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**Youth in Adult and Juvenile Correctional Facilities:
Comparison of Services and Behavioral Management**

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ABSTRACT

The majority of US states maintain various mechanisms to waive juvenile court jurisdiction to criminal courts. Nationally, more than half of convicted youth are sentenced to incarceration. Given contemporary efforts to prevent adolescents from experiencing the negative consequences of incarceration, it is critical to empirically assess and document the impact of juvenile transfer. Relative to sentencing outcomes and recidivism of transferred juveniles, evidence regarding their institutional experience is lacking. This study sought to fill this knowledge gap by examining the experiences of teenage inmates in the prison system of a Midwestern state. To this end, institutional records, demographics, and profiles of inmates admitted to state-run adult and juvenile systems from 2011–2014 were retrieved. The data consisted of three groups of approximately 2,400 individuals sampled by age and institution: teenage inmates housed in an adult prison, teenagers housed in juvenile residential facilities, and young adults housed in an adult prison. Samples were matched in terms of demographics, risk, and other covariates related to the odds of program participation and official reports of misconduct.

Based on the founding principles that govern the juvenile and criminal justice system, teenage inmates are expected to fare poorer in terms of treatment program involvement and officially reported misbehavior in the criminal justice system. Propensity score analysis results and weighted regression models have partially supported this hypothesis. Compared with young adult inmates, teenage inmates are not limited in access to institutional programs. Moreover, they are more likely to be involved in programs that target reducing criminogenic needs relative to offenders of the same age in juvenile residential facilities. Nonetheless, the teenage inmate group confined in the adult prison exhibited the highest involvement in

misconduct based on official reports, even after controlling for between-group characteristics. The findings are discussed in light of correctional policies and practices for transferred and incarcerated youth.

TABLE OF CONTENTS

CHAPTER 1.....	1
STATEMENT OF PROBLEM.....	1
Difference between juvenile and adult correctional facilities	2
Experience of youth in adult correctional facilities.....	6
Current study.....	9
CHAPTER 2.....	11
REVIEW OF LITERATURE.....	11
Incarcerating youth in adult correctional facilities.....	11
Experience of juvenile offenders in juvenile and adult correctional facilities.....	12
Models of justice and incarceration of juvenile offenders.....	20
Review of juvenile and adult correctional system in Ohio.....	25
Juveniles committed in adult correctional facilities in Ohio.....	25
General description of prison facilities under adult system in Ohio.....	27
Madison Correctional Institution.....	29
DYS facilities.....	30
Study objectives and contribution.....	32
CHAPTER 3.....	34
METHODOLOGY.....	34
Introduction.....	34
Propensity score weighting analysis through Generalized Boosted Modeling...	36
Data.....	40
Integrative data analysis.....	40
Ohio Prison data (Evaluation of Ohio’s Prison Programs).....	41
Ohio DMC Assessment data.....	42
Sample.....	43
Measures.....	45
Subsample description.....	45
Outcome variables.....	46
Control variables.....	48

Research questions.....	53
Analytic steps.....	53
CHAPTER 4.....	55
RESULTS.....	55
Introduction.....	55
Descriptive analysis.....	56
Research question 1.....	59
DRC youth offenders versus young adults.....	60
DRC youth offenders versus DYS juveniles.....	63
Comparability of samples (DYS subsample versus DYS full sample).....	66
Research question 2.....	67
DRC youth offenders versus young adults.....	67
DRC youth offenders versus DYS juveniles.....	69
Comparability of samples (DRC samples with and without identified needs)...	71
Research question 3.....	72
DRC youth offenders versus young adults.....	73
DRC youth offenders versus DYS juveniles.....	76
CHAPTER 5.....	80
DISCUSSION.....	80
Introduction.....	80
Summary of key findings.....	81
Findings from descriptive statistics.....	81
Research objective 1.....	82
Research objective 2.....	84
Research objective 3.....	86
Discussion of findings and implications.....	87
Limitations and future research.....	94
Conclusion.....	95
REFERENCES.....	97
Appendices.....	105

LIST OF TABLES

Table 3-1 Combined information and underlying concept of integrated measures.....	52
Table 4-1 Distribution of covariates and statistical difference with DRC youth group ...	58
Table 4-2 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and young adults.....	61
Table 4-3 Group means of outcome variables, unweighted and weighted differences in the means of DRC youth offenders and young adults.....	62
Table 4-4 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles	64
Table 4-5 Group means of outcome variables, unweighted and weighted differences in the means of DRC youth offenders and DYS juveniles.....	65
Table 4-6 Estimates of covariates and test of difference across analytic and full samples of DYS juveniles.....	66
Table 4-7 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and young adults.....	68
Table 4-8 Group means of outcome variable, unweighted and weighted differences in the means of DRC youth offenders and young adults.....	69
Table 4-9 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles.....	70
Table 4-10 Group means of outcome variable, unweighted and weighted differences in the means of DRC youths and DYS juveniles.....	71
Table 4-11 Estimates of covariates and test of difference across analytic and full samples of DRC young adults.....	72
Table 4-12 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and young adults	74
Table 4-13 Group means of outcome variables, unweighted and weighted differences in the means of DRC youths and young adults.....	75
Table 4-14 Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles.....	77
Table 4-15 Group means of outcome variable, unweighted and weighted differences in the means of DRC youths and DYS juveniles.....	78
Table 4-16 Group means of outcome variable, unweighted and weighted differences in the means of DRC subsample and DYS juveniles.....	78

CHAPTER 1

STATEMENT OF THE PROBLEM

A juvenile defendant who has reached a certain age could be transferred from the juvenile court to the adult court through a mechanism called Bindover or Transfer. Transfer laws allow for the criminal prosecution and incarceration of youth in the adult correctional system, which takes on a more punitive approach than the juvenile justice system. In Ohio, 81 percent of youth who were transferred to adult court were sentenced to serve an adult sentence in 2014. Among these cases, more than half received a sentence of five years or more in prison. In the same year, out of 4,674 youth who were adjudicated for felonies, 439 were committed to juvenile facilities. Comparatively, 158 youths were transferred to adult court (Children's Law Center, 2015; Ohio Department of Youth Services, 2015).

There are multiple mechanisms that permit the incarceration of juvenile offenders in adult prisons. Most states allow jurisdiction for the juveniles to be waived to the adult court in the event of prosecutor's request (prosecutorial waiver), judge's decision (judicial waiver), or legislative demand (legislative waiver). These mechanisms were introduced to impose greater punishment on juveniles. In fact, the transfer system is the primary mechanism that teenage offenders are sent to the adult prison, where access to treatment and programs appropriate for adolescent developmental stage may be lacking.

National data on the sentencing of youth transferred from the juvenile to adult court indicate that more than 50% of transferred and convicted youth were sentenced to terms of incarceration. Most of these terms exceeded those that would have been imposed if the youth were processed in the juvenile justice system (Brown & Langan, 1998). Although many states currently employ initiatives to reduce the use of transfer, most currently maintain various

mechanisms to waive the juvenile court jurisdiction to the criminal court and continue to send juvenile offenders to adult prisons (Furdella & Puzzanchera, 2015). Despite the critical nature of the adolescence period on later life-course outcomes, a systematic understanding of transferred youths' experiences in adult prison is still lacking. This study will assess the experiences of youth transferred to the criminal court and sentenced to adult prison by comparing their experiences with relevant groups of the same age and who share the same correctional setting. Most importantly, this study examines the impact of incarceration in adult facilities on adolescents by comparing multiple groups of similarly aged individuals placed in different facilities under a single state legal system.

Difference between juvenile and adult correctional facilities

The juvenile justice system and the adult justice system rely on different sets of principles. A separate system for juveniles emerged in response to evolving notions of adolescence. Juveniles have come to be recognized as more impulsive and more susceptible to peer influence, making them less culpable than adults. At the same time, young offenders were considered to be more malleable to change. Therefore, it was important that the system played the role of parents by providing proper discipline and a therapeutic environment. This new idea of juvenile delinquency gave rise to introduction of the juvenile court in which the best interests of child could be prioritized over achieving just deserts (Bernard & Kurlychek, 2010; Butts & Mitchell, 2000).

Although the degree of emphasis has swung back and forth over time, the juvenile justice system has consistently placed greater focus on providing individualized and rehabilitative care for young offenders compared to those in the adult system (Mack, 1909; Monahan, Steinberg, & Piquero, 2015). These guiding principles were extended to post-trial

stages including serving the sentence in correctional institutions. The social reformers in the late 19th century were concerned that delinquent children were often housed with adult criminals. In those correctional facilities, juveniles not only lacked access to treatments that they needed, but also received criminogenic influences from older offenders (Tanenhaus, 2004). As a result of reform, distinct systems of juvenile institutions were established to prevent contact with adult offenders as well as to provide better programs. In these institutions, rehabilitation is given greater emphasis over other goals of punishment such as retribution and incapacitation. These facilities are designed to address the various needs of young offenders in a developmentally appropriate way.

As a result of these differences, juvenile and adult facilities vary in terms of management style, range of service, and manner of discipline. In addition to holding the offenders accountable for their wrongdoing, juvenile correctional facilities attempt to minimize the disruption to normative development by promoting positive change and using less punitive terminology. Additionally, programs and treatments are designed to enhance age-appropriate skills, and the staff attempts to mirror the interactions that occur in schools or the community (Mulvey & Schubert, 2012).

In contrast, adult correctional facilities focus primarily on retribution and control (Forst, Fagan, & Vivona, 1989). Adult prisons serve the most fundamental purpose of punishment through incarceration: retribution. The primary intention is to inflict psychological deprivation proportionate to the harm an offender caused to society. Although adult prison programs also promote cognitive and behavior changes to help with the successful reintegration of offenders into society, it is less likely that the correctional staff is educated well about adolescence (Leigey, Hodge, & Saum, 2011). Correctional staff also encounters practical challenges to

individualized services even though they are aware that additional treatment for juveniles incarcerated in adult facilities is needed (Reddington & Sapp, 1997). Relatedly, researchers have attributed the higher likelihood of recidivism among transferred youth to the lack of access to rehabilitative resources in the adult correctional system (Fagan, 2008; Griffin, Torbet, & Szymanski, 1998; Ng, Sarri, Shook, & Stoffregen, 2012).

The emergence of the juvenile justice system was based on new perspectives about childhood and adulthood. Adolescents were viewed as limited in the capacity of considering potential consequences and making sound judgements compared to adults (Howell, 2003). Research on childhood and adolescent development seems to agree that juveniles, as a population, are more impulsive and susceptible to peer influence, are more likely to take risks, and have a more fluctuating sense of self-identity. Thus, they are more malleable (Feld, 1999; Grisso, 1996; Scott & Steinberg, 2008; Steinberg & Cauffman, 1996). Adolescence is often described as a “turning point” in which different identities and opportunities that impact future outcomes are explored (Abbott, 1997; Arnett, 2000). Having the chance to explore self-identity, build healthy relationships outside the family, practice making independent decisions, and establishing role models are all critical during this period (Woolard, Odgers, Lanza-Kaduce, & Daglis, 2005).

Incarceration, either in the juvenile or adult system, inherently limits access to these opportunities. Being removed from one’s community inevitably leads to a disruption in normative development. Nevertheless, juvenile institutions are more aware of this issue and make deliberate attempts to reduce developmental costs (Mulvey & Schubert, 2012). For example, juvenile residential facilities are often called schools. They provide job-related education, maintain family ties, and teach skills to build relationships with peers, adult figures,

and partners in the long-term. These institutions usually manage control through trust, respect, and responsibility. Such skills are critical to not only becoming a successful adult, but they are also important in learning to avoid engaging in crime (Laub & Sampson, 2003). In contrast, adult prison provides a much tougher and more demanding environment in which discipline is managed in a coercive and formal manner. Violence is known to be higher in adult facilities, and it is harder to accomplish developmental tasks when one's safety is threatened. Therefore, compared to juvenile facilities, adult prisons are more likely to break down identities instead of fostering adaptive ones.

Previous studies noted that the experience of imprisonment could pose greater harm for young offenders than older criminals due to their developmental characteristics (Mulvey & Schubert, 2012; Schubert, Mulvey, Loughran, & Losoya, 2012). Adolescence marks the period of immature choice and malleable character (Scott & Steinberg, 2008). Most adolescent offenders naturally desist as they make transition to adulthood, and incarceration may hinder this process by not providing resources necessary to develop developmentally appropriate skills and relationships (Loeber, Farrington, & Petechuk, 2013). Furthermore, researchers point out these concerns can be extended to older adolescents and young adults who have committed more serious delinquency. Evidence indicates that development in psychosocial maturity continues into early adulthood (up to 24 years old), young adult offenders share more developmental characteristics with juveniles than older adults, and serious offenders are more responsive to treatments and services that are evidence-based (Howell et al., 2013; Lipsey & Wilson, 1998; Loeber et al., 2013; Steinberg, 2007). It is thus important to recognize that institutional settings become the environment for youth under development and will influence their future life trajectories. It is also important to acknowledge that being older than the legal age of minority

and having committed violence offense does not make someone completely immune from such influence.

Experience of youth in adult correctional facilities

Previous research on the effect of transfer on the future likelihood of offending has generally identified potential problems for youth. Scholars have compared the recidivism of transferred juveniles with those who remained under the jurisdiction of the juvenile court. Transfer increased the likelihood of recidivism (Bishop & Frazier, 2000; Fagan, 1996; McGowan et al., 2007) or did not have a significant deterrent effect (Jensen & Metsger, 1994; Loughran et al., 2010). The exact mechanism that might generate negative outcomes from transfer is unknown, but the potential reasons identified by Griffin and his colleagues are that the adult correctional system may lack age-appropriate services and support, expose youth to a higher likelihood victimization by other inmates and staff, and the fact that they are often isolated from their peer groups as well as other adult inmates (Griffin et al., 1998).

In accounting for developmental differences of juveniles in adult correctional institutions, two issues are generally taken into consideration: safety and management of juvenile offenders, and providing appropriate treatments and programs. The latter issue is especially challenging considering the fact that developmental needs cannot be met by simply adjusting existing adult programs and practices. Rather, it requires proactive efforts to make qualitative changes to the institutional structure (Woolard et al., 2005). In practice, such efforts are challenged by financial limits and organizational constraints, leading to difficulty in effectively managing this population (Austin, Dedel, & Gregoriou, 2000; Woolard et al., 2005).

Mulvey and Schubert (2012) suggest that adolescents do not “fit” with the environment of the adult correctional facility in that it fails to provide opportunities to develop social capital

and explore different identities. It also interrupts the normative developmental experiences of adolescents. Consistent with this argument, the existing literature indicates that youth in adult prisons are more likely to be sexually assaulted or beaten by staff (Beyer, 1997), to experience abuse and attempt suicide (Daniel, 2006), and thus are more likely to engage in misconduct (Kolivoski & Shook, 2016; Kuanliang, Sorensen, & Cunningham, 2008; McShane & Williams III, 1989).

Previous studies that compared the experience in adult and juvenile institutions have reported more positive perceptions of the latter option. The most direct investigation of youth in adult prisons occurred in 1989. Forst, Fagan, and Vivona interviewed a group of juvenile offenders transferred to criminal court and sentenced to a state prison between 1981 and 1984. A comparison group of juveniles who were confined in training schools was also interviewed. Perceptions of these two groups were compared in terms of five domains: staff assistance, case management, treatment, social climate, and victimization. Compared to their counterparts, youth in adult prison perceived the staff to be less willing to provide skills needed after reentry. They felt the experience was less helpful in achieving personal goals, and did not make them feel good about themselves. Case managers in juvenile facilities were found to be more helpful in explaining the consequences of rule-breaking, encouraging participation in programs, and providing counseling. Most importantly, educational and vocational programs in training schools were perceived to be more helpful in developing skills and meeting needs. In general, those in juvenile institutions perceived their environment to be more “fitting” with respect to building social networks and opportunities (Forst et al., 1989).

Bishop and her colleagues (1998) interviewed 49 teenage offenders committed in juvenile residential facilities and 46 from adult prisons in Florida. Transferred youth held negative

perceptions about adult system due to the lack of programs that address social or personal development and cynical attitude from the staff (Bishop, Frazier, Lanza-Kaduce, & White, 1998). Similarly, youths interviewed by Lane and colleagues (2002) thought intensive education and counseling provided in juvenile institutions were beneficial in helping them to stay away from future crime. In contrast, youths in adult institutions rarely reported the benefits of programs. They felt unsafe, disrespected by staff, and were aware of criminal socialization by older inmates (Lane, Lanza-Kaduce, Frazier, & Bishop, 2002).

More recent investigations reached similar conclusions. Fagan and Kupchik (2011) showed that teenage inmates in adult correctional facilities had higher levels of psychological distress and trauma despite wider ranges of institutional services and less frequent violence among inmates. The authors noted that adult facilities may not be taking full advantage of institutional services because of correctional inadequate attention and negative attitude from staff. Similarly, staff quality was the factor that most distinguished the experience in juvenile and adult facilities in Michigan (Ng et al., 2012). Youth in adult prison perceived that staff did not emphasize treatment enough, and youth had fewer opportunities to receive counseling and to meet doctors and were significantly more likely to want more counseling and medical service. Relatedly, Mears (2003) pointed to unnecessarily adversarial environment and increased threat to personal safety as unintended consequences of juvenile transfer.

Nevertheless, Mulvey and Schubert (2012) note that the empirical evidence is sparse and not yet conclusive with respect to harsher conditions in adult prison. In fact, some studies reached contradictory conclusions. A number of studies have found that the teenage inmates in adult facilities reported greater access to education and treatment services compared to those in juvenile facilities (Fagan & Kupchik, 2011; Kupchik, 2007). Another study of young offenders

in California found no difference in the victimization rates between the youth from juvenile courts and those from adult court. Furthermore, juvenile court youths engaged in more institutional offending than the adult court youth (Bechtold & Cauffman, 2014). These findings challenge the belief that transferred youth should be automatically separated from their age groups, and that adult prisons are inherently detrimental for youth. Thus, it is necessary to critically examine the degree to which the ideal of juvenile justice system impacts transferred youth in reality.

Current study

This study examines the experiences of teenage inmates in adult correctional institutions. Specifically, three groups of inmates are compared: (1) teenage inmates in adult prison, (2) young adults in adult prison, and (3) teenage inmates in juvenile institutions. These groups are compared in terms of access to treatment/educational programs and the manner of behavioral management in the event of institutional misbehavior.

Two data sources are used in the study: a collection of surveys and observations on inmates and programs in adult prisons versus juvenile residential facilities in Ohio. The prison data were collected between 2011 and 2014 and included information on prison facility, treatment and programming information, inmate characteristics and the institutional behavior of inmates. This dataset provides the samples for two of the three groups mentioned above: teenage inmates and young adults in adult prison. Specifically, 492 teenagers are included in the first sample, and young adult inmates (up to 24 years old) confined in the same facility constitute the second group. The second data source comes from the collection of the Disproportionate Minority Contact assessment conducted from 2010 to 2014. The data include a stratified, random sample of 1,514 youth confined in facilities under the Ohio Department of

Youth Services. Approximately four hundred juvenile offenders were used to constitute the third group: teenage inmates in the juvenile facility. These two data sources effectively provided both program- and individual-level data required in the study.

By systematically comparing the perceptions and experiences of these groups, the current study aims to explore how adolescents incarcerated in adult facilities fare. Comparisons will be made for two specific areas: (1) treatment/educational programs and (2) misbehavior and institutional management. This research seeks to gauge the relative impact of incarcerating youth in adult prison, the extent to which adult and juvenile institutions address criminogenic needs and misbehavior of teenage offenders.

This chapter introduced the importance of understanding the experience of youth in adult prison. Correctional experiences resulting from adult court on youth is instrumental in evaluating juvenile transfer policies. Consequently, Chapter 2 describes the differences between juvenile and adult correctional facilities in light of the models of justice that govern each system. Chapter 3 outlines the research questions and presents an overview of the data, samples, and statistical procedures. In Chapter 4, three research questions were answered using descriptive and multivariate analyses. Specifically, propensity score weighting models were employed to compare the experiences of youth confined in adult prisons versus juvenile facilities. Finally, the last chapter discusses the findings and implications of this study and makes suggestions for future research.

CHAPTER 2

REVIEW OF LITERATURE

Incarcerating youth in adult correctional facilities

There are multiple mechanisms that permit the incarceration of juvenile offenders in adult prisons. One mechanism that is responsible for the greatest amount of incarceration is the transfer of a juvenile to an adult court. Jurisdiction over someone less than 18 years old initially falls under the juvenile court. At the same time, most states allow jurisdiction to be waived to the adult court in the event of a prosecutor's request (prosecutorial waiver), judge's decision (judicial waiver), or under a legal requirement (legislative waiver). These three processes allow individuals younger than the legal age of the majority to be tried in an adult criminal court. These mechanisms were introduced to impose greater punishment on juveniles. During the 1990s, an increasing concern about juveniles becoming more violent existed, and consequently, harsher sentencing options for juveniles were created and expanded (Howell, 1997).

Incarceration in an adult facility is the most serious outcome a transferred youth can face. The consequence of imprisonment is more complicated when transferred youth are placed with adult inmates. Among 107,000 individuals, who were younger than 18 and incarcerated on any given day, 14,500 of those were housed in adult correctional facilities in 1998 (Austin et al., 2000). The number of youths (younger than age 18) in adult jails increased by 35% (6,700 to 9,100) from 1994 to 1997 in addition to the youth population in adult prisons. From 1992 to 1996, an estimated 5,600 court admissions to adult prisons involved youth under 18 in 36 states. These numbers decreased during the early 2000s. On any given day in 2010, 7,600 youths were inmates in adult jails, and 2,800 youths were committed to adult prison systems. After a steady

decline, the one-day count of youth in adult prisons increased by 3% per year from 2004 to 2009 to almost 3,000 individuals in 2009 (Snyder & Sickmund, 1999, 2014).

According to a national assessment, there were 44 states that allowed incarceration of juveniles (age 17 and younger) in adult correctional facilities in 2000. The Juvenile Justice and Delinquency Prevention Act (JJDP) of 1974 requires that juveniles are separated by sight and sound from adult offenders at all stages of criminal justice process. The extent of compliance varies by states, and youth transferred to adult courts do not fall under the protection of this requirement. At the time of assessment, 18 states had separate housing units designated for juvenile offenders. Half of the youths were placed in dormitory settings while 30% were housed in single cells. By comparison, 43% of adult inmates were in dormitory settings, and 22% were in single cells. Twenty-two percent of the systems included in the study by Austin et al. (2000) had been planning to expand their juvenile offender capacity, and the application of the sight and sound separation rule has been broadened recently by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) to include juveniles in non-secure custody (Office of Juvenile Justice and Delinquency Prevention, 2014). Nevertheless, the sight and sound regulation still does not apply to youths processed as adults, and the number of youths in adult correctional facilities is not trivial.

Experience of juvenile offenders in juvenile and adult correctional facilities

Nationally, about 68% of the juveniles who are tried at the adult courts are sentenced to incarceration (Griffin et al., 1998). They may be confined in adult jails or prisons along with adult inmates. Other states house them in the juvenile facilities. There is a relatively small body of literature that directly compares the correctional experience of juveniles within adult correctional facilities. Most researchers have examined the experiences of youth in these

settings by contrasting the perception of youths in adult correctional facilities with varying sets of comparison groups. In general, the comparisons are made across juvenile versus adult systems, which typically rely on different philosophies and orientations. For most of the comparison studies described below, juvenile correctional facilities have taken on a more therapeutic approach, and the participants consistently reported positive feedback about them. At the same time, since the 2000s, the format of comparison has been expanded from a dichotomy to a continuum of the system. Earlier comparison studies framed the comparisons in juvenile versus adult terms, while later ones broadened the scope and examined the spectrum of systems. For example, comparing varying degree of juvenile institutions (low- versus deep-end) or including a hybrid type facility in the comparison contributed to the understanding of consequence of transfer. Each study is described below.

In the study by Forst, Fagan, and Vivona (1989), the first attempt to directly gauge the perceptions of youth in training schools and adult correctional facilities was described. Using the dichotomous distinction of treatment versus custody orientation of correctional systems, they predicted that correctional experiences would also be different across juvenile and adult systems. The comparison was made with respect to treatment or punishment across juvenile and adult systems, and accordingly, the juvenile institutions were predicted to be more treatment-oriented.

The purpose of this study was to examine the correctional experiences from the perspective of the consumers. Accordingly, the authors interviewed consumers of juvenile and adult facilities, namely, the youths in these facilities. The juvenile system sample consisted of 59 interviewees (mean age 15.7 years old) who were adjudicated for violent offenses and confined in training schools within urban cities. The comparison group consisted of an adult facility sample and included 81 youths (mean age 16.1 years old) who were transferred to the

criminal court and confined in state prisons. Overall, youths in training schools reported having received greater assistance from the staff, worked more closely with their case managers, received treatment programs that helped them meet various needs, and had more positive opinions about the social climate. The results generally fit the prediction that the responses about training schools would be more positive.

It is noteworthy that the greatest contrast was found in the perceptions toward goal orientation and the least contrast toward availability of opportunities. Staff members at the adult prisons were perceived to be less willing to help establish daily routines, to equip youths with knowledge about rules and procedures, and to encourage participation in different activities. The authors raised the concern for the youth in adult prisons, who are in fact, still in the process of physical and mental development yet lack access to the appropriate positive social environments. The authors implied that the benefits of retribution and public safety could be undermined by potential costs of impeding developmental trajectory of youth offenders (Forst et al., 1989).

Bishop and colleagues (1998) took a similar approach and interviewed the juveniles who were dispositioned in juvenile courts or who were tried at criminal courts as adults in Florida. In addition to asking about youth's perceptions concerning correctional experiences, this study asked about the potential impact of their experiences on their behaviors after they were released. The adult sample involved 46 male offenders who were processed in adult courts and either were serving or had finished their sentences in adult prisons. The juvenile sample came from two "deep-end" juvenile facilities ($n = 49$). These two facilities targeted high-risk and maximum-security level juvenile offenders and were selected with the aim of obtaining the sample with matching juvenile security level with the adult sample.

Again, the juvenile justice system was perceived to be more rehabilitative and therapeutic, whereas the adult system was seen as more punitive and negative. The juvenile system was often described to be “designed to be helpful and rehabilitative” and its actors to “promote good behavior” and “to talk in positive terms” (p.120). It is notable that perception was similarly positive when transferred juveniles were asked to recall their experiences in the juvenile system. The authors noted that their reactions toward the juvenile system were far from cynical or hostile. Also, most of the youth offenders who participated in one or more of the juvenile correctional programs found them to be beneficial. They confessed that through treatment and education in the juvenile system, they realized that they lacked both proper interpersonal and life skills. They responded that those programs would be the reasons that they remained prosocial after their release (p.126).

As expected, the authors found sharp differences in the perceptions about the adult system. The respondents reported negative perception by using expressions such as “derisive”, “cynical about my potential for change” or “hostile” (p.133). The youths understood that the main concern of staff members in adult prison was to maintain control and order rather than being helpful or positive. The perceptions markedly differed, especially among those who experienced both systems. In contrasting their own experiences in the adult correctional system with what they had witnessed in the juvenile system, the offenders favored the institutional atmosphere and staff attitude in the juvenile system. Youths who experienced both juvenile and adult prisons felt that fear and violence was more prevalent in adult facilities. Although some youths in adult facilities expected a positive future after release, they attributed the change to the pains of imprisonment rather than the benefits of treatment services (p.142).

Drawing on Florida’s juvenile facilities with varying security levels, Lane and

colleagues (2002) highlighted the advantage of comparing correctional experiences on a spectrum instead of relying on the juvenile-adult system dichotomy. They compared the “deep-end” juvenile facilities with more lenient options in the juvenile system in conjunction with adult sanctions. It is interesting that more respondents perceived the deep-end juvenile programs to be more beneficial and impactful on their attitudes and behaviors compared to both lower-end juvenile programs and adult prisons. The majority of respondents were sentenced for offenses against other people (68%) and had been arrested five or more times in the past (71%). They determined that lower-end programs were not intensive enough to induce behavioral changes in these offenders. On the other hand, only 20% of the youths provided positive ratings for adult prisons. Major complaints were related to lack of programs available for them, negative staff attitudes, and feelings of being unsafe. Consistent with findings of Bishop and colleagues, the perceptions of youths who went through both juvenile and adult prisons were more negative toward the latter. They reported it to be more retributive and made their situations worse.

A more substantial comparison of correctional experience can be found in the studies of Kupchik. His comparative studies utilized data from a state that implemented a blended approach in incarcerating transferred juveniles. The data consisted of the survey of 95 youths who were processed in adult courts and incarcerated in either juvenile or adult facilities. The age of the offender, rather than other factors, determined whether the sentenced youth was sent to a juvenile or adult facility. Individuals younger than 16 at the time of offense were committed to facilities operated by state’s children’s services whereas 16- to 21-year-old individuals were sent to the state’s department of corrections prisons. Given this legal context, it was possible to obtain samples with similar legal characteristics but which differed only with respect to age at the time of offense. As a result, the respondents’ different experiences could be attributed to

cross-system characteristics. Indeed, the facilities under each system carried distinct environmental conditions in terms of population size, staff-inmate interactions, education and counseling requirements, and inmate composition. The adult facilities were almost ten times larger in capacity (more than 1000 versus approximately 100), had a much greater inmate-staff ratio (17:1 versus 2:1), and did not completely separate teenage inmates from older inmates. Education or counseling was not required in the adult facilities, and the median sentence was much longer for juveniles in the adult facilities than for the residents of juvenile facilities (Kupchik, 2007).

Self-reporting by the juvenile facility inmates about their facilities was more positive and thus confirmed previous observations. Ratings for staff mentorship and fairness indices were greater for juvenile institutions. Juvenile facilities were better at facilitating staff involvement in problem-solving, counseling, decision making, and goal setting for the inmates. Higher average scores on the fairness index implied that inmates in juvenile facilities perceived that the staff to be fair with all residents, the staff would notify them personally about their good deeds or wrongdoings, and the staff would help when inmates needed to solve a special problem (Kupchik, 2007).

These results were further supported in a more recent study in which the marginal effects of incarceration in adult facilities above juvenile facilities with varying degrees of punitiveness were examined. Fagan and Kupchik (2011) assessed the experiences in both a relative and absolute sense by using samples from two adjacent states in which similarly aged juveniles can be sent to either juvenile or adult facilities due to the differing ages of criminal responsibility. The purpose was to separate the perception toward adult correctional facilities from the distress associated with being transferred and processed in adult system. They interviewed 188

offenders who had been tried in juvenile courts and sentenced to juvenile facilities, those who were tried in the criminal courts and sent to juvenile correctional facilities, and those who were tried in the criminal court and sent to adult prisons. Youths in adult facilities gave significantly lower ratings for procedural justice and positive interactions compared to the other two types. They were also much more likely to feel threatened and in danger even though actual frequencies of self-reported crime and drug/alcohol use were the lowest in adult facilities. In fact, adult facility inmates also reported higher levels of psychological distress and fear (Fagan & Kupchik, 2011).

A noteworthy point found in both studies, however, was that adult institutions were rated higher for service availability. Youth inmates in adult facilities reported significantly higher ratings for having access to institutional services, including basic infrastructures, such as libraries, religious services, and/or other training and educational services. In fact, a greater proportion of inmates were assigned a caseworker, received counseling, and participated in drug treatment in adult facilities (Kupchik, 2007). Likewise, ratings of institutional service availability by far exceeded those of juveniles both in blended juvenile institutions and traditional juvenile institutions (Fagan & Kupchik, 2011). Although the likelihood of attending school was highest for the transferred juveniles in juvenile facilities, the satisfaction toward schooling services was greatest among adult facility respondents. Not losing sight that juvenile facilities provide a better option to learn for teenage offenders, these studies highlighted the possibility that treatment and services can mitigate the negative experience in adult facilities.

Together, these studies suggest that treatment and programs critical factors in shaping overall correctional experiences of incarcerated youth. Youths who expressed the confidence of staying away from future crime after release in a study by Bishop et al. (1998) attributed the

source of confidence to the programs they received within the facilities. Also, in a study by Lane et al. (2002), youths, who had been in less intensive programs and indicated that deep-end programs were more helpful, believed they were most influenced by educational opportunities, vocational training, and treatment services that addressed their issues. Those who actually reported to have more positive experiences in adult prison came from one jurisdiction in which juvenile system programs were adopted in adult sanctions.

Nevertheless, the results from studies by Kupchik (2007, 2011) suggest that merely providing a greater number of services does not significantly improve the actual experience. The actual usage and relevance of the programs might actually be more indicative of service satisfaction than the number of services. For example, among 98% of the respondents who were assigned a caseworker at the adult facilities, only 11% answered that they actually interacted with the caseworker often. This finding is in contrast with the experience of juvenile inmates in the juvenile correctional facilities in which 93% of the respondents answered they met with their caseworkers often. These results highlight the importance of looking beyond the program availability and investigating the actual participation in services and the developmental relevance of these programs for youths.

In fact, the most recent comparative research focused extensively on service variables. Ng and colleagues (2012) compared the experience of 47 juveniles in juvenile facilities from that of 49 juveniles in adult facilities in Michigan. Instead of taking a matched sample, the authors introduced various control variables for estimating the likelihood of obtaining different cross-system services. Holding offense characteristics, family background, mental health issues, and demographics constant, being incarcerated in adult institutions reduced the probability of participating in work programs. Youth in adult prisons have also been reported to have received

less counseling and medical service even though they wanted more. Although these youths did not differ significantly with respect to the likelihood of receiving educational programs or the quantity of education, the specific programs that were provided differed qualitatively. That is, juveniles in adult institutions were primarily involved in vocational programs that were specifically tied to the prison work assignments, and general educational development (GED) programs largely relied upon self-study. In contrast, educational programs in juvenile institutions contained high school- and college-related contents (Ng et al., 2012).

Last, a report by Lafree in 1999 makes an unique contribution by exploring the prevalence of disciplinary actions. Interviewees were juvenile violent offenders who were on probation or parole ($n = 193$), confined in juvenile facilities ($n = 211$), or incarcerated in adult prisons ($n = 86$) in New Mexico. Disciplinary reports were most prevalent among adult prison respondents. An average of 14.4 reports were filed in the adult system. This number was substantially higher than the prevalence found in the juvenile system (7.8) or among those on juvenile probation (1.9). Distinction in the most frequent type of write-ups was also found. The most common reasons for disciplinary reports in the juvenile system were assaults and fighting. On the contrary, refusal to obey an order was the most frequent charge in the adult system (Lafree, 1999). It seems that differential focus across systems is reflected in the enforcement of rules. As discussed in the previous section, the primary concern of adult prison is to maintain order, and it is possible that staff members in adult prisons will react more harshly over defiant juvenile-related attitudes.

Models of justice and incarceration of juvenile offenders

Differences in the confinement conditions described in the previous section could be understood in the models of justice that govern the juvenile and adult justice system. Owing to

the effort of progressive era reformers and cultural shift in the 19th century, the juvenile justice system relies on a separate model of justice that defines the philosophy and orientation of the system and punishment of the offenders. Adolescent immaturity is recognized in the juvenile justice system in two ways: (1) lenient punishment and (2) focus on rehabilitation (Bernard & Kurlychek, 2010). Relative to the criminal justice model upon which the adult system relies, the juvenile justice model places greater emphasis on providing appropriate treatment and reintegrating children back into the community. Consequently, case processing is less formal, and greater discretion is given to the decision makers in order to allow for individualized judgments (Kupchik, 2006).

These different models provide a useful framework for predicting the experience of youthful offenders in the adult correctional system and in assessing the impact of such experiences. If the models of justice can be applied to the correctional system, it is then reasonable to expect that the processes are formal with harsher conditions in the adult facilities, from which the founders of the juvenile court have tried to spare young offenders in consideration of the potential negative impact on these individuals.

Transfer is the point at which the juvenile and adult systems intersect. In cases in which there is the need for retribution and incapacitation, the assumptions of immaturity and reduced culpability associated with age are relaxed in the transfer decision. This process produces what Kupchik (2006) described as a hybrid “sequential model of justice” in the adult court (p. 2). Even though transfer renders the case tried in the criminal court with the criminal justice actors present, he found that the components of the juvenile justice model also played a role. The handing of transferred cases followed the criminal justice model in the initial proceedings, whereas consideration of reduced blame and immaturity, which constitutes the

traditional juvenile justice approach, appeared during the sentencing phase (Kupchik, 2007). The remaining question is then whether the same phenomenon would then be found in the correctional stage.

According to the principles of juvenile institutions that were first founded in the 1800s, youth facilities should be more therapeutic compared to adult prisons. As a whole, compared to the adult system, the juvenile correctional system tend to focus on rehabilitating youths. Specifically, juvenile facilities are smaller in size and maintain a smaller inmate : staff ratio (Hockenberry, Sickmund, & Sladky, 2016). Facilities with larger capacities have greater levels of misconduct, and younger inmates are more susceptible to facility-level crowding. It is possible that the relationship between negative emotion associated with imprisonment and misconduct is enhanced in larger, crowded facilities where inmate-inmate contacts and security demands are greater. Younger inmates, who usually hold weaker stakes of conformity than older inmates, seem to be more vulnerable to overcrowding (Franklin, Franklin, & Pratt, 2006; Wooldredge, Griffin, & Pratt, 2001; Wooldredge & Steiner, 2009). Such consequences can lead to psychological pains that negatively impacts attitudes, values, and social interaction (Adams, 1992; Sykes, 1958). The evidence is not clear whether being in a physically threatening environment is translated to behavioral maladjustment. What is known is that the suicide risk, misconduct rate, and victimization risk are often much higher in adult correctional facilities (Daniel, 2006; Kuanliang et al., 2008; Mumola, 2005; Parent et al., 1994).

Also, the management style in the juvenile correctional facilities is more supportive, fair, and helpful in the comparative studies reviewed above. In principle, juvenile staff are trained to use nonconfrontational methods and to resolve conflict in a peaceful manner (Austin et al., 2000). According to a national survey, approximately 90 percent of juveniles in juvenile

residential programs reported that they understood the facility rules, and 68 percent felt that rules were applied equally to all residents (Sedlak & McPherson, 2010). This contextual setting is critical because it can impact the development tasks of adolescents, especially on identity formation and role models. Adolescents reexamine their lifestyle, explore different possibilities, and ultimately form an identity they will adopt as adults (Erikson, 1994). This process is inherently interactive with other people and environmental settings. For non-delinquent children, school and community serve as the development settings. Prison or residential facilities become the learning context for incarcerated youths. An ideal setting should allow youths to receive emotional support, build healthy relationship with peers, and to have opportunities to make independent decisions (Monahan et al., 2015; Scott & Steinberg, 2008; Steinberg & Monahan, 2007). Researchers have cautioned that juvenile residential facilities do not provide ideal settings for this task (Chung, Little, & Steinberg, 2005). It is more questionable whether the adult prisons, which is even less concerned about positive development than the juvenile residential institutions, can provide any better environment.

Nonetheless, the degree of punitiveness is not clearly defined between these two systems. There is a continuum of punitiveness across models of justice. This expectation is especially true if the deep-end juvenile system is the point of comparison. Due to increased awareness on the harmful effects of incarceration on children, incarceration is the last resort for the most serious juvenile offenders. Residential facilities in the deep-end juvenile justice system are likely to be more restrictive compared to community-based institutions targeting low-risk adults. For example, juvenile residential facilities are not completely immune from the risk of removing the youth from their community and severing the ties with prosocial people they might have.

Likewise, there are a number of reasons that in reality, the models of justice could overlap across systems. First, a series of changes in the juvenile justice system occurred in the 1970s and 1980s. The Supreme Court decided that juvenile defendants were also entitled to the procedural rights granted in the criminal court (*In re Gault*), and subsequent transformations introduced to ensure due process for juveniles resulted in more adult-like juvenile justice system (Ainsworth, 1990; Feld, 1993). The juvenile court's view of juvenile offenders shifted from dependent, misguided youth to small criminals during the get-tough movement. An increasing number of juvenile courts set holding youths accountable for delinquent acts and protection of public safety as their core objectives. The juvenile system was more willing to increase restrictive measures in order to ensure public safety in response to the increase in crime (Howell, 1997; Howell, 2009).

Second, offenders bring in various needs and responsivities in each system. It is possible that certain juvenile delinquents require stricter structure in the correctional facility while nonviolent, first-time adult offenders respond better to non-restrictive correctional environment. As mentioned above, a deep-end juvenile facility may maintain a tighter security compared to a low-risk institution for adults. Third, there can be contextual influences that shape the implementation of stated goals. The perceptions of offenses and offenders interpreted by justice system officials, budget allocations, and opinions of the leadership can shape the actual implementation of those declared aims. Bernard and Kurlychek (2010) noted that there was a "great divide between good intentions and actual practice" (p.139) in which some juvenile facilities were not capable of achieving their treatment ideal due to overcrowding, staff turnover, and limited resources.

Last, the inherent nature of the transfer system creates the intersection of juvenile and

adult systems. The transfer system was introduced as part of the measures to increase punishment for juvenile offenders by sending them to the adult system. The intention is in line with what Singer (1996) termed as recriminalization. The consequence of recriminalization was to recreate the juvenile system within the adult system. In fact, a study by Kupchik (2006) found that case processing of juvenile defendants in the criminal court followed a sequential model of justice in which the traditional criminal justice model was used during the early stages, and juvenile justice orientations, such as reduced culpability and immaturity, were explicitly recognized during the sentencing stage. Despite such awareness, adult court decision makers were not able to reduce punishment due to limited sentencing options. Juveniles processed in criminal court were more likely to be incarcerated than their counterparts.

The practice of incarcerating teenage and adult offenders in the same prison has not been completely abandoned. This returns us to the inquiry mentioned at the beginning of this section: “To what extent should the juvenile justice philosophy be reflected at the correctional stage? Do adult prisons fully impose criminal justice orientation for the transferred youth? If so, what are the consequences?” The present study was designed to answer these questions by comparing the actual conditions of juvenile and adult correctional facilities in a large midwestern state.

Review of juvenile and adult correctional system in Ohio

Juveniles committed in adult correctional facilities in Ohio

Ohio juvenile court has jurisdiction over individuals who have not yet reached the age of 18 at the time their offense has been committed. The strictest sanction that can be imposed on traditional juvenile cases is commitment to the state youth services department for secure confinement (ORC 2152.16). Exceptions are made and delinquent youth can be sentenced to

adult facilities in two instances: transfer to adult court or blended sentencing.

Transfer to adult court was put into legislation in Ohio in 1996. Juveniles who have committed a felony or certain misdemeanors and were 14 years old or older at the time of offense can be transferred to the adult court after probable cause has been established at the first hearing in the juvenile court. Judges have the discretion to hold the second hearing and investigate the child further (ORC 2151.23) unless the nature of the alleged offense qualifies the conditions where the transfers are mandatory (ORC 2151.6). Additionally, Ohio mandates that once an individual was transferred and convicted of any felony, the individual is legally considered as an adult thereafter in criminal proceedings (ORC 2151.011). As a result, two types of juvenile offender populations are brought into the adult court through transfer: youth who committed a serious offense with aggravating factors and who cause serious threat to public safety and youth considered not to be amenable to treatment offered in youth services.

The blended sentencing system is another mechanism that leads to incarceration in adult facilities in Ohio. Under the condition that a juvenile offender who is 10 years old or older and committed a violent offense that involves the use of firearm, the juvenile judge is entitled to hand down Serious Youth Offender (SYO) sentence. SYO sentence includes both juvenile sentence and the adult sentence that can be enacted if the juvenile sanction alone cannot fully serve the purpose of punishment (ORC 2152.13). The exact number of youth who were committed to adult prison through blended sentencing has not been documented, but this mechanism works as an additional route that adds to the population of juveniles in the adult system.

Ohio is not considered to have the most punitive system of juvenile transfer. Among the 4,775 juveniles housed in state correctional facilities across the United States, Ohio was responsible for 3.3% of that population. Ohio was one of 44 states that maintained a separate

housing unit for juvenile inmates, and had proposed a plan to expand the capacity in a previous survey (Austin et al., 2000). Nevertheless, juvenile offenders are brought in to the adult correctional facilities in multiple pathways in which they spend significant amount of adolescence. From 2006 to 2015, a total of 2,564 juveniles were transferred to the adult court (Ohio Department of Youth Services, 2018). Among those who were transferred to the adult court in 2014, 81 % were sentenced to adult jail or prison. In the same year, more than half of youth who were committed to adult institutions received a sentence of five years or more (Children's Law Center, 2015). Sixteen percent of the youth who were transferred from 2000 to 2014 were sentenced to ten or more years in adult prison.

The consequence of these transfer and sentencing practices is the increase in the number and heterogeneity of juvenile population in adult prison. The type of crime that brought youth to the adult prison was diverse as the ones found in the juvenile court. Aside from aggravated robbery, robbery, and felonious assault, juveniles committed to the adult prison in Ohio from 2000 to 2014 included burglary, drug offense, firearm-related offense, property crime, and sex crimes. Other unspecified offenses involved more diverse misbehavior such as bribery, receiving stolen property, kidnapping, and tampering with evidence (Correctional Institution Inspection Committee, 2016). Only seventeen of 163 youth who reached the adult court were convicted of aggravated murder or murder in fiscal year 2013. The use of multiple pathways of transfer also raises the likelihood of putting first-time offenders in places that are not well-prepared for developmental needs of youth.

General description of prison facilities under adult system in Ohio

There were 28 (25 for male and 3 for female) institutions that housed 49,774 adult inmates during the time of data collection in 2012 (27 institutions as of April, 2018). These

facilities are under the supervision of the Ohio Department of Rehabilitation and Correction (ODRC). Upon intake, inmates are classified into six custody levels including death row, higher level indicating greater security requirements. The average age of inmates was 36 for male and 37 for female. Inmates stayed 2.03 years in prison on average. There were 11,991 staff including 6,394 correctional officers, making the inmate to CO ratio 7.1 to 1 in 2012 (Ohio Department of Rehabilitation and Correction, 2012b).

In 2011, the DRC created the Ohio Plan for Productive Offender Reentry and Recidivism Reduction (the Ohio Plan). The purpose was to better prepare prisoners for returning to the community after release. It was developed to establish more consistent communication between staff responsible for different stages of incarceration, to systematically track progress, and, most importantly, to promote and adequately implement correctional programs that adhere to the principles of effective intervention. Existing programs were reviewed based on the extent to which they target criminogenic risk and needs. Newly developed programs were required to incorporate the understanding of effective correctional programs. The programs that targets the reduction of dynamic criminogenic needs were designated as Reentry Approved programs, and were promoted over other programs that were not approved. Inmates who successfully completed certain reentry approved programs were less likely to engage in misconduct or to reoffend after release compared to the ones who did not complete any reentry approved programs. However, the effect differed by specific types of programs, and availability of programs varied substantially across facilities (Latessa, Lugo, Pompoco, Sullivan, & Wooldredge, 2015).

The inmate rule of conduct is defined and enforced by the Ohio Revised Code 5120.9. Inmates are forbidden from causing threats to the security of the institution, staff, visitors, or

other inmates, in the forms of assault, sexual violence, disturbance, or property violation. In the event of rule violations, an officer may issue a conduct report. The hearing officer, after reviewing the conduct report and interviewing the inmate if necessary, can either make informal dispositions or decide to refer the violation to the Rule Infraction Board (RIB) hearing. The RIB has the authority to determine guilt and impose dispositions.

Madison Correctional Institution

Madison Correctional Institution (MaCI) is a medium security facility housing primarily level 1 and 2 inmates (low-level supervision). The MaCI served sex offenders, medium-risk general population, and teenage inmates in a separate space at the time of data collection. The population at the time of data collection was 2,401 (June, 2011) which exceeded the design capacity of 2,167 inmates. The average age of inmate was 34.5 years, which was lower than the state average owing to its juvenile population. There were 514 staff (315 correctional officers) and an inmate-staff ratio of 7.6:1. This is slightly higher than the state average, but lower compared to other institutions that house inmates of similar security levels (Correctional Institution Inspection Committee, 2011).

In addition to security level 1 and 2 male inmates, the MaCI included two special populations in a distinct zone: juvenile offenders and sex offenders. At the time of data collection, all youth who were transferred and sentenced to incarceration in Ohio were housed in this facility. They are admitted through the Youthful Offender program and are housed in a closed compound separated from the sex offenders and general population. According to the interviews conducted by the Correctional Institution Inspection Committee¹, educational staff felt

¹ The Correctional Institution Inspection Committee is a division of legislative service commission in Ohio (ORC 103.71). Its core duties include, as outlined in ORC 103.73, evaluating the conditions of state correctional facilities in Ohio and providing suggestions and recommendations for improvement. Inspection covers various subjects such

that adult inmates were not receiving adequate levels of academic programming due to increased educational needs for the juvenile population (Correctional Institution Inspection Committee, 2011).

The housing units in the close compound, where medium security and juvenile inmates were placed, were single- or double- celled as opposed to a dormitory style. In particular, a single versus double cell depended on the level of crowding and the timing of an offender's incarceration history. These juvenile inmates were separated from contacts with adults. When they were moving or stationed in an area, the general adult population was not allowed in the same place. The Youthful Offender populations were moved to Correctional Reception Center from September, 2014. It is lower in population (1,565 inmates in 2015) and serves as a reception center for Southern region of Ohio (Correctional Institution Inspection Committee, 2015).

DYS facilities

The Ohio Department of Youth Services (DYS) oversees correctional facilities for juveniles in Ohio. The DYS facilities provide residential correctional service to juvenile offenders who committed felony and were ordered to be confined by juvenile courts. Youth are sent to one of the three facilities depending on the geographical location, security level, and special needs. The populations at DYS facilities are much smaller than DRC prisons. Rated capacity ranges from 144 to 280, and none of the facilities were overcrowded in 2012. The least occupied facility filled 56.4% of the capacity while the most occupied had 79.2% of the capacity. The number of staff exceeded the number of youth in all facilities. There were 228 to 290 staff employed at each facility, including unit managers, academic teachers, and youth

as safety and security of inmates, rehabilitative programming, and the fiscal health of the institution.

specialists.

Housing units are designed in a dormitory style. This is a substantial contrast from the adult prisons where cell unit styles are predominant, especially because all youth in the Madison Correctional facilities were incarcerated in single/double cells. Each unit had its bathroom, seclusion room, office space, and a youth specialist. Nearly all youth in DYS facilities rated the safety level as safe or very safe (Correctional Institution Inspection Committee, 2013a). According to a survey, youth felt that most staff treated them fairly, that they have never been mistreated, and staff interventions were made according to the DYS policy (Correctional Institution Inspection Committee, 2013a). The use of force was limited to exceptional circumstances where all other non-forcible measures were already attempted. There were 2,733 use of force incidents reported in 2013 (Correctional Institution Inspection Committee, 2013b).

Education is central to the operation of DYS facilities. Each facility maintains a high school, in which youths are enrolled within five days of admission. All eligible youths were receiving high school education at the time of data collection. Youth who are not eligible for classroom format education are considered for individualized education or GED. All youth are required to pass the state required exam in order to graduate or receive the diploma. The attendance rate was 87.7% across facilities, and youth earned 86 GEDs and 29 high school diploma during 2013-2014 academic year. All youth are required to participate in group sessions that are facilitated by a youth specialist or a social worker. (Correctional Institution Inspection Committee, 2014).

Institutional behavior is managed on an incentive-based system. The Strength Based Behavior Management System (SBBMS) rewards incentives and privileges to youth who demonstrates successful participation in program and follows institutional regulations.

Misconduct is handled formally by the Youth Behavior Incident Report (YBIR). The process is similar with the adult facilities in that a hearing is held to determine responsibility and consequences. However, the DYS system offers more extensive assistance throughout the hearing. A youth advocate meets with each youth before and during the Intervention Hearing (IH) to talk about the process and charged violation.

Study objectives and contribution

The previous sections have demonstrated that the juvenile and adult systems were established around different models of justice and the way in which these models are now reflected in sentencing and correctional stages. Taken together, these studies support the notion of potentially meaningful differences in correctional experiences between juvenile and adult residential facilities or prisons. The evidence shows in a fairly consistent manner that juvenile facilities provide more therapeutic correctional environments. On average, juvenile facilities did better in providing positive social climates. Juvenile facility staff were perceived to be more helpful, and inmates felt safer in juvenile facilities. Adult facilities, in comparison, emphasized incapacitation and retribution to the same level as rehabilitation, were larger in size, and held greater restrictive measures aimed at maintaining security. Consequently, perceptions toward correctional environments were generally favorable toward juvenile institutions.

Nevertheless, there are several reasons that the correctional experience of juvenile inmates must be further investigated. First, in more recent studies, the evidence that juvenile correctional institutions provide favorable conditions was less definitive. The distinction between juvenile and adult facilities was clearer in earlier studies in which juvenile facilities were described to be more positive in almost all aspects. The findings were mixed in more recent studies, such as Kupchik (2007), Fagan and Kupchik (2011), or Ng et al. (2012). In

these studies, youths incarcerated in adult prison were not disadvantaged in obtaining access to programs or sometimes even had greater access. It is necessary to examine whether such improvement in services in adult prisons is a notable change in the system or a limited finding in certain locations.

The mechanisms of transfer in addition to the number of transferred juveniles have fluctuated over time along with the changes in overall punitiveness of the justice system. There has been a downward trend in the use of transfer, but a significant number of juveniles are still incarcerated with adult inmates, and it is unclear what type of conditions they are exposed to. This change in trend adds significance to the current study. There is evidence that both juvenile and adult systems have become more receptive to the developmental differences between youths and adults and the immaturity of youths' judgement. It is important to investigate the extent to which this reception has brought about changes to actual correctional practices.

In light of these inquiries, the current study examined the correctional experiences of teenage inmates in both juvenile and adult correctional facilities. The primary focus was to assess the likelihood of receiving treatment and engaging in misconduct in juvenile and adult correctional facilities. As mentioned in the previous comparative studies, these two domains are critical in shaping correctional experiences. Two analytical measures were taken in order to adequately estimate the system-level effects. First, individual characteristics, such as risk level or demographic traits, were controlled for in the analysis. Second, two comparison groups consisting of same-aged individuals in juvenile facilities and young adults in the adult facilities were introduced. Through the analysis of data collected under the Ohio criminal justice system, the findings are expected to add to the understanding of implications from incarcerating juveniles in adult facilities and their behavioral adjustments.

CHAPTER 3

METHODOLOGY

Introduction

The last decade has seen an increasing trend towards reforming corrections in the United States. Starting around 2010, rehabilitative policies to relieve mass incarceration began to emerge in the form of evidence-based correctional service, reentry programs, and community-based alternatives (Cullen, 2013; Cullen & Jonson, 2016). Relatedly, the number of youths tried and incarcerated in adult prisons has been decreasing due to a recent movement to promote deinstitutionalization (Hockenberry & Puzzanchera, 2014). There is also growing support for rehabilitation as a guiding philosophy in Ohio. Such evidence can be found in recent initiatives for assessing individual needs and providing services for successful rehabilitation. For example, Ohio introduced a series of legislative policies in 2011 and 2012 that facilitated the use of risk assessment tools and diversion programs for non-violent offenders during the sentencing stage. The Ohio Plan, introduced in 2011 by the DRC, is another example of enhanced emphasis on rehabilitation at the correctional stage. This initiative helped establish an evidence-based approach to institutional intervention and management. Most importantly, it emphasized the significance of correctional programs, especially the ones that targets the reduction of dynamic criminogenic needs.

It is unclear whether these recent shifts caused changes in the practice of handling incarcerated juveniles. It is possible that the increasing support for the principles of effective correctional practices in the adult system improved the classification, management, and treatment programs, and caused observable change in the experience of inmates in those facilities. This study responds to the need to reassess the current system in such shifting

context. The present study sought to generate new insights on the correctional experiences of juveniles in the following four ways: First, what is currently known about the correctional experience in adult institutions has largely come from the interviews and surveys on subjective perceptions. While self-reporting is a critical source of gaining insights into subjective experiences, it is important to measure the actual receipt of correctional services and behavioral control measures in correctional institutions. Recent studies described in previous chapters suggest that adult prisons may do better than or do not significantly differ from juvenile institutions in providing access to institutional services. These findings imply the possibility that adult prisons might not be worse in every aspect as commonly perceived. The current study critically investigated such claims through official records of correctional services.

Second, this research examined the behavioral adjustment of teenage inmates through the analysis of misconduct and disciplinary responses across correctional systems. The review presented in the last chapter revealed that juveniles are at increased odds of rule infractions, and disciplinary measures tend to be stricter in adult prison. These statements were examined in the current study with the data of officially-reported misconduct rates. Third, this dissertation employed a number of methodological approaches to refine the understanding generated by previous research. Two comparison groups were introduced to make contrasts from the juveniles incarcerated in adult prison: (1) one with same-aged individuals in the juvenile system and (2) the other with slightly older inmates in the adult system. The goal was to obtain what Fagan and Kupchik (2011) termed as “marginal effects of incarceration,” an assessment of the reality of adult incarceration net of the nature of adult system itself.

Last, a propensity score weighting analysis was used to achieve the research objectives. This study compares across multiple groups that can differ on various characteristics. As will

be shown in the results section, the teenage offenders in adult prison exhibited difference in terms of demographic profiles and offense-related attributes from comparison groups. For example, the DRC youth group and the DYS juveniles consisted of a small percentage of low-risk offenders and a high percentage of violent offenders while the young adult group consisted of low-risk offenders incarcerated for a property offense. To ensure accurate comparisons, it was necessary to match the groups on these elements so that the treatment effects were not confounded by these between-group differences.

Propensity score weighting is a type of propensity score analysis technique useful in making a comparison across groups with different characteristics. Propensity score weighting involves calculating the probability of being assigned to the treatment group and using the estimated scores as sampling weights in order to correct for any imbalance. This analytical framework has been noted to be advantageous in estimating the treatment effect (institutional effect in this study) over the *t*-test or regression methods used in the previous studies when experimental designs are not feasible (Guo & Fraser, 2014). The comparison groups were weighted to achieve the balance on nine or ten covariates with the treatment group (youth in adult prison) in order to ensure a less biased comparison on service receipt and misconduct.

Propensity score weighting analysis through Generalized Boosted Modeling

Propensity score weighting, a technique within the larger category of propensity score analysis, provides a method for balancing the groups in estimating treatment effects without relying on randomized experimentation. Propensity score analysis generally involves calculating a statistic that represents the probability of assignment to the treatment group given certain pre-treatment characteristics. Estimated score summarizes the distribution of covariates and can be used to achieve balance through matching, stratification, or weighting the subgroups.

On the assumption that the researcher incorporated all covariates that could impact the likelihood of being assigned to the treatment or non-treatment group, the use of propensity scoring can parse out the sampling bias in estimating the treatment effect (Guo & Fraser, 2014).

The current study used propensity score weighting, in which estimated propensity scores were incorporated in the analysis as sampling weights (Hirano & Imbens, 2001; Robins & Ronitzky, 1995; Rosenbaum, 1987). Propensity score weights are estimated with the inverse probability of being assigned to the treatment condition, and by incorporating these into the multivariate analysis, it allows each case to have differential influence on estimated treatment effects. In other words, each case contributes to the estimate to a varying degree depending on the conditional probability of treatment assignment. The advantage of this method over matching and stratification is that it does not rely on resampling and thus most of the sample can be retained. Weighting fits the interest of this study especially because substantial differences in the characteristics of youths in the adult and juvenile systems were expected. Matching is less desirable when common support region is not well-established, and a significant number of youths in adult prisons could have been excluded from the analytical sample due to the lack of matching cases.

Generalized boosted modeling (GBM) is a recently developed technique for estimating the propensity score for weighting (McCaffrey, Ridgeway, & Morral, 2004). GBM consists of an iterative algorithm that produces a series of regression trees until the best balance between the treated and control groups is achieved. This machine learning-based iterative approach has been found to produce reliable balancing estimates with a large number of pretreatment covariates without the need to transform individual variables. The algorithm seeks the maximum balance between groups in their propensity score weighted distributions of covariates,

and can successfully handle various functional forms in addition to missing values in independent variables (Guo & Fraser, 2014; McCaffrey et al., 2004).

GBM is programmed to add an additional iterative fitting processes until the optimal balance between groups is obtained. In this procedure, the balance can be defined as equivalent distributions of covariates across groups and is assessed using two statistics: (1) standardized bias and (2) the Kolmogorov-Smirnov (KS) estimate. The former is calculated with the absolute standardized mean difference, and the latter quantifies the differences in the distributions of the covariates between groups pre- and post-weighting. The goal of these calculations is to specify the model, so that the best overall balance is achieved within the maximum number of iterations specified. The balance of individual variables, which refers to the similarity (or difference) in the mean of each covariate across groups after weighting, can also be assessed with the same statistical analysis. McCaffrey et al. (2013) recommended considering balance statistics (standardized bias and KS values) equal to or greater than .20 to be problematic. No clear rules exist for deciding which statistic to rely on. This dissertation assessed all of the models with both indicators. When both statistics yielded similar results, the weights that minimized the standardized bias were chosen for use in the treatment effect estimation. When the results were different, the weights that produced a better balance were used.

McCaffrey et al. (2013) demonstrated the applicability of propensity score weighting when comparing multiple groups using GBM. The steps in this model include estimating the propensity score, assessing the balance, integrating the weights in the outcome analysis with a pair of groups, and repeating the same procedure for all possible pairs. However, the present study was structured so that only two groups (juveniles in juvenile facilities and young adults in

adult prison) were compared to the treatment group. Youth incarcerated in adult prison is the primary “treatment” of interest in this study. Comparing this treatment group to each comparison group provided an opportunity to assess the impact of adult prison on individuals of similar age in alternative settings. Each comparison group represents an alternative condition for the youth confined in adult facility. The DYS juvenile data represent the alternative that the DRC youth offenders had been housed in juvenile facilities instead. In the same manner, young adults represent the general correctional population and provide a basis for distinguishing the experience in an adult facility as a special (transferred youth) population from that of a general population in a similar developmental stage. Therefore, it was not logical to compare the youth in juvenile institutions to the young adults in adult prison (comparison groups).

The objectives of this research study were best met using average treatment effect among the treated (ATT) to quantify the impact of juvenile versus adult systems on offenders in alternative settings. In particular, ATT has the capability of identifying the subgroups of juveniles who were typically assigned to one setting and then placed in the alternative system. This estimate is useful when the treatment is not applicable to the entire population. The two comparison groups do not share the possibility of being in the treatment condition. The young adults, due to their age, could not have been sent to juvenile facilities and cannot constitute the alternative condition of the DYS juvenile group. An alternative treatment effect, the average treatment effect (ATE), assumes that the treatment is eligible for the entire population in the study. This estimate is less appropriate as it could include the cases not eligible for a particular condition in the first place (Loughran & Mulvey, 2010). For this reason, the global nature inherent in the ATE removed it from consideration for the study.

Data

Integrative data analysis

The present study involved comparing juveniles in juvenile residential facilities, juveniles in adult prison, and young adult inmates in adult prison. Therefore, the data from an existing study on adult correctional system was integrated with the data from the juvenile correctional system in Ohio. The data for the juvenile system came from a statewide assessment of juvenile residential facilities, *Ohio DMC Assessment*, published in 2016. The source for the adult system data was a state-level study concerning the effectiveness of correctional programs, *Evaluation of Ohio's Prison Programs*, conducted in 2015. Access to both datasets was approved by the University of Cincinnati Institutional Review Board, and the data were transferred from the respective research agency in the manner described in the protocol.

Pooling the data that are drawn from different existing studies could introduce unique challenges. The compatibility of data sets was thus evaluated within the framework of integrative data analysis (IDA) (Curran & Hussong, 2009; Hussong, Curran, & Bauer, 2013). First, it was appropriate to combine the two data sets for certain portions of the study for two reasons: (1) Both studies were conducted within the same legal boundary consisting of a single state. Inherent differences between juvenile and adult systems were expected and desired as they operate on distinct models of justice and thus offer distinctive management systems, programs, and environments as reviewed in the previous chapter. Using the data within a single state jurisdiction eliminates possible state-level effects and allows us to attribute the observed differences to the influence of juvenile and criminal systems; and (2) the data collection occurred during a similar period. The Disproportionate Minority Contract (DMC) assessment collected

data concerning the youth committed to residential programs from 2011 to 2014, and the Prison data contain the records of inmates admitted between 2011 and 2014. Utilizing the data collected around within same time frame rules out possible period effects. Hence, potential sample-specific heterogeneity due to sampling, geographic region, and history was ruled out in integrating the data sets in this study (Curran & Hussong, 2009).

However, as the original datasets were collected for different research purposes from different research entities and settings, some variables were not operationalized in the same way. Hussong et al. (2013) suggests creating harmonized items to resolve heterogeneity due to measurement. It was necessary to recode certain variables in the most compatible way and keep such limitations in mind when interpreting the results. For example, information concerning sentence length was provided in varying time units across data sets. It was necessary to convert the sentence data into months and stay mindful of the inherently greater range in adult sentences. A detailed data integration scheme can be found in the measures section.

Ohio Prison data (Evaluation of Ohio's Prison Programs)

The data for inmates in the adult system came from the Ohio Prison Study. It was designed to evaluate the effectiveness of programs in reducing misconduct and recidivism of prison inmates in Ohio. The purpose of the project was to assess the strength and weaknesses of prison programs, and to estimate the impact of program participation across inmates and facilities. To this end, both individual-level and institution-level information was collected from all 28 state-run prisons in Ohio. A series of surveys and interviews with inmates and correctional staff were also conducted between 2011 and 2014 (Latessa et al., 2015).

Inmate information came from the Ohio Department of Rehabilitation and Correction

(ODRC) database. It included the records of 105,945 inmates who were admitted to the Ohio prison system from 2008 to 2012. The ODRC maintained information on individual inmate's demographic information, sentence information, security classification levels, programming information, and misconduct report and consequences. The main aim of the study was to evaluate the effectiveness of prison programs in promoting behavioral adjustment within prison as well as successful reentry to community. Thus the database included extensive information on program measures including (a) referral, start, waiting list status and dates, (b) terminated, completed, declined status and dates, (c) program type, and (d) the name of program. Inmates in the sample were participating in or were on the waitlist for all programs including education, vocation, mental health, unit management, substance abuse, and recovery (Latessa et al., 2015). This dataset captures two of three groups outlined in the previous section: teenage and young adult inmates in adult prison.

Ohio DMC Assessment data

The data were collected as a part of Ohio Disproportionate Minority Contact Assessment conducted by the University of Cincinnati Center for Criminal Justice Research. The study was funded by Ohio Department of Youth Services (DYS) to evaluate minority youth's contact with police, court, and correctional facilities (Sullivan et al., 2016). This project sought to find out if youths are treated differentially by the justice system based on their race. The main objective was to identify differential treatment and seek possible explanations for disproportionality. Three points of justice process were of primary interest: police, juvenile court, and confinement in residential facilities. The last portion of the data, experience in state-run residential facilities, is relevant to this dissertation.

The correctional experience portion of the data included a stratified, random sample of

1,514 youth confined in DYS facilities from 2010 to 2014. The final sample was randomly selected from the pool of all youth referred to DYS facilities during the study period (N = 2,975). In order to maximize the overlap of cases included in the court portion of the data, 2010 and 2011 admissions were oversampled. The final sample closely resembled the target population data in terms of racial composition (56.2% vs. 56.4% of African American), gender composition (93.2% vs. 93% of male), and referral county (from Cuyahoga, Franklin, Hamilton, Lorain, Montgomery, Summit, and Lucas county in the descending order of relative composition). The Ohio DYS provided the individual record the staff received at intake and expanded thereafter during commitment. The information included demographics, risk and needs, offense details, as well as program participation and disciplinary infractions of sampled youth. This dataset was appropriate in composing the other comparison group: teenage inmates in juvenile institutions.

Sample

This study compared the institutional records of youth in adult prison with youth in juvenile placements and young adults in adult prison. Inmates younger than 18 years old were confined in a single facility, Madison Correctional Institution, through the Youthful Offender program. During the time of data collection, there were 473 Youthful Offenders, aged from 15 to 17, in the Ohio prison system. The young adult sample was retrieved from the inmates of Madison CI who were between 18 to 24 years old at the time of admission (n = 1,512). This group represents the adult inmate population in the immediately adjacent age range who are closest in their developmental stage. Research has established that brain regions associated with cognitive function do not fully develop until young adulthood, typically considered to be mid-20s. Although the developmental timeline is arbitrary, the distinguishing characteristics

between a fully developed adult brain of older adult and its underdeveloped counterpart of younger adult are empirically supported (Arnett, 2000; Gogtay et al., 2004; Sowell et al., 2003). In addition to neural development, researchers note that social maturity of late teens and early twenties is more similar to adolescents than older adults. Adolescence marks the period of exploring identities, role experimentations, and seeking independence; and these tasks usually continue into early twenties (Arnett, 2000; Reifman, Arnett, & Colwell, 2007). Especially among the offender population, delinquent behavior tends to continue into young adulthood (Loeber et al., 2013). Adults older than this age range might be too different in terms of behavior style and perception of surroundings to make a proper comparison.

Because the Madison CI was operated as a reception center for sex offenders during data collection period, there was an overrepresentation of sex offenders. There were 955 sex offenders (38.7%) among 2,467 young adults compared to only 11 (2.3%) in the juvenile group. The composition of sex offenders in the Madison CI was not representative considering that sex offenders take up 7.1% among total prisoners in Ohio (Ohio Department of Rehabilitation and Correction, 2012a). Therefore, sex offenders were excluded from the analytical sample. As a result, the final sample size of young adults comprised the remaining 1,512 cases. Although propensity score weighting is more useful in preserving the sample compared to propensity score matching, the literature recommends using a sufficient number of cases for the comparison group. It gets harder to achieve balance when the sample size is insufficient relative to the number of covariates included in the propensity score generation process (McCaffrey et al., 2013). All possible cases, instead of taking a subsample that matches the size of the treatment group ($n = 473$) were thus included in the analysis.

The DYS data included 1,514 youths in state-run residential facilities. Among these,

the sample was limited to individuals aged 15 to 17 years old in order to make this group comparable to the group of interest in terms of age. Also, treatment/program data were available for a subpopulation due to the change in database system. These restrictions reduced the DYS sample to 435 cases. Also due to female cases that are rarely processed and incarcerated in adult prisons, the analytical sample was limited to male youths and young adults. The final sample size for each group was DRC youth = 473, DRC young adult = 1,512, DYS juveniles = 435.

Measures

Subsample description

A propensity score analysis is used to estimate treatment effects with nonexperimental data. In the present study, the treatment of interest was confinement of teenage inmates in adult prisons. Based on this notion, two sets of comparisons could be made against the treatment group. One comparison could be made across teenage inmates in adult prisons and teenagers of similar profiles in juvenile correctional facilities. The focus in this comparison was whether the correctional experience would be different if the teenage offenders were confined in juvenile facilities instead of adult prisons. Next, the teenage inmates could be compared to the young adults in the same setting. At this point, the focus of comparison was whether the experience of being confined in adult prisons would be meaningfully different for adolescents versus young adults if their personal characteristics were matched.

Following this rationale, two subsamples were created: (1) youth offenders in adult prisons and young adults in adult prison and (2) youth offenders and juveniles in juvenile facilities. In each subsample, DRC youth group was assigned the value of “1” on the treatment indicator while the other group was assigned a “0” to represent the comparison group. This

strategy is consistent with McCaffrey et al. (2013)'s approach that estimates individual pairwise effects rather than fitting all groups into one model. It was not relevant to make a comparison between the comparison groups, and it was not necessary to create another subsample that contained young adults and DYS juveniles. The same analytical steps were followed for each subsample: (1) DRC youth offenders versus DRC young adults and (2) DRC youth offenders versus DYS juveniles. A note of caution is due here since individual comparisons, rather than an omnibus test, are made. There is a potential for an increased likelihood of Type I error from making multiple comparisons, and one solution is to use a more conservative threshold of statistical significance (Kao & Green, 2008). Results are reported both at $p=.05$ and $.01$ levels, the latter being a more conservative threshold.

Outcome variables

The outcome of interest concerned two core dimensions of institutional experience: (1) treatment programs and (2) behavior management. The DYS database provides information about programs in terms of the name of the program, number of hours in treatment, and the number of contacts that each youth actually received. In order to make the measures in DRC database comparable, access to the program was limited to those who actually started the program. There were concerns mentioned in the Ohio prison study report about inmates being put on a waitlist until actual receipt of services. That issue acted as a significant barrier to completion of programs in Ohio DRC facilities. In order to account for such circumstances, the inmates who were referred to the program but were on the waitlist at the time of data collection were not considered as participants in the program. This was necessary because post-release behavior differed significantly among those who completed and those who started as opposed to those who were put on waitlist but never actually participated (Lugo, Wooldredge, Pompoco,

Sullivan, & Latessa, 2017; Pompoco, Wooldredge, Lugo, Sullivan, & Latessa, 2017).

Access to the program was measured as the likelihood of participating in several programs: (1) any type of programs; (2) cognitive behavioral therapy (CBT)/counseling/mental health programs; (3) educational/vocational /life skill programs; and (4) substance abuse and recovery programs. A list of specific programs can be found in the appendix. For the second research question, access to the programs that matched the criminogenic needs was reviewed. Institutional intervention might not be as effective if it does not address issues that are unique to individuals. Research concerning effective correctional intervention suggests that individuals should be assessed on criminogenic needs, and treatment programs should target reductions in those needs.

Evidence suggests that the needs change over time, which is particularly relevant to the level of future offending behaviors. These dynamic needs include substance use, family/peer relationships, and attitudes towards criminal behavior (Andrews & Dowden, 2006; Dowden & Andrews, 1999). Inmates in the DRC system were assessed by the Reentry Accountability Plan (RAP; Herron-Boyer, 2004) after considering seven domains: (1) education/employment; (2) marital/family; (3) associates/social; (4) substance abuse; (5) community functioning; (6) personal; and (7) attitudes. Juveniles in the DYS system were assessed using the Ohio Youth Assessment System (OYAS) that included six dynamic needs: (1) family/living arrangements; (2) peers and social networks; (3) education/employment; (4) pro-social skills; (5) substance/mental health/personality, and (6) values/beliefs/attitudes.

Next, each institutional program was categorized depending on one or more targeted criminogenic needs. Appendix B provides the list of prison programs and related needs. Thinking for a Change (T4C), for example, is a cognitive behavioral change program, and it

targets interactions with peers/associates, pro-social skills, and attitudes. The outcome variable for the second research objective was coded as 1 if a case had started or was referred to one or more programs that matched with identified criminogenic needs. Other cases that failed to receive programs appropriate for their criminogenic needs were coded as 0.

The second outcome dimension was related to differences in management styles across institutions. The likelihood of an inmate having records for detected misconducts was compared. The operationalization of misconduct was limited to the instances that the respondents were found guilty of the reported violation. The misconduct variables measured whether an inmate committed any disciplinary infraction that was found guilty (Yes = 1, No = 0).

Control variables

Institutional services and experience were likely to differ by inmates of different background. Minority youth often take up the majority of the incarcerated population in both juvenile and adult systems. Still, race was a significant factor in predicting the likelihood of victimization, misconduct, and access to medical service (Fagan & Kupchik, 2011; Ng et al., 2012). The effect of being an African American or Hispanic on institutional experience was considered.

Other variables were not available uniformly across data sets; it was necessary to identify the set of items that seem to assess the same construct and combine them across studies. Table 3-1 illustrates the underlying concept of these variables and corresponding information pooled from each data set. Educational achievement and cognitive ability have been shown to be directly related to the eligibility of certain programs and impact the likelihood of successful completion of services. Educational achievement was measured by an inmate's attainment (or not) of the level that was conventionally expected at his age. For the DRC data, the variable

was coded as 1 if a high school diploma or GED was earned at the time of admission. For the DYS data, the same value was assigned if a youth was at or above the grade level appropriate for his age at admission. Cases that had not accomplished the appropriate education level were assigned a zero. The goal was to identify the cases who did not meet the academic requirement that is conventionally expected at their respective age.

The next variable, learning ability, is related to the educational achievement but is aimed to more specifically capture one's learning capacity. If the educational achievement is used to determine appropriate level of educational program, learning ability is related to one's responsivity to correctional programs and decisions to place one in special needs programs. The reading score of an education assessment tool was also available for the adult prison respondents. One was flagged for learning difficulty if the Comprehensive Adult Student Assessment System (CASAS) reading score was lower than 211. A CASAS reading score from zero to 210 indicates beginning basic literacy, equivalent to grades 1 to 3.9. DYS did not measure youth's cognitive ability on CASAS. Instead, mental health diagnosis information was used to determine whether a case had a learning difficulty. For example, the diagnosis of a learning disorder was used to indicate potential impairment to receiving a treatment program assignment or following institutional rules. Learning disorder in reading can cause difficulty with understanding, recalling, and making inferences based on reading for children. Those who scored lower than 211 on CASAS were described as carrying very limited level of reading/writing ability. It can be argued that these two standards are substantively similar. Although there is a possibility that learning disorder could capture a broader population as it can be diagnosed from nonverbal domain, in this study, the prevalence of learning difficulty was larger for the DRC data. To account for this possibility, the sensitivity of the learning difficulty

variable was tested when the bias persisted after the weighting. Excluding the variable from the propensity score model or the weighted regression model did not alter the conclusions.

A number of offense-related variables were included in the analysis. Institutional services are allocated differentially depending on the phase of sentence, security level, or offense type. Offense types were categorized into four types: violent, property, drug/alcohol related offense, and others. Three dummy indicators that identify the first three types of offenders were included in the propensity score models. Due to the difference in the range of sanctions available in each system, it is expected that the groups exhibit varying distributions of sentence length. Yet, inmates are managed and classified relatively among their respective group. It was necessary to capture if one's sentence length was longer or shorter than what's typical in the group. Raw values were used in the descriptive analysis to illustrate between-group differences and then were converted into z-scores to obtain a standardized length relative to group mean (Adeyemi, 2011).

Ohio maintains a separate statewide security classification system of inmates for adult and youths. Security levels are determined in consideration of multiple factors, such as age, gender, criminal history, programing and education history, and mental/emotional stability. An inmate's security level determines his physical security requirements, level of required supervision, and access to institutional services. This level is also used to predict the likelihood of engaging in disruptive behavior within prison. Level 3 is considered a medium security population, and greater levels indicate higher security requirements. Although the system can assign a level from one to six, each level can be categorized into minimum (0 or 1), medium (2 or 3), or maximum security (4 and above). This six-level classification level is not used in the Ohio juvenile system. Instead, the risk level of the Ohio Youth Assessment System (OYAS) can

be used to determine a youth's security level in this study. The *OYAS* residential tool is designed to assess a youth's risk and to better guide treatment decisions and check progress in that program. Levels of *OYAS* include low, moderate, and high risks of reoffending and were available for a subsample of youths.

These two variables were harmonized on two shared characteristics: (1) both are assessed upon admission to the facility on a combination of factors, and (2) assigned level is used to effectively classify inmates and allocate treatment resources. The factors that are included in these assessments overlap considerably: the DRC tool evaluates the history of assaultive/violent behavior, demographics, mental/emotional stability, criminal history, programming and education history, and gang affiliation whereas the *OYAS* residential tool assesses juvenile justice history, family/living arrangements, peer/social network, education/employment, prosocial skills, mental health/personality, and beliefs and attitudes about the criminal justice system. Based on these factors, inmates are assigned to one of three ordinal levels of risk. This information is used to manage institutional behavior and allocate appropriate services, which are outcome measures of the present study.

Table 3-1 Combined information and underlying concept of integrated measures

Variables	Underlying concept	DRC measure	DYS measure
Educational achievement	Attainment of the level conventionally expected at an individual's age	Holds High school diploma or GED	At or above the grade level appropriate for the age at admission
Learning difficulty	Potential impairment to learning ability	CASAS reading score lower than basic literacy -equivalent to grade 1 to 3.9 -very limited ability to read or write	Identified to have learning disorder
Sentence length	Converted into months, and standardized by z-score	Available in months	Available in days/months/years
Security level	Used to assess level of risk for behavioral management and service allocation	Ordinal indicator that reflects the combination of history of violent behavior, age, mental/emotional stability, criminal history, programming/education history, gang affiliation	Ordinal indicator that reflects the combination of juvenile justice history, family/living arrangements, peer/social network, education/employment, prosocial skills, mental health/personality, beliefs/attitudes/values

In addition to the treatment aspects of the institutional experience, this dissertation examined disciplinary misbehavior of inmates. Researchers have found that the strength of the social bond to conventional society is related to the likelihood of misconduct in prison. Social bond theory posits that while individuals are naturally inclined to deviant behavior that gives them immediate and effortless gratification, attachments and commitments to social institutions could discourage delinquency by imposing external controls (Hirschi, 1969). The control theory was put forth to explain deviance in the society. Nevertheless, scholars have shown that the control perspective could be also useful in explaining misbehavior inside the prison (Steiner, Butler, & Ellison, 2014; Steiner & Wooldredge, 2009a, 2009b). Following this perspective, an indicator of family-related criminogenic needs was included as control variables for the third research objective. Inmates who do not have family-related needs identified by the risk

assessment (1 = Yes, 0 = No) are expected to be less likely to be involved in institutional misbehavior.

Research questions

1. After controlling for individual differences, were juveniles in adult prison less likely to have received any form of treatment than adults in adult prisons or juveniles in juvenile prisons?
2. After controlling for individual differences, were juveniles in adult prisons less likely to receive programs that matched their criminogenic needs than adults in adult prisons or juveniles in juvenile prisons?
3. After controlling for individual differences, were juveniles in adult prisons more likely to have engaged in misconduct than adults in adult prisons or juveniles in juvenile prisons?

Analytic Steps

This study employs the weighting and analysis of nonequivalent groups to estimate the impact of incarcerating juveniles in adult prisons. Prior to answering the research questions, basic descriptive statistics were examined on the analytic sample ($n = 2,420$). The average age of study groups, and the prevalence of each attribute on control variables (race, ethnicity, educational achievement, learning difficulty, sentence length, security level and offense type) was compared. Additionally, the difference in the distribution of covariates were formally tested with appropriate statistics. This analysis shows the overall profiles of study groups and sets the context for multivariate analysis.

The multivariate analysis was performed in four steps. First, a data set that contains the pooled variables of the treatment and control groups needed to be created. This follows McCaffrey et al. (2013)'s suggestion that, when comparing more than two groups, weights

should be produced separately for each pair with a binary model. Therefore, two data sets were prepared for two pairs of comparisons: youth offenders versus young adults in adult prison and DRC youths versus juveniles in juvenile facilities.

Then, the propensity score that predicts the group membership (treatment) based on identified covariates. This process was completed using the generalized boosted modeling. In all models in the present study, two stopping criteria (standardized bias and KS value) required different number of iterations and produced different set of propensity score weights. The model was evaluated on two aspects: number of iterations that were used to reach the maximum overall balance, and balance statistics of individual covariates. The estimate was considered reliable if the best balance was achieved within the set number of iterations (5,000 in this study) and if subsequent iterations did not yield better balance. Analysis was performed using the toolkit for weighting and analysis of nonequivalent groups (*twang*) package in Stata15.1.

The final step was to incorporate the propensity score weights in the regression analysis to estimate the treatment effect in determining the likelihood of outcome variables. The covariates that had remaining imbalance even after the weighting were also incorporated in the regression models to ensure robust estimation processes. This analysis was performed using *svy* function in Stata. Research questions are answered in this step. Additionally, due to limited data availability, some of the research questions were answered with a sub-sample. In such cases, comparability of samples was assessed.

CHAPTER 4

RESULTS

Introduction

Chapter three illustrated the research objectives, data and sample, and analytic strategies used in the study. This chapter reports the findings from proposed descriptive and multivariate analyses. The main objective of this study is to compare the experience of youth in adult prison with two comparison groups. As outlined in the previous chapter, a pooled data of 2,420 inmates in juvenile and adult correctional facilities provided necessary information to examine three research questions. To assess between-group differences, descriptive data were generated for the treatment and comparison groups on individual variables. Study groups differed largely on study variables, confirming the need for covariate adjustments.

Next, multivariate analysis included propensity score estimation and weighted regression models. First, propensity scores weights that minimized the difference between the youthful offender group and the comparison group were produced. For the first two research questions, a total of seven covariates were used: (1) race (black/non-black), (2) ethnicity (Hispanic/non-Hispanic), (3) educational achievement, (4) sentence length, (5) security level, and (6) offense type. An additional covariate, family-related criminogenic needs, was added in the propensity score estimation process for the third research question. Propensity scores generated in this process balanced the groups. The final step was to estimate the treatment effect with weighted regression models. These models included a treatment group indicator (DRC youth offenders versus comparison group), an outcome variable (treatment participation or reported misconduct), propensity score weights, and covariates with remaining balance. This chapter discusses specific results from the analysis of these models.

Descriptive analysis

Table 4-1 shows descriptive statistics of the analytical sample that was disaggregated by groups. The sample included 473 juveniles and 1,512 young adults in an adult prison and 435 juveniles in DYS facilities. The two comparison groups differed from the primary group (DRC youth) with respect to almost every covariate. The differences in the covariates were tested using the proportion, chi-squared, or *t*-test, and corresponding effect sizes were calculated with Cohen's *d* or Cramer's *V*. Racial minorities took up more than half of all samples, yet the discrepancy was the greatest in the DRC youth group. Greater than 80% of this group were African Americans. African American youths make up 56% of the DRC young adults and approximately 60% of the DYS sample. These proportions were significantly smaller than that of the DRC youth group (DRC Youth versus DRC YA: $z = -10.87^{**}$, $d = .59$; DRC Youth versus DYS juveniles: $z = -7.78^{**}$, $d = -.53$). Conversely, the proportion of white inmates was the lowest among the DRC youth group (DRC Youth = 15.4%, DRC YA = 43.0%, DYS juveniles = 31.0%). Hispanic inmates did not account for much in any of the samples (DRC Youth = 1.9%, DRC YA = 1.3%, DYS juveniles = 1.9%).

Less than half of the population had obtained a high school diploma or GED in either age group in adult prisons (DRC Youth = 39.7%; DRC YA = 45.5%). Conversely, approximately 60% of the DYS sample was at or above the grade level appropriate for their age. Relative to the two comparison groups, the DRC youth had the lowest educational achievement and the differences were statistically significant (DRC Youth versus DRC YA: $z = 2.19^{*}$, $d = .12$; DRC Youth versus DYS juveniles: $z = 7.18^{**}$, $d = .50$). There was a small portion of the population that was recognized as having learning difficulties. None of the groups had more than 6% of individuals challenged with problems that interfere with learning (DRC Youth =

4.9%, DRC YA = 5.9%, DYS juveniles = 2.3%). There was no statistically meaningful difference in the proportion of the population with learning difficulties across samples.

The average sentence length was the longest among the DRC youth group (76.72 months) and the least among the DYS group (10.13 months). The variation illustrated between the juvenile and adult institutions is an artifact of the nature of the sanctions available in each court. In order to account for substantial difference across groups, sentence length was standardized with z-scores within each group in the multivariate analysis. There were some differences in the composition of offense-related variables. Compared to the young adult group, the DRC youth group had a more moderate risk and violent offenses (94.5% moderate risk, 87.3% violent offense). The young adult group included more low risk offenders who had committed different types of offenses with offenses against property being the most prevalent category (80.8% low risk; 23.7% violent offense, 32.7% property offense, 32.3% drug/substance related offense). The risk composition of the DYS sample also differed significantly from the DRC youth group ($\chi^2 = 245.22^{**}$, $V = .63$). The DYS sample was relatively evenly distributed across all three levels; almost 40% was identified as moderate risk, 36% low risk, and 25% as high risk. This group, similar to the DRC youth group, consisted predominantly of violent offenders (60.7%).

In order to illustrate the differences, the typical case from each group seems to be different with respect to many characteristics. Teenage offenders in the adult prison could be represented by a moderate-risk non-Hispanic or African American youth without a serious learning difficulty yet had not achieved an appropriate educational level and was incarcerated for a violent offense. Conversely, the young adult group in the same facility could be represented by a low-risk minority male who had been incarcerated for a property offense. The typical

youths of ages 15 to 17 confined in the DYS facilities could be described as a racial minority at a moderate level risk. It is most likely that he spends ten months in the facility for a violent offense. In summary, these three groups tended to converge with respect to racial/ethnic composition and educational status yet show some contrasts in terms of sentence length, security levels, and offense types.

Table 4-1 Distribution of covariates and statistical difference with DRC youth group

	DRC Youths	DRC Young Adults	DYS Juveniles
Mean Age (stv.)	16.75 (.46)	21.18 (1.77)	16.88 (.77)
Demographics			
Black	83.7%	56.0%	60.6%
		$z = -10.87^{**}, d = -.59$	$z = -7.78^{**}, d = -.53$
White	15.4%	43.0%	31.0%
		$z = 10.86^{**}, d = .59$	$z = 5.58^{**}, d = .37$
Hispanic	1.9%	1.3%	1.9%
		$z = -1.04, d = -.05$	$z = -0.34, d = -.02$
Educational achievement			
	39.7%	45.5%	64.0%
		$z = 2.19^*, d = .12$	$z = 7.18^{**}, d = .50$
Learning difficulty			
	4.9%	5.9%	2.3%
		$z = 0.86, d = .05$	$z = -2.07, d = -.14$
Sentence length (stv.)			
	76.72 (61.68)	22.36 (32.99)	10.13 (7.36)
		$t = -18.36^{**}$	$t = -23.30^{**}$
Security level			
Low	5.3%	80.8%	36.1%
Moderate	94.5%	19.0%	38.7%
High	0.2%	0.2%	25.2%
		$\chi^2=883.18^{**}, V=.67$	$\chi^2=245.22^{**}, V=.63$
Offense type			
Violent	87.3%	23.7%	60.7%
Property	6.6%	32.7%	29.4%
Drug/Substance	0.6%	32.3%	2.8%
Other	5.5%	11.3%	7.1%
		$\chi^2=927.21^{**}, V=.68$	$\chi^2=96.39^{**}, V=.33$
N	473	1,512	435

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

Research question 1

The first set of questions aimed to compare the extent of access to different institutional programs across systems regardless of assessed criminogenic needs. The results of propensity score weighting and treatment effect estimation are presented below. Two pairs of comparisons were made on the likelihood of access to programs: youth offenders versus young adults in adult prison and youth offenders in adult prison versus juveniles in juvenile facilities. Before weighting, six of nine covariates exhibited substantial imbalance between treatment and comparison groups. For the first pair, the youths had higher proportions of black and violent offenders, longer sentence length, and higher security level, yet smaller proportions of property and substance related offenders compared to the young adults. In the second comparison, the DYS juveniles had less black or violent offenders and lower security levels, yet there was a greater composition of property- and substance-related offenders (Table 4-2, 4).

Propensity score weighting generally attenuated the imbalance in the covariates in both sets of analyses. As mentioned in a study by McCaffrey et al. (2013), the cutoff of .20 was used to determine imbalance. The balance statistics were greatly reduced for all covariates and only one standardized difference value remained greater than .20. One recommended approach to account for the remaining imbalance is to include unbalanced covariates in the weighted regression. This method produces “doubly robust” estimates by applying both propensity score and additional covariate adjustments (Bang & Robins, 2005; Hullsiek & Louis, 2002). All covariates with the absolute post-weighting standardized bias or KS statistic greater than .20 were considered problematic and were included in the weighted regression analyses. As a result, the weighted regression models consisted of treatment program participation as the outcome variable, group indicator dummy variable as the primary predictor, and a selection of

covariates that remained unbalanced after weighting.

DRC youth offenders versus young adults

The results of the propensity score estimation process for the first pair are displayed in Table 4-2. The first column of the table shows the difference in the raw means across groups represented by the standardized difference and the KS statistic. The second and third columns provide the weighted estimates when different stopping rules were applied: (1) minimize the mean standardized bias (second set of columns) or (2) minimize the maximum KS value (third set of columns). The model converged with less than 1,200 iterations from either method. This value was a solid convergence within the maximum number of iterations recommended by McCaffrey et al. (2013). The algorithm calculated the overall amount of bias across covariates between groups at each iteration ranging from 1 to 5,000. The minimum value of the overall balance statistic was achieved at around 1,200 iterations, showing a slight increase in the measure as iterations were added. In the event that the best balance (smallest overall balance statistic) appeared in the early part of the iterations followed by an increasing trend, it could be assumed that a sufficient iteration option was given in the specified model. Conversely, a constantly decreasing pattern of balance statistics would indicate that the best balance was not achieved within the specified range of iterations and might require a model modification. This situation was not the case in the present analysis.

Prior to weighting, the samples were statistically different for six of nine covariates. Two groups differed significantly on the proportion of black, violent, property, sub/drug offenders, sentence length and security level (in bold). When the weights were applied, all differences in the covariates were reduced. For example, the standardized difference for the security level was reduced from 3.310 to .117 and .113 respectively, yielding approximately 96%

reduction. Similarly, the bias of violent offense indicator was reduced by 96% from 1.910 to .077 and .074. The standardized difference of one variable, that of the substance/drug related offense indicator, remained greater than the cutoff at .20 (absolute value .231/.225).² The balance was achieved with all other remaining variables, regardless of the stopping method (standardized bias or the Kolmogorov-Smirnov statistic). However, the weights produced by the first stopping method (second set of columns) were chosen as those were associated with smaller loss in weighted sample size (unweighted sample size of comparison group = 1,512, weighted sample size by std. bias = 126, weighted sample size by ksmax = 123)³.

Table 4-2. Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and young adults

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.750	.277	.121	.045	.117	.043
Hispanic	.047	.006	-.011	.002	-.011	.001
Edu. achievement	-.117	.057	.044	.022	.062	.030
Learning difficulty	-.048	.010	-.034	.007	-.042	.009
Sentence length	1.560	.640	-.001	.049	-.004	.047
Security level	3.310	.756	.117	.025	.113	.024
Violent offense	1.910	.636	.077	.026	.074	.025
Property offense	-1.054	.261	-.038	.009	-.037	.009
Sub/drug offense	-3.990	.317	-.231	.018	-.225	.018

Finally, the treatment effects of juvenile status in adult prisons were estimated with a series of weighted regression analyses. The regression models included a dummy indicator of juvenile status (DRC Youth = 1, YA = 0), propensity score as weights, and participation in

² This outstanding bias could be due to high correlation among the offense indicators, making it difficult to balance across all three of them. Yet, it is important to keep in mind that the fourth indicator (for other types of offenses) was not included in the analysis to prevent perfect correlation among them.

³ One can be concerned with the size of difference between unweighted and weighted sample sizes in the comparison group. However, McCaffrey et al. (2013) notes that the effective sample size provides a conservative illustration of the loss in precision due to weighting. It is a lower bound of the weighted sample size and could be useful in choosing between alternative models.

institutional programs as the outcome variable (Yes = 1, No = 0) in addition to substance/drug related offender indicator variable for the doubly robust estimation. Table 4-3 shows the unweighted and weighted averages of treatment recipients across groups. The likelihood of starting or obtaining a referral to any programs was significantly greater for the young adults without weighting (DRC youth = .583, YA = .707; $t = -1.99, p < .05$). This difference was reduced when the propensity score weights were incorporated ($t = -.59$).

The youths, on average, had a greater likelihood of receiving CBT/counseling/mental health programs and educational/vocational/life skill programs. Before weighting, substance and recovery-related programs were more accessible for the young adults. However, these differences were greatly reduced in the weighting process. In fact, educational/vocational/life skills program was the only type in which youth offenders and young adults significantly differed after weighting with respect to participation. In summary, a series of propensity score weighting analyses revealed that the juveniles, regardless of criminogenic needs, had similar levels of access to any of the institutional, counseling/mental health, and other types of programs and greater access to educational/vocational/life skill programs compared to young adults.

Table 4-3. Group means of outcome variables, unweighted and weighted differences in the means of DRC youth offenders and young adults (n = 1,985)

Outcome variables	Group means and stv.		Difference in Group means	
	DRC Youth	DRC YA	Unweighted Difference	Weighted Difference
Started or referred to any programs	.583 (.369)	.707 (.393)	-.124 (.062) $t = -1.99, p < .05$	-.079 (.133) $t = -0.59, ns$
Started or referred to CBT/Counseling/Mental health programs	.459 (.499)	.162 (.369)	.297 (.025) $t = 11.96, p < .01$	.054 (.059) $t = 0.93, ns$
Started or referred to Educational/Vocational/Life skill programs	.605 (.489)	.380 (.485)	.225 (.026) $t = 8.74, p < .01$	.166 (.057) $t = 2.92, p < .01$
Started or referred to substance and recovery programs	.019 (.137)	.046 (.209)	-.027 (.008) $t = -3.22, p < .01$	.002 (.011) $t = 0.21, ns$

DRC youth offenders versus DYS juveniles

Table 4-4 illustrates the propensity score estimation process of DRC youth offenders and DYS juvenile groups. In the same way as described in the previous model, the propensity score was estimated using two stopping rules: (1) minimize the mean standardized bias (second set of columns) or (2) minimize the maximum KS value (third set of columns). The best balance was obtained with less than 2,400 iterations (out of 5,000 total iterations) in both methods. Because approximately 2,400 iterations minimized the overall balance statistic and subsequent iterations led to worse balance, it can be assumed that a sufficient number of iterations were presented in the model. It took fewer iterations to reduce the difference in the covariates using the standardized bias compared to the KS statistics (2,245 versus 2,395).

Prior to weighting, the groups significantly differed from each other with respect to all covariates, except for the proportion of Hispanic inmates and security level. Applying the weights that were produced based on the standardized bias statistic removed most of the imbalance. For instance, the greatest amount of reduction was found in the property offense indicator (-.923 to .077; approximately 92% reduction). One covariate, the proportion of cases with learning difficulty, showed the standardized difference greater than .20 (at .207). The balance was achieved with all of the other remaining variables, regardless of the stopping methods. However, subsequent analyses were conducted using the weights produced by minimizing the standardized bias as opposed to the weights produced by minimizing the maximum KS value because the former stopping method achieved the balance with less iterations and less reduction in effective sample size (unweighted sample size of comparison group = 435, weighted sample size by std. bias = 13.51, weighted sample size by ksmax = 13.05).

Table 4-4. Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.623	.230	.078	.029	.093	.034
Hispanic	.021	.003	.091	.013	.093	.013
Edu. achievement	-.493	.242	-.040	.020	-.069	.034
Learning difficulty	.119	.026	.207	.045	.206	.044
Sentence length	.000	.110	-.167	.197	-.147	.179
Security level	.257	.308	-.004	.005	.000	.005
Violent offense	.799	.266	.115	.038	.135	.045
Property offense	-.923	.229	-.077	.019	-.082	.020
Sub/drug offense	-.267	.021	-.036	.003	-.034	.003

Next, the treatment effect of confinement in adult prison was estimated by weighted regression analyses. The regression models included a dummy indicator of confinement system (DRC = 1 versus DYS = 0), propensity score weights from the previous step, participation in different institutional programs as the outcome variable, and learning difficulty as the doubly robust estimation covariate⁴. Table 4-5 shows the unweighted and weighted averages of treatment involvement by teenage inmates confined in adult prison (DRC Youth) and juvenile facilities (DYS juveniles). A greater proportion of youth was involved in any type of institutional programs in DRC compared to the counterparts confined in the DYS facilities (DRC Youth = .583, DYS = .229). The difference in the likelihood of obtaining a referral to programs was tested with the independent sample *t*-test, and the result was statistically significant without weighting ($t = 4.66, p < .01$). The size of difference did not change much (.354 versus .399) and

⁴ Due to possible bias in the measurement comparability across data sets, it was necessary to test sensitivity of learning difficulty variable when its bias stand out even after the weighting. I tried estimating the propensity score model without this variable. In the alternative model without learning difficulty, the estimates for educational achievement became very unstable (unweighted standard error exceeded 214.0 and weighted standard error was over 46.0) probably because these two variables are conceptually and statistically related. Instead, I estimated the weighted regression models with the weights originally estimated with the learning difficulty variable but without doubly robust controlling. The result was very similar. Excluding the learning difficulty variable did not change substantive conclusions (Appendix D).

remained significant even after weighting ($t = 3.55, p < .01$).

Next, involvement in specific types of treatment was compared. The proportion of inmates that had started or were referred to different categories of institutional programs, regardless of their assessed needs, was calculated. Compared to the juveniles in DYS facilities, youth offenders in adult prisons were significantly more involved in CBT/counseling/mental health programs (DRC youth = .459, DYS = .211; $t = 8.20, p < .01$) and educational/vocational/life skill programs (DRC youth = .605, DYS = .207; $t = 13.37, p < .01$). Conversely, a greater proportion of inmates were involved in substance-related and recovery programs in DYS facilities (DRC youth = .019, DYS = .193; $t = -8.72, p < .01$). In summary, when youth characteristics are controlled, juvenile inmates in the adult system had greater levels of access to any institutional, counseling/mental health, and educational/vocational/life skill programs compared to delinquents of the same age confined in juvenile facilities. Regardless of assessed needs, a greater proportion of juvenile inmates was involved in substance-related programs. However, this difference was not significant when youth characteristics were controlled.

Table 4-5. Group means of outcome variables, unweighted and weighted differences in the means of DRC youth offenders and DYS juveniles (n = 908)

Outcome variables	Group means and stv.		Difference in Group means	
	DRC YO	DYS Juveniles	Unweighted Difference	Weighted Difference
Started or referred to any programs	.583 (.369)	.229 (.421)	.354 (.079) $t = 4.66, p < .01$	.399 (.112) $t = 3.55, p < .01$
Started or referred to CBT/Counseling/Mental health programs	.459 (.499)	.211 (.409)	.247 (.030) $t = 8.20, p < .01$	.291 (.085) $t = 3.43, p < .01$
Started or referred to Educational/Vocational/Life skill programs	.605 (.489)	.207 (.406)	.398 (.030) $t = 13.37, p < .01$	.470 (.082) $t = 5.68, p < .01$
Started or referred to substance and recovery programs	.019 (.137)	.193 (.395)	-.174 (.020) $t = -8.72, p < .01$	-.056 (.050) $t = -.06, ns$

Comparability of samples (DYS subsample versus DYS full sample)

As mentioned in the previous section, treatment information was available only for a subsample of DYS juveniles. Among 1,514 cases in the database, there were 1,145 youths that fit the sampling scheme (male youths between 15 and 17 years). Of these, treatment information was available for 435 cases, which were used in the analysis. Comparability of this subsample and the full sample was examined for the generalizability of findings.

Representativeness was examined by performing a series of equality of proportions tests and two-sample mean comparison tests. Results in Table 4-6 indicate that these two samples were largely similar with respect to the covariates included in the propensity score generation process. Tests of difference in the proportions/means were not statistically significant for the most part. Significant differences were found in educational achievement and sentence lengths. The analytical sample had a larger number of juveniles who reached appropriate levels of education for their age (64% versus 52.7%) and slightly smaller sentence lengths on average (10.13 versus 10.61 months).

Table 4-6. Estimates of covariates and test of difference across analytic and full samples of DYS juveniles

Covariates	Analytic sample (n = 435)	Full sample (n = 1,145)	Test of Difference
Black	60.6%	58.8%	$z = .69, ns$
Hispanic	1.9%	1.7%	$z = .07, ns$
Educational achievement	64.0%	52.7%	$z = 3.97, p < .01$
Learning difficulty	2.3%	1.7%	$z = .85, ns$
Sentence length (month)	10.13 (7.36)	10.61 (8.73)	$z = -8.52, p < .01$
<i>Risk level</i>			
Low risk	36.1%	35.4%	$z = .17, ns$
Moderate risk	38.7%	44.2%	$z = -1.35, ns$
High risk	25.2%	20.4%	$z = 1.42, ns$
<i>Offense type</i>			
Violent offense	60.7%	57.5%	$z = 1.16, ns$
Property offense	29.4%	32.0%	$z = -.97, ns$
Sub/drug offense	2.8%	3.2%	$z = -.48, ns$

Research question 2

Analyses related to research question 2 followed the same steps used in the analysis for the first research objective. Propensity scores were estimated using the GBM for the same set of covariates. The analytical samples for this research objective were limited to those who had criminogenic needs identified by the risk assessment tools. Approximately 81% of the DRC sample involved one or more criminogenic needs based on the risk assessment program (RAP). The reduced samples were largely identical except for the sentence length from the full samples used in the first analyses. The results of sample representativeness are presented in the last section of this research objective.

DRC youth offenders versus young adults

Propensity score estimation for the first pair converged with less than 900 iterations. Both balance statistics (standardized bias and KS statistic) reached the best estimates with 895 iterations (out of 5,000 iterations). Prior to weighting, the samples were statistically different for most of the covariates except for ethnicity, educational achievement, and learning difficulties. Applying the weights effectively reduced the imbalance in the covariates except for the substance/drug offense indicator. For instance, the proportion of black inmates was significantly different across groups, so that the standardized bias and KS statistic were greater than .20 (.849 and .303 respectively). After the weights were applied, the standardized difference was reduced to 0.164 and the KS statistic to .059, reductions of approximately 80%. Balance diagnostics of other variables can be found in Table 4-7 as shown below. Both stopping methods reached the same balance with the same number iterations and equivalent amount of reduction in effective sample size (unweighted sample size of comparison group = 1,223, weighted sample size by std. bias = 123.9, weighted sample size by ksmax = 123.9).

Table 4-7. Diagnosis of balance in individual covariates using unweighted and weighted estimates of standardized difference and KS values across DRC youths and young adults

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.849	.303	.164	.059	.164	.059
Hispanic	-.018	.002	-.092	.010	-.092	.010
Edu. achievement	-.095	.046	.034	.017	.034	.017
Learning difficulty	-.063	.013	-.048	.010	-.048	.010
Sentence length	1.541	.635	.026	.075	.026	.075
Security level	3.293	.742	.191	.041	.191	.041
Violent offense	1.875	.630	.152	.051	.152	.051
Property offense	-1.011	.251	-.058	.014	-.058	.014
Sub/drug offense	-3.708	.323	-.390	.034	-.390	.034

The proportion of inmates incarcerated for substance-related offenses had a remaining imbalance after the weighting process. Thus, weighted regression models were estimated with the calculated weights, a binary indicator of groups (youth offenders = 1, young adults = 0), access to needs-matched programs as the dependent variable, and the substance/drug offender indicator to correct for a doubly robust estimation (Table 4-8). The likelihood of starting or obtaining a referral to the programs that target appropriate criminogenic needs was significantly greater prior to weighting for the youth offenders compared to their young adult counterparts prior to weighting (DRC youth = .972, DRC YA = .814; $t = 11.36$, $p < .01$). The difference between these two groups remained significant even after the propensity score weights were applied ($t = 2.32$, $p < .05$). The result indicates that the youth offenders, regardless of accounting for the assessed needs, were more likely to start or obtain a referral to the programs that matched the criminogenic needs, compared to the young adult inmates in the same institution. On the other hand, it can be argued that this result is not significant when considering the possibility of increased Type I error due to the fact that a pairwise test performed instead of an omnibus analysis.

Table 4-8. Group means of outcome variable, unweighted and weighted differences in the means of DRC youth offenders and young adults (n = 1,617)

Outcome variable	Group means and stv.		Difference in Group means	
	DRC Youth	DRC YA	Unweighted Difference	Weighted Difference
Started or referred to the programs that target assessed needs	.972 (.165)	.814 (.389)	.158 (.014) $t = 11.36, p < .01$	.037 (.015) $t = 2.32, p < .05$

DRC youth offenders versus DYS juveniles

Next, the propensity score was estimated to match teenage inmates housed in adult prison with juveniles in DYS facilities. The two groups differed in terms of racial compositions, educational achievement, sentence lengths, and composition of property-related offenders. Specifically, juveniles in the adult prison group had more inmates consisting of racial minorities and higher security levels. The DYS sample had higher educational achievement and more property-related offenders. Due to vast differences in the covariates, the GBM model produced the best balance at around 4,900 iterations. The results were still considered reliable as they were within the specified maximum number of iterations (5,000), and the overall balance statistic showed an increasing trend after the 4,964th iteration. Incorporating the weights significantly reduced the balance statistics for one of the four covariates that was out of balance.

Specifically, the DYS sample included a greater proportion of property offenders that was reflected in the large negative standardized difference value before weighting (−.338). After weighting, the standardized difference was reduced to −.058 (reductions of 83%). However, the remaining three covariates still displayed large Standardized difference statistics and had to be controlled for again in the treatment estimation process described below⁵. The

⁵ Among the three variables with remaining imbalance, it was necessary to test sensitivity of educational achievement variable. In a similar way with the learning difficulty variable, there was a possibility that the measurement was not

first stopping method (based on std. bias) led to less reduction in the effective sample size (unweighted sample size of comparison group = 435, weighted sample size by std. bias = 40.23, weighted sample size by ksmx = 10.45).

Table 4-9. Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.309	.110	.240	.086	1.031	.368
Hispanic	.024	.003	.113	.013	.112	.013
Edu. achievement	-.729	.358	-1.043	.512	-.830	.407
Learning difficulty	.028	.006	.197	.041	.194	.041
Sentence length	-.856	.539	-1.246	.539	-.766	.460
Security level	.450	.249	-.754	.145	-1.531	.326
Violent offense	.121	.041	-.146	.049	-.102	.034
Property offense	-.338	.084	-.058	.014	-.115	.029
Sub/drug offense	.087	.008	.087	.008	.087	.008

Finally, the treatment effects of housing juveniles in adult prisons on the likelihood of receiving treatment programs that targeted identified criminogenic needs were estimated. The regression model included calculated weights, a dummy variable indicating the system (DRC = 1, DYS = 0), a binary outcome variable representing treatment receipt, and four covariates for the doubly robust estimation (Table 4-10). Before weighting, the likelihood of starting or obtaining a referral to the programs that targeted appropriate criminogenic needs was significantly greater for the DRC youth group. The difference was substantial and was supported by the statistical test (0.972 versus 0.150; $t = 18.55$, $p < 0.01$). This difference was greatly reduced, from .822 to .060, once the weights and unbalanced covariates were introduced in the model.

perfectly comparable across data sets in this variable. However, estimating the propensity score model led to further reduction in the effective sample size, indicating a less reliable fit. Instead, I estimated the weighted regression models with the weights originally estimated with the educational achievement variable but without doubly robust controlling. The result was very similar. Excluding the learning difficulty variable did not change substantive conclusion. The coefficient of treatment indicator increased slightly to .085, $t = 1.03$, still not significant.

Table 4-10. Group means of outcome variable, unweighted and weighted differences in the means of DRC youths and DYS juveniles (n = 908)

Outcome variable	Group means and stv.		Difference in Group means	
	DRC YO	DYS juveniles	Unweighted Difference	Weighted Difference
Started or referred to the programs that target assessed needs	.972 (.165)	.150 (.359)	.822 (.044) $t = 18.55, p < .01$	.060 (.084) $t = .072, ns$

Comparability of samples (DRC samples with and without identified needs)

Although technically all inmates need to be assessed with respect to their risk and criminogenic needs upon admission, not all cases were labeled to have substantial needs that needed to be addressed. Each inmate was classified on no immediate need, some need, or considerable need for improvement. Of 1,512 inmates who were less than 25 years old, 1,223 cases were evaluated to have some or considerable needs that needed to be addressed. Comparability of this subsample and full sample was examined for the generalizability of findings. Representativeness was examined by performing a series of equality of proportions and two-sample mean comparison tests. The results in table 4-11 indicate that these two samples were very similar except for sentence length. Inmates who had identified needs had slightly longer sentences than their counterparts (22.57 versus 22.36 months).

Table 4-11. Estimates of covariates and test of difference across analytic and full samples of DRC young adults

Covariates	Analytic sample (n = 1,223)	Full sample (n = 1,512)	Test of Difference
Black	54.7%	56.0%	$z = -.69, ns$
Hispanic	1.5%	1.3%	$z = .48, ns$
Educational achievement	44.8%	45.5%	$z = -.37, ns$
Learning difficulty	5.9%	5.9%	$z = -.01, ns$
Sentence length	22.57 (33.47)	22.36 (32.99)	$z = 5.56, p < .01$
<i>Security level</i>			
Low risk	79.1%	80.8%	$z = -1.09, ns$
Moderate risk	20.7%	19.0%	$z = 1.07, ns$
High risk	0.2%	0.2%	$z = .02, ns$
<i>Offense type</i>			
Violent offense	24.0%	23.7%	$z = .22, ns$
Property offense	31.7%	32.7%	$z = -.52, ns$
Sub/drug offense	33.0%	32.3%	$z = .38, ns$

Research question 3

The third research objective focused on the impact of confining juvenile offenders in adult prisons on their likelihood of engaging in institutional misconduct. Two sets of comparisons were made in order to examine whether the juveniles in adult prisons were more likely to be involved in disciplinary infractions than young adults in adult prison or juveniles in juvenile facilities. The characteristics of youths in adult prison were different from those of comparison groups for the majority of covariates. In order to account for between-group differences, ten covariates including black, Hispanic, educational achievement, learning difficulties, sentence lengths, security levels, violent/property/substance offender indicators, and a family-related needs indicator were included. A family-related needs indicator was added as a covariate in this section to reflect the strength of an inmate's social bond to his family; this bond has been found to discourage antisocial behavior both inside and outside institutional settings.

The outcome variable for this section was institutional misconduct. The data from DRC and DYS contained different levels of information with regards to institutional record.

From the integrative data analysis standpoint, the rates of formally detected misconduct was commonly available. The DRC record also provided the nature of misbehavior. Thus, it was possible to compare the rates of officially-reported misconduct across different subtypes (such as violence- property-, or substance/drug-related misconduct).

The propensity score weighting process resulted in a reduction in the discrepancy for almost every covariate, and the specific balance statistics are presented below in respective sections and tables. In the same way as the previous sections, weighted regression analyses were performed to estimate the treatment effects. The unweighted and weighted likelihood estimates of being involved in misconduct in an adult prison were compared against two comparison groups. The DRC youth offenders were significantly more likely to be found guilty of any type, violence-, property-, and substance/drug-related misconduct compared to both comparison groups. However, weighted estimates revealed that the treatment group did not significantly differ on the rates of property and substance/drug related infractions from the young adult offenders in the adult prisons. Specific procedures and results are discussed in the following sections.

DRC youth offenders versus young adults

Table 4-12 presents an overview of the propensity score estimation process for the DRC samples. As shown in the first two columns, it is apparent that the youth offenders differed significantly from the young adult group, which is reflected as a large standardized difference and KS values (bold if greater than .20). They were predominantly black and violent offenders with higher security levels and greater sentence lengths. There were more non-violent offenders among the young adult group. The GBM model converged successfully within the maximum number of specified iterations (5,000). The best balance was obtained at 903

iterations from either stopping method.

The greatest amount of reduction was found in security level; it was reduced from 3.293 to .192, yielding approximately 94% reduction in bias. One covariate, substance/drug offender indicator, remained imbalanced after the weighting process. Although not reflected in the KS values, this covariate yielded standardized difference values greater than .20 (absolute value .395) and had to be controlled again in the treatment estimation process. The weights produced by the first stopping method were used in the subsequent analyses.

Table 4-12. Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and young adults

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.849	.303	.165	.059	.165	.059
Hispanic	-.018	.002	-.092	.010	-.092	.010
Edu. achievement	-.095	.046	.034	.017	.034	.017
Learning difficulty	-.063	.013	-.048	.010	-.048	.010
Sentence length	1.541	.635	.026	.075	.026	.075
Security level	3.293	.742	.192	.041	.192	.041
Violent offense	1.875	.630	.153	.051	.153	.051
Property offense	-1.011	.251	-.057	.014	-.057	.014
Sub/drug offense	-3.708	.323	-.395	.034	-.395	.034
Family needs	-.048	.016	-.116	.038	-.116	.038

Next, the treatment effect of juvenile status in adult prison on the likelihood of misconduct was estimated (Table 4-13). The regression models included a dummy variable indicating juveniles (DRC youth = 1, DRC YA = 0), propensity score weights, a dummy-coded outcome variable for institutional infractions (Yes = 1, No = 0), and the sub/drug offender indicator that adjusts for any remaining imbalance.

Unweighted means the first set of columns indicated that the youth offenders were associated with higher odds of different types of detected misconduct compared to young adults in the same facility. What is noticeable in the table below is that a very large proportion of

youths engaged in and were found guilty of institutional misbehavior (.921), especially in the case of violent misconduct (.835). Corresponding estimates of these outcome variables for the young adults were much smaller, and the difference was statistically significant (any type = .600, $t = 11.84, p < .01$; violent = .354, $t = 16.60, p < .01$). Less than half of youth offenders engaged in property- and substance-related misconduct (.454 and .337, respectively). Yet, the corresponding prevalence for the young adults were substantially low with statistically meaningful difference (property = .156, $t = 12.20, p < .01$; substance = .100, $t = 11.20, p < .01$).

When propensity scores weights were applied, the differences in the likelihood of misconduct were greatly reduced. Specifically, juveniles in adult prison had higher rates violent misconduct when the difference in the characteristics were controlled ($t = 3.74, p < .01$). However, compared to similarly-aged young adults, the impact of confining juveniles in adult prisons on the likelihood of other misbehavior became smaller when between-group differences were taken into account. The sizes of the difference for any reported misconduct and other nonviolent misconduct were greatly reduced by the weighting process.

Table 4-13. Group means of outcome variables, unweighted and weighted differences in the means of DRC youths and young adults (n = 1,617)

Outcome variables	Group means and stv.		Difference in Group means	
	DRC Youth	DRC YA	Unweighted Difference	Weighted Difference
Having engaged in any misconduct	.921 (.013)	.600 (.014)	.323 (.027) $t = 11.84, p < .01$	.073 (.033) $t = 2.20, p < .05$
Having engaged in violent misconduct	.835 (.018)	.354 (.013)	.480 (.028) $t = 16.60, p < .01$	.166 (.044) $t = 3.74, p < .01$
Having engaged in property-related misconduct	.454 (.025)	.156 (.010)	.297 (.024) $t = 12.20, p < .01$	.111 (.052) $t = 2.14, p < .05$
Having engaged in substance/drug related misconduct	.337 (.023)	.100 (.008)	.235 (.021) $t = 11.20, p < .01$	.069 (.049) $t = 1.40, ns$

DRC youth offenders versus DYS juveniles

The rates of disciplinary infractions were compared between juveniles confined in adult prisons and youth facilities (Table 4-14). Before weighting, the DRC sample consisted of higher proportions of black inmates and violent offenders with higher security levels. Also, as reflected in large negative balance estimates, smaller proportions of juveniles in the DRC facility were non-violent offenders, had family-related criminogenic needs, and lower levels of educational achievement. Compared to the first pair above, it took more iterations to estimate the GBM for this pair. The best balance value appeared at 2,728 iterations when the model was set to minimize the average standardized bias, and at 1,013 iterations when the model was set to minimize the maximum KS value. The results were considered reliable because the best overall balance was achieved within the maximum number of iterations specified in the model (5,000), and the balance measure showed an increasing trend, indicating that additional iterations would not have changed the results.

Two stopping methods produced different results in this pair. Although it took fewer iterations to obtain the best balance with the second method (minimize the maximum KS value), the first method (minimize the average standardized bias) led to more stable estimates. Also, the reduction in the effective sample size was smaller with the first method (unweighted sample size of comparison group = 435, weighted sample size by std. bias = 17.34, weighted sample size by kmax = 9.73). Therefore, the estimates displayed in the second set of columns are referenced in the subsequent steps. A number of covariates displayed remaining imbalance after the weighting. Indicators of black, violent offenders, educational achievement, learning difficulties, and sentence lengths had balance estimates greater than .20. It was necessary to

control for these variables twice by including them in the treatment estimation process below⁶.

Table 4-14. Diagnosis of balance in individual covariates using unweighted and weighted estimates across DRC youths and DYS juveniles

Covariates	Unweighted Estimates		Weighted Estimates (std. bias)		Weighted Estimates (ksmax)	
	Standardized difference	KS	Std. difference	KS	Std. difference	KS
Black	.667	.240	.227	.082	.442	.159
Hispanic	-.032	.004	.088	.010	.045	.005
Edu. achievement	-.468	.231	-.223	.110	-.052	.025
Learning difficulty	.107	.022	.204	.042	.200	.042
Sentence length	-.012	.133	-.045	.217	.015	.166
Security level	.259	.309	.105	.032	.123	.042
Violent offense	.794	.265	.715	.239	.474	.159
Property offense	-.927	.229	-.134	.033	-.350	.087
Sub/drug offense	-.232	.020	-.033	.003	-.282	.024
Family needs	-1.461	.474	-.001	.000	-.079	.026

Finally, the treatment effect of confining juveniles in adult prison versus youth facilities is compared in Table 4-15. Again, a greater proportion of DRC youths engaged in disciplinary infractions compared to the same-aged youth in juvenile facilities (.921 versus .588), and the difference was statistically significant without weighting ($t = 11.00, p < .01$). Weighted differences were estimated using the regression model, including the propensity score weights, a dummy indicator of DRC youth offenders, an outcome variable representing disciplinary infractions (Yes = 1, No = 0), and five covariates that had a remaining imbalance after the weighting. The difference was slightly reduced (.332 versus .293) but was still statistically significant ($t = 3.45, p < .01$). Even when relevant covariates are controlled, housing juvenile offenders in the adult prison was associated with higher rate of detected misconduct.

⁶ This time both educational achievement and learning difficulty exhibited remaining imbalance. Estimating the propensity score model without the educational achievement variable led to a worse model fit (fewer effective sample size). Another alternative model without the learning difficulty led to a slightly better one (small increase in the effective sample size). Nonetheless, this new set of weights led to the same set of covariates (edu. achievement, black, security level, and violent offense) exhibiting remaining imbalance and very little change to the regression coefficient (.268, $t = 3.21, p < .01$)

Table 4-15. Group means of outcome variable, unweighted and weighted differences in the means of DRC youths and DYS juveniles (n = 807)

Outcome variables	Group means and stv.		Difference in Group means	
	DRC Youth	DYS juveniles	Unweighted Difference	Weighted Difference
Having engaged in any misconduct	.921 (.013)	.588 (.023)	.332 (.030) $t = 11.00, p < .01$	.293 (.085) $t = 3.45, p < .01$

The estimates of misconduct differences are sensitive to the time spent in correctional facility. It is possible that the DRC youths had higher rates of misconduct because their average sentence length was longer than the DYS juveniles. The sentence length was included in the propensity score analysis model as a covariate. An additional analysis was conducted to further assess the potential that this might impact the estimates. The table below illustrates the results when the time frame of misconduct was reduced to match the sentence length of DYS (Table 4-16). The purpose was to examine the rate of misconduct that occurred from 2010 to 2011. The cases that were released before 2010 and could not have engaged in misconduct during the specified time frame had to be removed from the analysis. The reduction in the subsample (n = 767) reflects this exclusion criterion. The rate of misconduct was slightly lower for this subsample (.921 versus .858), and the magnitude of both unweighted and weighted differences were attenuated. Still, the weighted difference was significant at .05 level, and implied that the time spent in facility does not entirely explain the difference in misconduct rates.

Table 4-16. Group means of outcome variable, unweighted and weighted differences in the means of DRC subsample and DYS juveniles (n = 767)

Outcome variables	Group means and stv.		Difference in Group means	
	DRC Youth	DYS juveniles	Unweighted Difference	Weighted Difference
Having engaged in any misconduct	.858 (.018)	.588 (.023)	.269 (.030) $t = 8.30, p < .01$	.188 (.081) $t = 2.33, p < .05$

In sum, results from the propensity score weighted analyses revealed the following findings. First, regardless of the criminogenic needs, juvenile inmates in the adult system had greater access to educational/vocational/life skills programs and similar levels of access to other types of programs compared to young adults. The DRC youths still had a greater access to programs that targeted appropriate criminogenic needs even when the sample was limited to those who had substantial needs for improvement in assessed domains. Compared to the juvenile inmates confined in the juvenile facilities, the DRC youth group was more likely to be involved in various types of institutional programs regardless of their needs. However, they did not differ from the DYS juvenile group in terms of the access to the programs that targeted appropriate criminogenic needs. Finally, the DRC youth group had higher rates of violent misconduct than the young adults and any type of officially-reported misconduct than the DYS juveniles. The implications of these results are discussed in the next chapter.

CHAPTER 5

DISCUSSION

Introduction

The purpose of this study was to add insight to the understanding of juvenile transfer and incarceration. To that end, data of inmate records collected from an adult correctional institution and juvenile residential facilities were combined and examined. The previous chapter presented the results of descriptive and multivariate analyses performed on three groups: (1) teenage inmates housed in an adult prison; (2) teenagers housed in juvenile residential facilities; and (3) young adults confined in an adult prison ($n \sim 2,400$). The descriptive statistics presented the means and proportions of covariates by groups. Study groups differed with respect to most of the covariates in the analysis, demonstrating the need for propensity score adjustments before making comparisons.

Second, propensity score estimations and weighted regression analyses were conducted to address three research questions. Following the framework for comparing multiple groups by McCaffrey et al. (2013), propensity scores were estimated separately for each comparison pair (DRC youths versus young adults or DRC youths versus DYS juveniles). Thus, each research objective included two sets of propensity score weights estimated for DRC youths versus young adults or DRC youths versus DYS juveniles. Next, the mean differences of covariates before and after weighting were examined to test the balance between the treatment and comparison group. The goal was to reduce the mean difference to statistical equivalence for all covariates. Balance was achieved in the majority of covariates. Those covariates with remaining imbalance after weighting were included in the weighted regression analysis to ensure any remaining imbalance would not bias the estimated treatment effect. These steps were taken to

assess the differences in correctional program participation and misconduct across groups in different institutional setting net of control variables. This chapter discusses the findings relative to the current literature, and proposes implications, limitations, and suggestions for future research.

Summary of key findings

Findings from descriptive statistics

A descriptive analysis of the full sample (n = 2,420) identified similarities and differences across groups for study variables (Table 4-1). The analysis included calculations of the proportion of cases on each attribute of covariates followed by a test of proportions to examine if the comparison groups differed from the treatment group. Overall, the groups were more similar in ethnic composition and learning difficulties but diverged with respect to other characteristics. Additionally, each comparison group was similar to the DRC youth group with respect to different characteristics.

Among the groups, the DRC youth group showed the most disproportionate concentration of Black inmates. The proportion of Hispanic inmates constituted a very small part of any of the groups. In terms of educational achievement and learning difficulties, the DRC youths showed the most disadvantaged profiles. They had the least proportion of inmates who attained the grade level appropriate for their age and second-highest proportion of inmates with learning difficulties. In contrast, DYS juveniles had the highest proportion of offenders who were at a grade level higher or appropriate for their age. Combined, the DRC youth group represented the group of racial minorities with the lowest educational attainment and some learning difficulties. The young adult group was relatively more similar to this group on these characteristics, while DYS juveniles had higher educational attainment and less learning

difficulties.

In contrast, DYS juveniles showed more similarities with DRC youths with respect to offense-related characteristics (Table 4-1). The majority of cases for these groups were associated with the moderate risk level (as opposed to low or high levels) and violent offenders. The other group, consisting of young adults, included low security level offenders with almost equal distribution of violent, property, and drug/substance-related offense types. This finding is consistent with the fact that both waiver to adult court and DYS facilities are options for the most serious offenders among teenagers. That is, the DYS facilities constitute the most harsh placement for the offenders sentenced in juvenile courts, and the most severe sentencing option for the transferred juveniles is incarceration in adult facilities. A small percentage of low risk offenders and a high percentage of violent offenders in these two groups reflect this case flow system. Conversely, the composition of the young adult group represents the fact that the Madison CI is a medium security facility for level 1 and 2 inmates. Most of the sample for this group included low risk level and non-violent offenders. Together, these findings suggest that the DYS facilities and transfer-incarceration are used for violent, serious offenders. The results of the propensity score weight analyses are presented below and are broken down by research questions.

Research objective 1

The first research question (RQ) asked whether there are differences in access to treatment programs by group. According to the model of justice framework, it was expected that the juvenile system would provide greater levels of access to institutional programs. In its founding principle, the juvenile justice system places a greater emphasis on rehabilitation and treatment relative to the criminal justice system. This treatment plan is based on the recognition

of the developmental difference in adolescence and adulthood, reduced culpability at an earlier age, and greater responsiveness to adolescence-related changes. If the models of justice hold in the correctional stage, youth offenders in the adult system would be less likely to receive correctional services compared to same-aged offenders in the juvenile system. Conversely, the adult system would not likely be as responsive to rehabilitation and treatment as the juvenile system according to the models of justice framework.

In answering the first part of the question, the propensity score weights that minimized the overall value of standardized bias produced more stable estimates and were incorporated into the weighted regression analysis. Contrary to the hypothesis, the youth offenders were more likely to be involved in prison programs compared to young adults based on weighted estimates. The findings were more complex once subcategories of programs were examined. Prior to weighting, a greater proportion of youth offenders were involved in CBT/counseling/mental health-related programs and educational/vocational programs while being less involved in substance and recovery programs. Once between-group differences were addressed, the youth offender group did not differ from the young adult group with respect to the likelihood of obtaining access to CBT/counseling/mental health programs and substance/recovery programs. They were still more likely to be involved in educational/vocational/life skill programs compared to young adults even after adjusting for between-group characteristics. In summary, the hypothesis that juveniles in adult prisons would be less likely to be involved in prison programs compared to young adult counterparts was not supported. They were either participating in the programs at the same rate or becoming more involved in certain programs compared to young adult inmates with similar profiles and offense-related characteristics.

The second part of the question was answered using the same analytical process.

Propensity score weights that were calculated by minimizing the average standardized bias also produced more stable estimates in this pair. Before weighting, the DRC youth group was associated with greater levels of involvement in prison programs, except for the substance/recovery category. This trend held for the most part even after incorporating the propensity score weights. Compared to juvenile offenders with similar profiles and offense-related characteristics, youth offenders in adult prisons either did not differ on the likelihood of treatment involvement (in the case of substance/recovery programs) or had greater levels of involvement in the case of overall, CBT/counseling/mental health, and educational/vocational/life skill programs. Again, the research hypothesis was not supported in this section.

Together, the results revealed that youths were not too disadvantaged in terms of gaining access to treatment programs in general or specific types of programs within an adult setting. These findings could reflect the experience at the surface level, as the needs of inmates were not taken into consideration. It is possible that the comparison groups did not have the need to receive certain services and, therefore, were not participating in those programs as much. For example, the groups differed on the average level of education attainment. In fact, less than half of the DRC inmates had obtained a GED certificate while more than 60% of DYS juveniles were at satisfactory grade level for their age. The second research objective took assessed needs into consideration.

Research objective 2

The principle of effective correctional intervention asserts that treatment programs are most helpful when they match the criminogenic needs of recipients. The data included risk assessment information that was evaluated by the assessment tool used in each justice system.

These tools identified whether an inmate had significant needs to be addressed in the areas of family, peers/social network, education/employment, prosocial skills, substance use, and values/beliefs/attitudes. The data also provided the specific names of institutional programs at which the inmates received treatment during the data collection. Each program was categorized into subcategories depending on the criminogenic needs it targets. If a program could address different needs, it was classified into multiple categories. Through this process, it was possible to code whether an inmate received a program that matched the criminogenic needs identified by the risk assessment.

Similar to the approach taken for the first research objective, each hypothesis was assessed in three steps: propensity score estimation with the GBM, assessment of balance, and weighted regression analysis. The results for the DRC pair diverged from the findings of the first research objective. Unweighted likelihood of participating in any institutional program was greater for the young adults and was rendered non-significant after weighting in the first RQ listed above. When only the needs-matching programs were considered in this section, the youth offender groups had a greater level of involvement, both unweighted and weighted. Phrased differently, when the young adults were weighted to resemble youth offenders in the same facility, they were less likely to start or receive a referral to programs that targeted their criminogenic needs.

The results for the second pair did not fit the hypothesis. In the findings for RQ1 above, the DRC youths displayed a greater level of access to any programs. This trend did not hold for the receipt of needs-matching programs. Before weighting, a greater proportion of DRC youths were involved in programs that target assessed needs. However, the propensity score weighting process attenuated the difference greatly and eliminated the difference in the

outcome. After adjusting for between-group differences, it was found that the two systems did not differ on the provision of programs that target criminogenic needs. In summary, the DRC youths were not disadvantaged in terms of receiving the treatment/programs that address their needs compared to other groups.

Research objective 3

The second aspect of the correctional experience examined in this study was the odds of misconduct. Given the inverse relationship of age and misbehavior combined with the correctional setting that is less favorable to adolescents, it was expected that youths in the adult setting were at the greatest risk of disciplinary problems compared to other groups. For individuals in a similar developmental stage, incarceration in a setting that was originally built for adults would be more challenging for the juveniles.

The results were obtained following the same steps for the previous research objectives. As expected, DRC youth offenders had a greater likelihood of engaging in misconduct compared to young adult. The difference was statistically significant although weighting reduced the size of differences across groups. Regardless of differences in personal characteristics, juveniles were subject to greater odds of disciplinary problems when they were confined in the adult system. Incorporating the propensity weights attenuated some of the differences in the likelihood of misconduct between youth offenders and young adults and rendered the results for property-related and substance/drug-related misconduct not significant. Nonetheless, a greater proportion of youth offenders engaged in violent misconduct.

One question exists as to whether the difference in the involvement in disciplinary problems is attributable to the age differences. The second part of the comparison was made to assess such a question. When the age of the cases was set at the same range, the DRC youths

were still subjected to greater involvement in disciplinary problems compared to the counterparts in the juvenile system. This finding is consistent with previous studies in which it was shown that teenage inmates faced a higher risk of misconduct, victimization, abuse, and suicide in adult correctional facilities (Beyer, 1997; Daniel, 2006; Kolivoski & Shook, 2016; Kuanliang et al., 2008; McShane & Williams III, 1989).

Discussion of findings and implications

This dissertation began with two inquiries: to what extent are the philosophies of juvenile justice reflected at the correctional stage and whether the adult prisons fully impose the criminal justice model for incarcerated youths. Taken together, the results suggest that the youth unit has become more like the juvenile system in terms of the treatment and service allocation but could not entirely offset the negative impact of youths' contact with the adult system. Juvenile inmates were provided with similar levels of access to programs or often a greater range of services in the adult prison. At the same time, they showed the highest rates of officially reported institutional misbehavior compared to the offenders of the same age in juvenile residential facilities and young adult inmates in an adult prison. The increasing emphasis on rehabilitation in the correctional system in Ohio seems to have contributed to creating an environment that mimics the juvenile facility within the adult prison. On the other hand, it appears the behavior management of youth offenders in the adult setting followed the criminal justice model rather than the juvenile justice model. Implications are discussed below in greater detail in relation to the research setting.

At the time of data collection, the juvenile inmates were housed in a compound that is separate from the general population in Madison CI. It was briefly mentioned in the previous chapter that the adult system in Ohio has increasingly adopted rehabilitation as the guiding

principle. Specifically, such a trend is reflected in recent policies that have extended the use of evidence-based assessment tools and correctional programs. There is greater recognition for the link between providing appropriate treatment services, better adjustment to an institutional setting, and improved outcome after release from the correctional system in Ohio. Such effort to improve institutional programming environment might have reached the transferred population as well and triggered efforts to compensate for housing teenagers in prison by offering more programs. In fact, one of the CIIC reports noted that there was a concern that adult inmates may not be receiving sufficient attention because the staff were handling the special education needs of the juvenile unit at Madison CI (Correctional Institution Inspection Committee, 2011). This statement agrees with Kupchik's (2006) observation of the sequential model of justice in handling transferred juveniles. Just as he found criminal justice court actors relying on the components of juvenile justice model during the sentencing stage, the adult correctional facility might have adopted a more rehabilitative approach in managing incarcerated juveniles.

This finding could also be attributable to the greater resources available in the adult system. By comparison of size, the DRC oversees 50,237 incarcerated population, while there are 517 youths in DYS facilities on average. The adult system serves a more diverse population for a longer period, and consequently, need to be able to provide a greater range of services. For example, the ODRC inmates were receiving various anger management treatments, such as Cage Your Rage, Anger: Creating New Choices, Stress and Anger Management, and other uncategorized anger management programs. On the other hand, the anger management programs provided at the juvenile facilities are centered upon building coping skills and understanding their anger. The distinction was also substantial with regards to substance abuse

programs. The adult system provides varying degrees of substance abuse interventions ranging from outpatient program to intensive treatments. In fact, the Madison CI was noted as excellent in programming quality, access to medical staff, and mental health services (Correctional Institution Inspection Committee, 2011). This finding is consistent with Kupchik and Fagan's (2011) observation in which the adult facilities were rated higher for service availability than were the juvenile facilities. Together, these findings imply that the transferred youth may benefit from a greater range of services and resources available in the adult system.

The criminal justice system in Ohio has been proactive in adopting evidence-based methods to gauge an individual's risk through risk assessment tools, enhancing the use of programs shown to be effective by empirical tests, and connecting the results of the assessment with service delivery. Particularly, the findings from the second research objective lend support for this trend. For both groups in the DRC facility, more than 80% of the inmates were receiving services that match their criminogenic needs. This finding is encouraging given the recent evidence from a state-wide study on prison treatment plan and recidivism. When the inmates completed the programs that were related to their assessed needs, especially in the case of personal/emotional need and community functioning, they were less likely to be re-incarcerated after release (Long, Sullivan, Wooldredge, Pompoco, & Lugo, 2019).

In contrast, the DYS has gone through a restructuring of its system that resulted in the reinvestment of the budget for community-based programs and the closing down of residential facilities. One of the state-level initiatives, Reasoned and Equitable Community and Local Alternatives to the Incarceration of Minors (RECLAIM) Ohio, was first launched in 1994 and has continuously expanded since. One of its impacts on the system has been reallocating the budget for residential facilities to enhance alternatives in the community. As a result, the

juvenile population confined in residential facilities under DYS management has decreased from more than 2,000 in 1992 to approximately 500 in 2013 (Department of Youth Services, 2018). It is possible that the organizational climate impacted the conditions of confinement (Reddington & Sapp, 1997). Similar to what Bernard and Kurlychek (2010) noted as a “great divide between good intentions and actual practice” in the juvenile justice system, limited resources, budgetary concerns, and opinion of leadership can influence the implementation of the treatment ideal.

At the same time, the youths in adult prison were more likely to be involved in disciplinary problems. This finding is somewhat consistent with Kupchik’s (2007, 2011) research on juvenile and adult correctional facilities in New York and New Jersey. Relative to juvenile facilities, adult facilities in Ohio had the highest availability of institutional services. Yet, young inmates in adult prisons were most likely to feel threatened and report the highest level of psychological distress. Assuming the same set of rules were enforced to young adults and youth offenders, the findings suggest that the conditions of confinement were more challenging for the teenagers. The contrast was the most significant in the likelihood of violent misconduct, which includes causing physical harm to another, fighting with or without weapons, and physical resistance to direct order. More than half of the youth offenders in adult prison were involved in these acts. This finding broadly supports the findings from previous studies in which teenage inmates felt unsafe and perceived more negativity and psychological distress while in adult institutions (Bishop et al., 1998; Lafree, 1999).

Given the effectiveness of certain prison programs in reducing the odds of misconduct for the general prison population, the results of this research raised the possibility that the juvenile population in adult prison might respond differently. Perhaps providing many programs is not

sufficient by itself in improving adjustment for the juvenile inmates in an adult prison. This combination of findings raises the importance of “fit” between the correctional environment and developmental needs (Mulvey & Schubert, 2012). While there is an increasing attempt to enhance rehabilitation in the adult system, the juvenile model of justice is inherently more conducive to minimizing the developmental costs of incarceration. Some of these efforts include symbolic, conceptual aspects such as the naming of the institution (such as juvenile residential facilities are called “schools”), a greater focus on maintaining or strengthening ties with parents (as opposed to spouses), or the use of an incentive-based system to manage behavior (such as DYS’s use of SBBMS).

It is possible that the nature of the setting in the adult system may be offsetting the effect of programming. In the comparative studies reviewed earlier, the youths appreciated the social climate and positive staff attitude of juvenile institutions even though the availability of service was either similar or greater in the adult system. Bishop et al. (1998) mentioned that the youths in adult prisons perceived that the main concerns of the staff was maintaining control rather than promoting changes in them (the youths). There was a concern regarding disrespect and abuse of authority from staff at Madison (Correctional Institution Inspection Committee, 2011). Assuming the same set of rules were imposed across juvenile and adult population incarcerated in the Madison CI, the teenagers more likely to be involved in reported violent misconduct. The staff may not be accustomed to interacting with the adolescent population as much compared to the juvenile system. This finding highlights the claim that the setting might not fit well with conditions for the youth who are going through physical and psychological changes (Bishop & Frazier, 2000; Mulvey & Schubert, 2012).

In fact, the impact of identities and values shared by prison population on creating the

confinement condition is well documented in Jerome G. Miller's (1991/1998) *Last One over the Wall*. His attempts to expand therapeutic services for youth in the justice system were limited in part due to resistance from punitive-oriented employees. They identified their roles as managing violent youngsters in a secure setting, and this orientation impacted the manner of staff-inmate interactions (Miller, 1998). Relatedly, the perception of DYS juveniles toward staff and organizational policy where almost all youth reported to have felt safe, fair treatment, and appropriate interventions in the facility (Correctional Institution Inspection Committee, 2013a) can be recalled. As observable from the differences in terms used in the juvenile and adult systems, the former is doing relatively better in keeping the experience less judgmental and labeling than the adult system. It is possible to draw a parallel between the use of different terms for the processes in juvenile and adult systems (such as petition versus indictment), and the Strength Based Behavior Management System used in the DYS implies a more informal and nurturing approach than the Rule Infraction Board system used in an adult prison.

It is encouraging that there is increasing recognition of the importance of evidence-based practices. The literature suggests that serious offenders are responsive to treatments and services that are evidence-based (Howell et al., 2013; Lipsey & Wilson, 1998; Loeber et al., 2013; Steinberg, 2007), and juveniles in deep-end facilities found intensive treatment programs to be helpful (Bishop et al., 1998; Lane et al., 2002). Nevertheless, it is important not to lose sight of the possibility that juvenile facilities provide a better option for teenage offenders by avoiding an unnecessarily adversarial environment and a threat to personal safety and through minimizing symbolic messages that might negatively impact on a youth's identity. The current study findings echo Mulvey and Schubert's (2012) argument about unintended, less apparent issues and challenges around incarcerating youths in adult facilities (such as the symbolic

importance of retribution inherent in the adult system) that are faced in investing in observable changes to the institutional structure to make it more appropriate for adolescents.

Overall, this dissertation raised important questions about youthfulness in the intersection of juvenile and adult justice systems. Contrary to increasing awareness of the critical nature of adolescence and corresponding sensitivities about punishing youths, the practice of housing juvenile offenders in adult prisons seems to result in complicated consequences both for the transferred youths and adult inmates in the same facility. As the criminal court did worse in making developmentally sensitive decisions during the sentencing stage for the transferred juveniles even under the hybrid model of justice in New York, the findings of this study confirms the idea that “recreating the juvenile system within the adult system” is unlikely to be successful at the correctional stage. Following the end of the “Get Tough” era, many states moved in more lenient direction even for transferred juveniles. The number of juveniles waived to the criminal court via judicial waiver has continuously decreased since early 2000s and now reaches less than half of 1990s statistics. Initiatives have been implemented to separate incarcerated youth from adult inmates and guidelines have been set to improve the conditions of confinement.

Despite these attempts, data from 2011 to 2014 used in this study indicate that youths do not respond well to the adult correctional setting. In answering these important research questions, the present study benefitted from the unique opportunity to secure a sample of teenage offenders incarcerated in adult prison and make a respective comparison groups across systems. A key strength of this study comes from the data that contained similarly situated samples with comparable characteristics and enabled robust statistical analyses of system-level impacts. Using the objective records supplemented with organizational surveys, this dissertation adds support to contemporary movements to expand the legal boundaries of youthfulness. Even

though the adult system did slightly better in providing a variety of programs, it is unclear to what extent these programs reflect the consideration of youth. Considering the fact that misbehavior often disrupts successful completion of institutional programs, the higher misconduct rates of youth in adult system has profound implications for the transfer discussion.

Harsher punishment is part of the intended consequence of transfer. The current practice may also be preserving the juvenile justice system by removing youth deemed to be beyond rehabilitation. On the other hand, the present study confirmed the existence of what Mears (2003) identified as unintended consequences of transfer. Reflected in the racial composition, it was clear that minority youth were disproportionately involved in the transferred and incarceration population. Youths in adult prison were also involved in higher odds of violent misconduct, which could also translate to an increase in the likelihood of victimization. These unintended negative impacts are likely to offset any potential benefits from greater resources in the adult system. Again, the findings strengthen the argument for reconsidering the practice of processing and housing juveniles in adult justice system.

Limitations and future research

Readers should be mindful of the nature of data and sample in interpreting the findings. The present study used official records from male inmates housed in residential correctional agencies in a single state. Several measures were taken to strengthen the advantage of using these data: (1) integrative data analysis framework was used to ensure an effective combination of different data sets; (2) propensity score analysis was supplemented with the doubly robust estimation to exclude confounding effects of covariates; and (3) subjective opinions of correctional experience were obtained from public reports. Still, the findings should be understood with the consideration of standard limitations of official record and propensity score

weighting analysis.

There are a number of ways to theoretically expand the present study. First, the two main domains of interest, treatment and misconduct, were examined independently. In reality, these domains form an interrelated relationship. It is possible the provision of services helps reduce the misconduct or the misconduct may significantly hinder the effectiveness of services. It is worthwhile examining the way in which the interplay of these two domains can impact incarcerated youth. Second, it is necessary to examine the experience of DRC youth more closely. The current research only examined the availability of programs. Further research should focus on the quality and fidelity of programs available to the youth in adult prison. For the misconduct domain, the assumption was that the institutional rules were enforced in the same way for the youth and young adults in Madison CI. A closer examination is necessary to rule out differential rule reinforcement in studying the system-level impact.

Conclusions

This dissertation examined the correctional experience of youth incarcerated in adult prisons. The purpose was to investigate the extent which the juvenile justice philosophies are reflected at the correctional stage for the transferred juveniles. In order to examine whether an adult prison imposes criminal justice orientation for the youth, approximately 2,400 individuals housed in juvenile and adult institutions were matched and compared on their involvement in prison programs and reported misbehavior. Despite the limitations mentioned in the previous section, it is possible to draw the following conclusions. First, the transfer system in Ohio was primarily sending racial minority youth who committed a violent offense. This group had the most disproportionate amount of black violent offenders compared to the other groups.

Notably, DYS juveniles exhibited more similarities with DRC youths in terms of offense-related

characteristics; these two groups consisted of a small percentage of low-risk offenders and a high percentage of violent offenders.

Second, juveniles in adult prisons were not completely disadvantaged in gaining access to necessary programs. Their levels of access to prison programs were in general similar to those of young adults in adult prisons and greater than those of juveniles in juvenile facilities. Furthermore, juveniles in adult prisons were more likely to be involved in programs that targeted reducing identified criminogenic needs compared with either one of the comparison groups. It is possible that recent efforts to enhance rehabilitation in the criminal justice system in Ohio may have promoted access to treatment programs in prison. Even so, the juvenile offenders were more likely to be involved in officially reporting misbehavior in the adult setting. They exhibited greater involvement in overall rule infractions relative to both comparison groups. Additionally, they exhibited a higher rate of violent misconduct compared with the young adults incarcerated in the same facility.

These findings support the findings of previous studies that found more positive perceptions from the juvenile correctional system. This study made a contribution by confirming such findings with objective institutional record. Although the adult system may do better in providing necessary services, it is not certain the juveniles are fully benefiting from it. It was encouraging that the effect of recent movement in the adult correctional system to expand its rehabilitative approach, which was traditionally stronger in the juvenile justice system, has reached the transferred youth. There is a need to improve management of misbehavior of youthful population in the adult facilities, as that suggests the possibility of adjustment problems and/or victimization in these settings. In that way, this study complements the concerns raised by the literature that question the practice of confining juveniles in the adult correctional system.

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Appendix A. List of Institutional Services

CBT/Counseling/Mental health	
DYS	DRC
Anger, Aggression, and Violence Group/Individual Men Against Violence (MAV) Thinking for a Change (T4C) CBT Individual and Group sessions Coping skills Functional Thinking Core Curriculum Power of Peace Project Understanding Your Anger Crisis Intervention (MH) Psychotherapy Group/Individual Family Therapy Session	Cage Your Rage High Security Dual Diagnostic Program (SAMI) Personal Responsibility of Violence Elimination (PROVE)* Thinking for a Change RIDGE Project-Keeping FAITH Program** Anger: Creating New Choices* Commitment to Change Mental Health (labeled)* Other anger management Other mental health (incl. anxiety, bipolar, depression, abuse, coping)** Other/unspecified CBT (e.g. corrective thinking, criminal thinking errors)* SO programming Stress Management/Stress and Anger Management Moral Reasoning*

Educational/vocational/Life skills	
DYS	DRC
Program Core A Program Core B Coping Skills Skill Set Cards Education Vocational Resources	ABLE/ABE/Literacy Advanced Job Training (AJT)/College = a college class lasting 10 or 16 weeks Apprenticeship = 1000 hours to 8000 hours Career Enhancement (CE) = 75 hours/5 week programs Career/Technology/Vocational (CTV) = 240 hours to 1800 hours GED High school** Pre-GED Transitional Education Program (TEP)* Inside Out Dad Money Smart Responsible Family Life Skills Any general education (GE) not specified Beat the Streets* Employability/Job Readiness* Beyond Anger, Connecting with Self & Others* Communication Credit/financial management First Aid/CPR/Red Cross/Safety* Life skills Parenting/Family/Marriage/Relationships

Substance abuse	
DYS	DRC
Substance Abuse Group Substance Abuse Phase 1 Substance Abuse Phase 2 Substance Abuse Education Relapse Prevention Interventions New Freedom	ADAPT (SOCF only) AOD Education & Orientation (OSP only)* Intensive Outpatient Program (IOP) Intensive Prison Program-AOD (IPP-AOD) = BECI, FPRC, LOCI, PCI* Intensive Prison Program-DUI (IPP-DUI) = MACI, NCCTF* MET & Orientation (OSP only) RS AOD Education Program Success Through Each Powerful Step (STEPS) (OSP only)* Therapeutic Community = TAPESTRY (at ORW), OASIS (at PCI), Genesis* RS Residential Unit = CCI & LOCI Victim Awareness Houses of Healing (OSP only)* Life Without a Crutch** Substance abuse unknown (e.g. Addiction cycle, Addiction & Recovery) IPP unknown* Relapse Prevention/Aftercare unknown Release Prep RS unknown (e.g. AOD unspecified) 9-5 beats 10 to life*

*YA only

** YO only

Appendix B. List of Prison Programs and Related Criminogenic Needs

DRC data (RAP assessment)

1. Education

Adult Basic Literacy Education (ABLE), Pre-GED, general education diploma (GED), advanced job training, Transitional Education, high school classes, Youth Transition

2. Employment

Apprenticeship, career enhancement, technical career training

3. Marital/Family

RIDGE/Keeping Faith, Responsible Family Life Skills, Inside Out Dad

4. Associates/Social

Thinking for a Change (T4C)

5. Substance Abuse

Intensive outpatient, Therapeutic Community, Recovery Services, Intensive Prison Program (AOD/DUI), succeeding at Home, High Security Dual Diagnosis, Recovery Services (AOD), Motivational Enhancement Training (MET), Success Through Each Powerful Step (STEPS), ADAPT

6. Community Functioning

Money Smart (FDIC)

7. Personal/Emotional

T4C, Victim Awareness, Personal Responsibility of Violence Elimination (P.R.O.V.E.), Cage your Rage, Anger: Creating New Choices

8. Attitudes

T4C, PROVE

Scale:

1-an asset to community adjustment

2-no immediate need

3-some need for improvement

4-considerable need for improvement

(1,2 = 0; not have a need in the domain) (3,4 =1; having a need in the particular domain)

DYS services (OYAS domains)

1. Family and living arrangements
Family, Family Meetings
2. Peers and social support network
T4C, Gang Intervention, Friends and Peers
3. Education and employment
Education, Life Skills, Vocational Support
4. Pro-social skills
Skill Set Cards, T4C, CBT-Prosocal Skills, Coping Skills, Costs and Consequences, Leisure Time/Structured Activity, Decision Making
5. Substance abuse, Mental health, and Personality
CBT-Personal Development, SA Education/Intervention/Evaluation, Relapse Prevention, Special Needs, Anger Management, Managing Anger & Violence (MAV), Mental Health Assessment/Management/Education, Crisis Intervention, Individual/Group Counseling
6. Values, Beliefs, and Attitudes
T4C, Values, Additional CBT, Other CBT, Empathy/Emotions, Victim Awareness, Unit management, CBT-Feelings, Attitude
7. Not sure
Unknown, Assessment, Seclusion, Other

Appendix C. List of institutional misbehavior by category

1. Violent misconduct

Causing, or attempting to cause physical harm to another (with or without a weapon)
Throwing, expelling, or otherwise causing a bodily substance/liquid/material on or at another person
Threatening bodily harm/harm to the property of another (with or without a weapon)
Extortion by threat of violence or other means
Non-consensual sexual conduct with another, whether compelled by threat of force or force
Hostage taking, including any physical restraint of another
Engaging in unauthorized group activities as set forth in the rule of admission code
Encouraging or creating a disturbance
Fighting – with or without weapons, including instigation of or perpetuating fighting
Physical resistance to a direct order

2. Property misconduct

Possession or use of money in the institution
Stealing/embezzlement property, obtain property by fraud, receive stolen/embezzled/fraudulently obtained property
Destruction, alteration, or misuse of property
Possession of property of another
Possessing contraband including any article knowingly possessed that has been altered or permission hasn't been given
Setting a fire, any unauthorized burning
Gambling or possession of gambling paraphernalia
Deal/conduct/facilitate/participate in transaction involving inmate/staff/another where payment made/promise/expected
Forging, possessing, or presenting forged or counterfeit documents

3. Substance/drug misconduct

Unauthorized possession, manufacture, or consumption of drugs or any intoxicating substance
Procure/attempt unauthorized drugs, aid, solicit, collaborate with another to procure drugs/introduce drugs into institution
Unauthorized possession of drug paraphernalia
Misuse of authorized medication
Refusal to submit urine sample, or to cooperate with drug testing, or mandatory substance abuse sanctions

Appendix D. Group means of outcome variables, unweighted and weighted differences in the means of DRC youths and DYS juveniles estimated without learning difficulty

Outcome variables	Group means and stv.		Difference in Group means	
	DRC Youth	DYS Juveniles	Unweighted Difference	Weighted Difference
Started or referred to any programs	.583 (.369)	.229 (.421)	.354 (.079) $t = 4.66, p < .01$	.389 (.112) $t = 3.47, p < .01$
Started or referred to CBT/Counseling/Mental health programs	.459 (.499)	.211 (.409)	.247 (.030) $t = 8.20, p < .01$	.295 (.085) $t = 3.47, p < .01$
Started or referred to Educational/Vocational/Life skill programs	.605 (.489)	.207 (.406)	.398 (.030) $t = 13.37, p < .01$	.463 (.082) $t = 5.60, p < .01$
Started or referred to substance and recovery programs	.019 (.137)	.193 (.395)	-.174 (.020) $t = -8.72, p < .01$	-.055 (.050) $t = -1.09, ns$