highest scores for both time locked in a cell/room and free time. As mentioned above, it is important to acknowledge that “free time” appears to be reflective of unstructured time rather than the inverse of time locked in a cell/room. One variable is referring to the amount of time spent locked in a cell/room, whereas free time means time without specific programming. These variables could even overlap with some youth reporting both high levels of free/unstructured time as well as time locked in their cell/room such as would be the case if a resident were given time without specific programming (free time) while they were in their room. Class 1 (low exposure/low sanctions) showed the highest mean for locked time, but the lowest mean for room searches, which taken together suggests a stricter setting with high security, such as a juvenile detention facility. The lower scores on room searches could reflect less of a need for room searches due to higher security and less time spent outside the room.

An additional interesting finding of the LPA is the observed difference in patterns of restrictions across classes 1 and 2. While class 2 showed more room searches than strip searches, class 1 showed more strip searches than room searches. Class 2 had less time locked in their cells as well as less free time. Conversely, class 1 reported more time spent locked in their cells/rooms and more free time. These observed patterns could be influenced by both institutional security

practices and individual participant behavior. For example, institutional settings which allow youth outside of their room/cell less often (e.g., class 1) may have less need to complete room searches of youth, as those youth would have less opportunity to acquire contraband items from peers or other areas of the institution if they are in their cell for much of the day. Furthermore, it is also possible that at an institutional level, some placements simply utilize sanctions more often (e.g., write ups, extra duties, etc.) and other placements utilize certain restrictions (e.g., room searches, time in cell) more often. Punishments are a more reactive approach whereas restrictions are a more proactive approach toward minimizing misbehavior. This may partially explain why lower levels of violence exposure are seen in class 1, which also has relatively higher levels of restrictions such as time spent locked in one's room. If youth are not given as many opportunities for misbehavior in institutions, such as perpetrating violence against one another, one would expect less of a need for sanctioning practices. Such a tradeoff has been seen in previous research on institutional practices in relation to the direct supervision model, an approach to inmate supervision involving more direct contact between correctional officers and inmates on units (Wener, 2006). A review of prior studies found direct supervision models in correctional management have been associated with fewer violent incidents and less disciplinary infractions for inmates in adult institutions (Wener, 2006). In the current study, youth in settings with increased restrictions may be in institutions that take more of a direct supervision approach. However, it is also possible that the different patterns in sanctions and restrictions in classes 1 and 2 are better explained by individual differences. It is possible that youth in class 2 exhibited behaviors in their setting which elicited more sanctions and room searches. For example, if a participant has a history of hiding contraband, they may have their room searched more frequently than those without a history of those behaviors within an institutional setting. The

pattern seen in class 1, less institutional violence and sanctioning, could mean youth are simply acting out less frequently and therefore need less intensive supervision, reflected by significantly higher free time for youth in class 1. The difference between violence exposure levels in classes 1 versus 2 likely plays a role in the differences in sanctions and restrictions as well. Class 2 youth reported the highest levels witnessed violence, between both residents and staff and residents, and the highest levels of victimization by staff. Class 2 youth compared to the other classes appear to be experiencing environments that have both more violence as well as harsher sanctioning practices, but the direction of this relationship is unclear. The pattern seen in class 2 could also be related to a type of setting which attracts more serious offenders whose behavior warrants more frequent sanctions as well as begets increased violence.

Aim 2: Pre-Institutional Factors

Aim 2 hypotheses were partially supported. Hypothesis 2a, which predicted younger participants would be more likely to fit into profiles with the highest peer-perpetrated victimization was partially supported, as the classes with the highest and second highest mean peer victimization (classes 3 and 2 respectively) were comprised of youth who were significantly younger than those in a class with lower peer victimization (class 1). This finding, in combination with 2d described below, suggests younger adolescents are more often placed in settings that are non-correctional, but have higher institutional violence exposure and sanctions. This relationship may reflect lower maturity and poorer impulse control in younger adolescents, which could contribute to increased acting out, violence, and sanctions. It could also partially reflect the difference in settings, as in more highly structured and restrictive correctional settings, there may be less opportunity for perpetration of peer victimization.

Hypothesis 2b, which predicted males would fall more frequently into classes with higher exposure to institutional violence and sanctions/restrictions than females, was not supported. Results showed no significant difference in gender representation by class. The lack of significant findings in relation to gender may be reflective of a more homogenous group of youth. The Pathways to Desistance Study specifically recruited serious adolescent offenders. Due to the specificity of the sample being those with serious charges, there could be greater similarity in life experience and institutional experience for youth, regardless of gender. Further, while some prior research found gender differences in institutional experience (e.g., Khoury-Kassabri & Attar-Schwartz, 2014), other studies did not find gender differences (e.g., Ahlin, 2021). Prior literature has suggested other factors related to gender identity and sexual orientation could be additional predictors of institutional victimization rather than gender alone (e.g., Man & Cronan, 2001).

Hypothesis 2c regarding racial differences by class was not supported, as there were no significant racial differences across the latent classes. This result is not very surprising, as previous research in this area has been mixed and appears dependent on multiple additional factors not measured in the current study such as the majority racial group of the institution (Kiessl & Wurger, 2002), specific types of victimization (e.g., sexual assault) (Wolff et al., 2009) and pre-institutional victimization specifically rather than overall violence exposure (Yoder et al., 2019). Further research that teases apart more complex factors may find racial differences in experience that were not seen in the current study.

Hypothesis 2d, which predicted being in correctional settings (prisons, jails, and detention centers) would be associated with profiles in which there was higher exposure to institutional violence and restrictions/sanctioning in comparison to non-correctional settings, was

not supported. Results showed class 1, which had the lowest violence exposure and sanctions, had significantly more participants in correctional settings than the other two classes. Class 2 (high exposure/high sanctions) had less participants in correctional settings than would be expected. This finding is fitting with a general expectation of increased security in correctional settings as compared to non-correctional settings. However, it is surprising that the class most associated with correctional settings showed relatively lower sanctions and violence exposure compared to the other classes. This may reflect, as discussed above, a tradeoff between violence/sanctions and restrictions such that greater restriction prevents violence and misbehavior, and therefore also prevents the need for more sanctions.

There were not predictions for research question 2e, which examined any location difference across the classes. Results showed no significant difference in profile membership based on whether participants were recruited from the Pennsylvania versus Arizona sites.

Finally, hypotheses 2f and 2g were also partially supported. Higher scores in pre-institutional violence exposure were most associated with class 2 (high exposure/high sanctions). While most of the pre-institutional mental health subscales were not significantly associated with the latent classes, the hostility subscale did show significant connections to the classes. Results showed a pattern in which participants in class 2 had the highest hostility scores, class 3 had the second highest, and class 1 had the lowest hostility scores.

Based on previous research with this population, it is not surprising that hostility was a relevant mental health variable, especially in relation to violence exposure. The BSI hostility subscale items reflect irritation and dysregulated anger (e.g., “feeling easily annoyed or irritated”, “temper outbursts that you could not control”). Prior research on adult inmate populations has found prevalent symptoms of persistent anger and irritability, with 30 to 49% of

inmates reporting such symptoms (James & Glaze, 2006). Such items could be reflective of irritable behavior and anger outbursts which are part of the alterations in arousal and reactivity seen in PTSD (American Psychiatric Association, 2013). In the current study, youth with both the highest pre-institutional hostility and the highest pre-institutional violence exposure are most at risk for continued violence exposure in justice settings. This finding is in line with previous youth trauma research on polyvictimization (Finkelhor et al., 2009; Finkelhor et al., 2015) and supports the idea that violence exposure can be cumulative for youth across multiple settings. Notably, class 2, for which membership was associated with higher pre-institutional hostility and violence exposure, was also the class with the highest reported sanctions. This result suggests pre-institutional violence exposure and hostility could put youth at risk for increased behavioral problems in justice settings, leading them to receive more sanctions. Such a finding is fitting with prior research which has shown connections between violence exposure and delinquent behaviors (Mrug & Windle, 2010; Wilson et al., 2009; Moffitt, 2013; Flannery et al., 2007; Barnert et al., 2016; Abram et al., 2004; Martin et al., 1998; Wilson et al., 2009; Mohammad et al., 2015; Foster & Brooks-Gunn, 2009). The current study further shows such behaviors associated with previous violence exposure continue within secure justice settings.

Aim 3: Post-Release Offending Behaviors

Results of hierarchical regression analysis did not support the hypothesis that institutional experience profiles would predict offending outcomes beyond the effects of demographic and pre-institutional control variables. Multiple control variables were significant predictors of post-release offending. Increased pre-institutional violence exposure was predictive of both increased general offending frequency and increased aggressive offending variety post-release. Male gender predicted increased aggressive offending variety, and being of Black/African American

race predicted decreased aggressive offending variety. The finding of pre-institutional violence exposure predicting post-release offending is unsurprising, as previous literature has consistently found violence exposure to be a predictor of delinquent behaviors (Mrug & Windle, 2010; Wilson et al., 2009; Moffitt, 2013; Flannery et al., 2007; Barnert et al., 2016; Abram et al., 2004; Martin et al., 1998; Wilson et al., 2009; Mohammad et al., 2015; Foster & Brooks-Gunn, 2009). Males being at higher risk for criminal behavior in general compared to females is also a pattern which has been consistently observed over time.

The finding that African American youth reported a lower variety proportion score for post-release violent offending variety was unexpected as previous research with this dataset has found no differences in overall offending behaviors by race (Piquero & Brame, 2009). To be clear, the current study finding specifies that at the follow up after release from an institution, African American youth reported less variety in violent behaviors as compared to other racial groups. This could mean that after release, African American participants are engaging in fewer violent acts or in only certain violent acts, while offenders of other races are engaging in a greater variety of violent acts. Since this analysis was only examining the first follow up after release, this difference could also be reflective of racial disparities in post-release supervision. Past studies have found that African Americans are more likely to be on probation or parole compared to Caucasians, and are also more likely to have their community supervision revoked (Bradner et al., 2020). Thus, it is possible some of the racial difference seen in post-release violent offending is because African American youth are less willing or able to take risks with a variety of violent behaviors due to a high threat of having supervision revoked. Another potential explanation for this finding could be related to disproportionate representation of African American non-violent offenders in institutional settings in comparison to other racial groups.

Data from the Pennsylvania Juvenile Justice Task Force (2021) found Black Non-Hispanic males were more likely than other demographic groups to receive out of home placements, even for misdemeanor offenses. The racial differences observed in the current study could be resulting from similar disparities, such that some of the Black participants are institutionalized for less severe offenses to begin with, and are therefore less likely to reoffend with violent offenses. Overall, the regression analyses suggest demographics and previous exposure to violence are better predictors of reoffending than patterns of experience during institutional stays.

Similar to regression findings, the survival analyses revealed institutional experience was not a predictor of time to reoffense or rearrest beyond the effects of control variables. Again, demographic and pre-institutional measures were better predictors of time to re-offense and rearrest than institutional experience. Participants who were younger at the time of their release from an institutional stay were quicker to reoffend and get rearrested than youth who were older at their release. This finding supports previous literature findings that younger adolescents are more likely to reoffend, and offending behaviors often decrease as youth age into adulthood (Becker et al., 2012; Aalsma et al., 2015). Males also reoffended and were rearrested more quickly than females, which also supports previous research findings showing males are at higher risk for recidivism (Minor et al., 2008). Additionally, pre-institutional violence exposure was again a positive predictor of increased risk for re-offense and rearrest. As stated previously, this finding is not surprising as prior studies have shown exposure to violence is a common predictor of delinquency and offending (Mrug & Windle, 2010; Wilson et al., 2009; Moffitt, 2013; Flannery et al., 2007; Barnert et al., 2016; Abram et al., 2004; Martin et al., 1998; Wilson et al., 2009; Mohammad et al., 2015; Foster & Brooks-Gunn, 2009).

The lack of significant associations between institutional experience profiles and offending outcomes is somewhat surprising as studies with adult offenders have found a connection between incarceration experiences and re-offending (Jolliffe & Hedderman, 2012; Boxer et al., 2009). Prior literature on the effects of juvenile confinement have suggested institutional experiences can negatively affect youth behavior as well (Dierkhising et al., 2014; Schubert et al., 2012). In the current study, institutional experience profiles were associated with re-offense, but not beyond relevant covariates. This finding may be reflecting a similar pattern as can be seen in adult literature, in which more serious or violent adult offenders are placed in harsher prison settings (Drago et al., 2009), and are therefore at greater risk of re-offending already. The current study findings still suggest institutional experience could be relevant to reoffending, but there may be more complex interactions between pre-institutional variables and institutional experience. For example, negative institutional experiences may serve as mediating variables which, when present along with certain predispositions such as prior trauma, could increase the risk of reoffending. Further, a previous study with the Pathways to Desistance data and the full sample of participants did find increased sanctions overall to be a predictor of reoffending at one year post release (Schubert et al., 2012). Thus, it appears significant associations are seen when examining individual factors of institutional experience separately rather than together.

Aim 3: Post-Release Mental Health

Results of hierarchical linear modeling showed no significant variation in slopes. Therefore, attempting to predict slopes was not warranted. Thus, the current study was unable to examine whether differences in institutional experience predicted differences in mental health trajectories after release, and hypothesis 3c was not supported. The lack of significant finding

may reflect the complexity and/or severity of mental health symptoms for justice-involved youth. Unconditional hierarchical linear models in the current study found an increase in several mental health symptoms over time, but no significant differences in these trajectories across participants. This may in part be because youth simply did not report many symptoms, either due to not having psychopathology or not having the types of psychopathology measured by the BSI. While justice-involved youth also have increased rates of internalizing symptomatology compared to their community peers (Winkelman et al., 2017), some of the most common disorders in juvenile justice populations include disruptive behavior, conduct, and substance use disorders (Teplin et al., 2002; Vermeiren et al., 2006), which are not measured as well by the BSI. A lack of difference in symptom trajectories over time also may reflect youth who have gradual increasing symptoms as measured by the BSI and do not generally experience reductions in their symptoms over time. Such a pattern is supported by literature showing youth released from detention often have long-lasting mental health symptomatology (Teplin et al., 2012). Further, the current study only tested a linear model of symptom trajectories, and it is possible that participants' mental health symptoms followed a non-linear trajectory.

Overall, the Aim 3 hypotheses which posited that institutional experience would be predictive of post-release behaviors and symptom trajectories was not supported by results. Instead, pre-institutional experiences and demographic factors tended to be better predictors of later behaviors, and symptom trajectories did not vary across participants. These findings are not especially surprising. After all, pre-institutional experiences and demographics are relevant for a longer period of participants' lives than the experiences they have during institutional stays. However, findings of the current study do not necessarily mean institutional stays have no effect at all on youth. While the inclusion of latent profile analysis was a strength for understanding

patterns of institutional experience, it is possible that individual experiences rather than clusters or patterns of institutional experiences may be better predictors of post-release symptoms. Further, institutional experiences may affect youth in more complex ways beyond the limited outcomes measured in this study.

Strengths and Limitations

The current study has several strengths which make it a positive addition to existing juvenile justice literature. First, the use of latent profiles to better understand subsets of youth institutional experiences is important, as previously most literature on juvenile institutional experiences has simply focused on prevalence rates of different experiences. A person-centered approach such as profile analysis is a valuable tool for individualizing support services for justice-involved youth. The current study finding that youth high in hostility and prior trauma are likely to experience higher sanctioning and institutional violence exposure could better prepare institutional staff and mental health providers. For example, if some youth are at increased risk for victimization, institutional staff could take steps to decrease violence exposure such as increasing supervision. Similarly, mental health interventions could be used to treat behavioral disorders with accompanying hostility with the aim of decreasing acting out behaviors and the use of high levels of sanctioning in certain youth. Another strength of the current study is the examination of both pre-institutional and post-release factors. Results were able to uncover not only factors that predict institutional experience, but pre-institutional factors that predict offending and rearrest. One such important connection is the one between violence exposure and offending. The current study provides further support of this association, which has implications for public policy, juvenile justice organizations, and treatment providers.

One of the main limitations of the current study is the use of only self-report data on institutional experience and offending behaviors, as findings are vulnerable to shared method variance. In addition, the current study data was collected in the early 2000's. Therefore, findings cannot represent what is happening in modern juvenile facilities, as efforts to reform the juvenile justice system over the past 10 to 15 years have likely affected youth institutional experiences.

Another limitation of the current study was the lack of measurement of participant behaviors while in institutions. While the current study aimed to focus specifically on reported experiences of the youth, inclusion of their reported behaviors (e.g., participant perpetrating violence against peers or staff while detained) could have been useful in identifying connections between violence exposure, hostility, and the frequency of sanctions received in institutional settings. An objective measure of youth rule violations could have also provided a more detailed picture of the reasons for and fairness of various sanctioning practices. Notably, some of the sanctioning practices reported in this sample are exceedingly harsh and inappropriate no matter the rule violation (e.g., beaten by staff). Such excessive punishments or even simply those that are perceived as unfair may have additional or unique effects on youth mental health and behavior.

As discussed above, some of the institutional experience variables, such as free/unstructured time could provide stronger and more nuanced information about institutional experience if defined more specifically. Similarly, the use of medication may have been perceived differently by different participants. It is unclear from the original study data whether the medication sanction variable was representing scenarios in which physical force was used to administer medication, what type of medication was administered, or whether any medication youth perceived as a sanction was prescribed emotional or behavioral problems. Notably, data

from the Pathways to Desistance codebook indicates over 80% of the release interview data collected represented participants who were not taking prescribed medications for emotional or attention problems prior to their institutional stay nor starting new medications during their stay. Thus, the medication sanction may not reflect prescribed medications for most youth, as the majority of participants were not taking prescribed medication. Further study of justice-involved youth perceptions of medication as a sanction could be especially useful in understanding the class 3 (peer victimization/medication) youth found in this study.

An additional limitation in relation to aim 2 was in examining the role of gender and sexuality in institutional experiences. While both males and females were included in the original dataset, there was not any coding of gender identity or sexual orientation at the time of data collection. Previous research has found individuals with transgender identities and males with perceived feminine mannerisms are at increased risk of victimization in institutional justice settings (Jenness et al., 2010; Man & Cronan, 2001). The current study is missing a representation of these populations and therefore also missing the ability to replicate and examine nuances in any associations between gender identity, sexuality, and institutional experience in juvenile justice.

Another topic not considered in the current study is the potential difference in institutional experience of adolescents transferred to the adult court system compared to those who remained in the juvenile system. Past research with this sample suggests few adolescents sentenced in the adult system were able to desist from offending behaviors (Schubert et al., 2010). Understanding institutional experiences and post-release associations in this specific subgroup would be a worthwhile area for future study.

The examination of mental health outcomes in the current study was also limited in that only a brief set of symptoms, which were mostly internalizing symptoms (e.g., depression, anxiety, interpersonal sensitivity, somatization), were examined. It is possible that the current study findings on mental health symptomatology were limited by not including a broader measure of symptoms and/or specific measures for disorders commonly seen in juvenile justice populations, such as behavioral and substance use disorders (Teplin et al., 2002; Vermeiren et al., 2006). A final limitation of the current study is the use of only linear modeling of mental health symptoms post-release. Such an approach assumes mental health symptom trajectories would be linear for justice-involved youth, which may not be the case.

Implications and Future Directions

Results of the current study indicate differing patterns of experience among youth in institutional justice settings. Certain institutional experiences tend to hang together, such as increased violence exposure and increased sanctioning. Furthermore, institutional experiences are associated with pre-institutional factors. In particular, increased pre-institutional violence exposure and hostility were associated with patterns of institutional experience that involved increased violence exposure and sanctions. Such findings support the ideas behind importation theory (Thomas, 1977) and the ecological stress process approach (Foster & Brooks-Gunn, 2009), which highlight the role of prior trauma and psychological functioning in the experience of stressful settings.

There are several areas of exploration in future research that could be inspired by the current study's findings. As mentioned above, the direction of the relationship between increased violence exposure and sanctioning in institutional settings cannot be determined from the results of this study. In institutional environments increased violence between residents could lead staff

to sanction residents more often (e.g., being punished for fighting). Conversely, being in a higher stress environment with a greater threat of violence from peers and staff plus the threat of strict sanctioning practices could contribute to greater misbehavior and violence amongst residents. The potential reciprocal relationship between these variables was not examined in this study, but could be an interesting area for future research. Another area for future exploration with policy implications would be to better understand fit or match between individual adolescents and types of justice settings. Adolescents may be placed in certain settings due to criminal background and health factors. For example, a recent study on juvenile justice placements in Montana found youth with felony offenses and mental health or substance use diagnoses were more likely to be placed in correctional rather than residential settings (Bunch et al., 2021). However, it is not clear from the current literature which settings may minimize psychological dysfunction and re-offending for which justice-involved youth. Being in a setting that is mismatched to needs could be detrimental to mental health functioning and behavior, and matching youth appropriately could increase positive outcomes post-release.

As discussed, the current study did not explore more complex relationships between pre-institutional variables, demographics, and institutional experience. Future research in this area could build upon the current study by examining moderation and mediation effects between demographic factors, pre-institutional variables, and institutional experiences. Further, examining specific institutional experiences rather than patterns as predictors of behavior and psychological functioning could also be useful, as there may be certain experiences which are more impactful on youth behavior and mental health. In addition, the current study only attempted to understand linear mental health trajectories of justice-involved youth, and the patterns of mental health symptoms may be much more complex in this population. Future

studies could improve understanding in this area by utilizing more complex statistical techniques such as growth mixture modeling. These techniques could shed light on whether there are various classes of trajectories (e.g., linear, curvilinear) instead of only focusing on linear trajectories.

Although the profiles of institutional experience found in this study did not predict post-release outcomes beyond pre-institutional factors, prior research indicates institutional experiences have some impact on offending after release when broader institutional factors are considered. For example, a previous study with this dataset examined twenty different institutional factors, several in addition to the current study (e.g., staff behaviors, supportive adults in the institution, perceived fairness and bias, antisocial peer influences, services in the institution and re-entry planning), and found a greater positive perception across more factors of institutional experience was associated with decreased probability of system involvement and antisocial behavior after release (Schubert et al., 2012). The authors of this prior study also noted institutional climate or the affective tone of the institution as having a potential impact on youth experiences of their justice-involvement (Schubert et al., 2012). Another study with this population found more positive perceptions of institutional fairness predicted increased feelings of safety within the institution, which in turn was associated with less sanctions (Lujan & Faniff, 2018). Findings from both studies highlight the influence of institutions on justice-involved youth during their stay as well as after release, suggesting juvenile justice reform remains an important and necessary endeavor.

Findings have implications for institutions working with adolescents and clinical work with justice-involved youth. The high prevalence of institutional violence exposure seen in the current study is alarming, with just over 80% of youth being exposed to violence in justice

institutions. However, results also showed a much lower percentage of youth reported being victimized (23%), which suggests if institutions were able to identify and prevent victimization of those youth, then the violence exposure others are exposed to via witnessing would also decrease substantially. Further, while study results do not suggest any certain profile of institutional experience was associated with increased offending, it is notable that profiles were not associated with decreased offending either. This suggests, similar to some prior adult prison studies (e.g., Chen & Shapiro, 2007), that harsher institutional environments do not rehabilitate youth on a path to reoffending or deter future criminal behavior. Juvenile justice reform in recent years has focused on how to make the justice system more effective in light of adolescent developmental considerations such as adolescents being less able to regulate behavior when under the influence of strong emotions, being more sensitive to external influences such as immediate rewards and peer influences, and being less able to take into considering long-term consequences of their choices (The National Academies, 2014). With these developmental limitations considered, one way to increase safety and positive perceptions of juvenile justice institutions would be to continue to lessen the punishment driven focus and shift more to reward-based systems. Especially among youth with increased defiance, motivating through positive reinforcement tends to be more effective than punishments in increasing positive behaviors (Pardini & Lochman, 2003). Effective reinforcement for positive behavior in institutional settings can begin with or include material reinforcements, but nonmaterial reinforcers should also be used for adolescents in order to increase internal motivation for positive behavior over time (Mathys, 2017). For example, youth in institutional settings may earn additional privileges for positive behavior (e.g., following rules, lack of violations) such as increased free time, access to fun activities, or “tokens” to spend on desired activities or items. Over time, development of

other motivating factors such as positive praise from adults they have built rapport with or progress toward goals they have set for themselves can be nonmaterial motivators for prosocial behaviors as well. As prior research suggests institutional climate plays a role in youth perceptions of institutions (e.g., Schubert et al., 2012), ensuring adequate training and positive interactions among the staff working with youth is also highly important.

Lastly, current study findings have implications for public policy. As has also been highlighted by previous literature, violence exposure is associated with increased stressful experiences within institutional settings as well as later re-offending behaviors in youth. Thus, finding ways to decrease violence exposure in the lives of youth could go a long way toward preventing legal involvement and institutionalization in the first place. Again, pulling from the ecological stress process model (Foster & Brooks-Gunn, 2009), it is of utmost importance to target family, community, and other societal factors to decrease violence exposure in the lives of youth. Importantly, prior research also speaks to the power of aftercare and re-entry planning in helping youth avoid re-offense (Schubert et al., 2012). Institutional justice settings are temporary placements for youth, and their level of success in avoiding future criminal behavior will also depend upon the supports they are given upon re-entry into their communities.

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VITA

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