



# OJJDP

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## Editor's Note

We are pleased to present the 10<sup>th</sup> issue of *The Journal of Juvenile Justice* (JOJJ). The first part of this issue explores the variables that are associated with contact with the juvenile justice system and recidivism for youth. Calleja and colleagues evaluate reentry services provided through Second Chance Act Juvenile Reentry funding. The authors find that specialized reentry services that incorporate case management, and substance use and functional ability assessments, were more effective than basic reentry services. Comparing 117 male juvenile offenders who received specialized services with a control group of 156 male juvenile offenders receiving basic reentry services, Calleja and colleagues found that at a 2-year follow-up, control group participants recidivated at more than two times the rate of the experimental group. Nonsexual offenders were six times more likely to recidivate than sexual offenders. Van Wormer and Campbell evaluate the Fast Accountability Skills Training (FAST) program in which youth who violate probation receive two sessions of accountability skill development instead of a formal hearing and a stay in detention. The authors found that FAST does not reduce recidivism or future probation violations, but suggest that an increase in the number of sessions offered in the program may be more effective. Robison and colleagues used state administrative databases from 1996–2012 in Louisiana to examine a sample of 615,515 public school students for variables that were major predictors of juvenile justice contact. The authors found that school expulsion, male gender, prior contact with the Louisiana Office of Juvenile Justice and grade failure are major predictors of further contact.

In addition to the three articles detailed above, this issue also offers an examination of the reasons for the 20% turnover rate among correctional officers in juvenile facilities; research into distinct patterns of trauma and adversity found among youth involved in the justice system; an examination of research and testing of Disproportionate Minority Contact (DMC) prevention, decision-making, and treatment services; a comparison of masculine beliefs held by incarcerated sex abusers and juveniles incarcerated for other offenses; and, finally, a comparison of the mental and behavioral health profiles of male and female adolescents placed in intensive, home-based treatment.

As always, we are interested in your feedback on this issue. We also encourage you to consider publishing your research in the *JOJJ*. Submissions are accepted on a rolling basis. We look forward to hearing from you.



**Patricia San Antonio, PhD**  
Editor in Chief, *JOJJ*

# Reducing Juvenile Recidivism Through Specialized Reentry Services: A Second Chance Act Project

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*Keywords: offender, reentry, adolescent, recidivism, Second Chance Act*

## Abstract

The purpose of this study is to examine the effectiveness of specialized reentry services compared to basic reentry services (i.e., treatment as usual). To do this, 117 male juvenile offenders receiving specialized reentry services through Second Chance Act Juvenile Reentry funding were compared to 156 male juvenile offenders receiving treatment as usual reentry services. The 273 participating youth ranged in age from 13 to 18 years at admission and were placed in a secure residential facility due to the severity and/or chronicity of their crimes that included crimes against persons, sexual offenses and property crimes. Specialized reentry services provided to the participants consisted of standardized assessment of substance abuse and functional ability, as well as individualized case management for prescribing dosages of reentry services to address each identified treatment need. Frequency analyses were used to examine recidivism rates between the

groups at 2-year followup, and logistic regression with stepwise and backward variable selection methods was used to assess the predictive value of treatment type and offense type on recidivism. Control group participants recidivated at more than double the rate of those who received specialized reentry services. Nonsexual offenders were more than six times more likely than sex offenders to recidivate.

## Introduction

Being able to successfully treat adolescent offenders continues to present a challenge to the juvenile justice system, especially the most serious offenders. To address this issue and to promote more successful transitions to society following incarceration, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) prioritized development of comprehensive reentry programming more than thirty years ago. Since then, increased attention has been given to reentry services and

their role in the long-term success of juvenile justice programming. As a result, basic reentry services have become standard protocol for many juvenile justice systems. However, the scope and intensity of these services have varied greatly between providers and between systems.

The aim of this study was to evaluate the impact of specialized reentry services. To accomplish this, a group of adolescents who received treatment as usual reentry services was matched with a group of adolescents who received specialized reentry services. Both groups were incarcerated in the same facility, and thus, both received the same cognitive behaviorally-based residential treatment. In addition to evaluating the effect of reentry services, differences between adolescents who initially committed a non-sexual offense were compared to those who initially committed a sexual offense.

### **Adolescent Offenders and the Need for Reentry Services**

More than 1.3 million adolescents cycle through juvenile courts each year (Sickmund, Sladky, & Kang, 2013), and on any given day, an estimated 71,000 adolescents are incarcerated in the United States (Sickmund, Sladky, Kang, & Puzanchera, 2011). This significant participation in the juvenile justice system has broad implications for adolescents' healthy development and long-term success (Willison et al., 2013); it poses a significant risk to adolescents and is a primary predictor of poor long-term outcomes (e.g., Mallett, 2013; Seigle, Walsh, & Weber, 2014). However, this relationship is not wholly clear, particularly when factoring in many adolescent offenders' serious comorbid needs, including mental health and substance abuse issues, histories of abuse and/or neglect, and academic challenges (Herz et al., 2012; Hodgdon, 2008; Leone & Weinberg, 2010; Skowrya & Coccozza, 2006). Between 60–70% of justice system-involved youth have been diagnosed with a mental health disorder (Skowrya & Coccozza, 2006), approximately 60% have had co-occurring mental health and substance use

disorders (Hodgdon, 2008), and as many as 65% have been involved in the child welfare system (Herz et al., 2012). Not unexpectedly, given their complex needs, justice-involved youth are significantly more likely to struggle academically, have learning disabilities, and drop out of school (Leone & Weinberg, 2010).

Due to offenders' complex needs, reentry planning and aftercare services have long been considered crucial to community engagement efforts (Bullis, Yovanoff, & Havel, 2004) to effectively treat adolescent offenders with mental health needs (Pullman et al., 2006) and to promote successful transitions (Spencer & Jones-Walker, 2004). More recently, researchers have sought to further understand the relationship between reentry planning and recidivism (James, Stams, Aascher, De Roo, van der Laan, 2013; Baglivio, Wolff, Jackowski, & Greenwald, 2015).

In addition to adolescent offenders' comorbid treatment needs, they also face several other specific challenges related to reentry. For some, these challenges involve returning to the same unstable home environment in the same community that lacks effective schools and/or employment opportunities. For others, particularly those convicted of sexual offenses, these challenges may be compounded by barriers to education, employment, and housing that have resulted from sex offender legislation (Meloy, Miller, & Curtis, 2008; Zevitz & Farkas, 2000; Zimring, Jennings, & Piquero, 2007). In particular, the problems created by sex offender registration and notification laws have been even more devastating for adolescents who have committed a sexual offense, as they also face an increased risk for suicide (Tofte, 2007) and severely diminished well-being (Annie E. Casey Foundation, 2008). Ironically, the social support that is so essential to both young offenders' reentry and long-term success may have been seriously compromised by sex offender legislation (Durling, 2006; Edwards & Hensley, 2001; Levenson & Hern, 2007; Tewkesbury & Lees, 2006; Zandbergen & Hart, 2006).

Given the complex needs and unique reentry barriers facing juvenile offenders, it is not difficult to fathom the challenges related to successful reintegration and to understand why it is difficult to reduce recidivism. Indeed, the juvenile justice system was not designed to address the myriad clinical treatment needs and the barriers to effective transitions that today's juvenile offenders confront. However, these rates are still not acceptable, and recidivism rates have remained significantly high, especially for the most serious adolescent offenders. In fact, recidivism rates for adolescent offenders following incarceration have historically ranged from 40.16% (Taylor, Kemper, Loney, & Kistner, 2009) to 80% (Trulson, Marquart, Mullings, & Caeti, 2005; Seigle et al., 2014).

### History of Federal Juvenile Reentry Initiatives

In the late 1980s, OJJDP identified aftercare programming as a priority and embarked on an in-depth, multilevel research initiative to design a comprehensive aftercare model. These efforts resulted in the development and implementation of the Intensive Aftercare Program Model (IAP) during the 1990s. Unfortunately, the IAP model's evaluation results were not favorable. There were few differences between IAP participants and the control group (Wiebush, Wagner, McNulty, Wang, & Le, 2005), which effectively ended funding for implementing the IAP model.

Aftercare services for juvenile offenders continued to be OJJDP's priority. In 2003, juvenile and youthful offenders (ages 14 to 24 years) became eligible for participation in the Serious and Violent Offender Reentry Initiative (SVORI), funded by the Office of Justice Programs. SVORI was not designed as a program but as a funding stream to allow states to fill gaps in existing programs and create linkages to services and programming that included assessments, case management, and enhancements to both confinement and post-release reentry services. Findings from a multistate SVORI evaluation resulted in significant changes in how reentry programming was conceived (Winterfield,

Lindquist, & Brumbaugh, 2007). Namely, participating sites identified the need for increased systems integration, post-release service enhancements, coordination of services and inter-agency partnerships, and modifications to standard operating procedures to fully support the whole-scale expansion of reentry programming.

In 2008, the Second Chance Act: Community Safety Through Recidivism Prevention (Public Act 110-199) was signed into law. Evolving from the former IAP and SVORI initiatives, the Second Chance Act (SCA) was conceived as a comprehensive response to addressing the reentry needs of incarcerated adults and juveniles. As such, the SCA provides federal funding to jurisdictions and private organizations to plan and implement reentry services to ease the reintegration process while also promoting public safety.

### Second Chance Act Projects

The project goals funded through the SCA include a) an increase in reentry programming, b) reduced recidivism among participants, c) reduced violations among participants, and d) improved reintegration outcomes (Willison et al., 2013). Since passage of the SCA, the Bureau of Justice Assistance has awarded more than \$250 million to governmental and nonprofit organizations to support reentry efforts for medium- and high-risk adult and juvenile offenders (Ritter, 2014). Although SCA provides funding for both adult and juvenile offenders, the majority of the funding has been allocated to the adult criminal justice system—the significantly larger system. Only approximately 100 of the nearly 600 SCA grant awards (roughly 17%) have been awarded to government and nonprofit organizations serving juvenile offenders (Willison et al., 2013). Because of the small number of projects and the relatively recent passage of SCA, there is a dearth of research on SCA projects, and the research published to date appears to be limited to adult offenders.

One of the most recent studies involved 10 of the initial SCA grantees that implemented enhanced

adult reentry services (D'Amico, Geckeler, Henderson-Frakes, Kogan, & Moazed, 2013). The study, the first phase of a two-part evaluation funded by the National Institute of Justice, examined SCA outcomes and focused on implementation (i.e., process) to examine the reentry planning process. The subsequent outcomes evaluation was planned for completion in 2015.

Participating agencies, including both state and local jurisdictions, enhanced existing reentry programming and leveraged local partnerships to improve 3- to 18-month reentry services, which included risk assessment and case management services. Additional services, including education and training, substance abuse and mental health treatment, and employment assistance, were provided by some, but not all, participants.

An implementation study resulted in the identification of three significant system changes that have broad implications for improving reentry services: a) partnerships are growing between public and private organizations to work more collaboratively in reentry efforts; b) reentry services are becoming more comprehensive, including the use of assessment tools, case management, and mentoring services; and c) a cultural shift in thinking about reentry services is happening, with a movement away from enforcement and authority to one of support and rehabilitation.

Each of these system changes is promising; however, it is not yet known how they will impact the outcomes achieved by the participating jurisdictions, and in particular, the effect they will have on reducing recidivism. Although this knowledge can be applied to future efforts in adult SCA reentry programming, it may have little direct implication for juvenile offenders. Moreover, the lack of research on SCA reentry programs for juveniles constitutes a serious gap in the literature, particularly given the funding that has been allocated to the efforts. It is a gap that this article seeks to address.

## The Wayne County Second Chance Act Reentry Program

Similar to the 10 grantees of adult reentry projects discussed above, the Wayne County Second Chance Reentry (WC-SCR) program was designed to significantly enhance existing reentry services for the region's adolescent offenders and to leverage local partnerships to improve reentry planning. Prior to the WC-SCR program implementation, the region's existing reentry services (i.e., treatment as usual) ranged from reentry planning exclusively while in residential placement for up to 6 months to community-based monitoring following release.

The WC-SCR program was designed to be consistent with six best practices identified by OJJDP, including: a) objectively assess criminogenic needs, b) enhance intrinsic motivation, c) target high-risk offenders, d) address criminogenic needs of high-risk offenders, e) use cognitive-behavioral interventions, and f) determine treatment dosage and intensity of services. In addition, WC-SCR developed a Reentry Task Force consisting of all major stakeholders to ensure a comprehensive and collaborative effort, provide oversight to the project, and promote the long-term sustainability of the project. The Reentry Task Force consisted of administrators from the county and from each of the participating residential and community-based organizations.

A residential reentry specialist was assigned to each participating youth in the WC-SCR program during residential treatment and began working with him immediately following his enrollment in the program. The residential reentry specialist facilitated monthly reentry planning meetings with the youth, his parents/caregivers, his residential treatment team, and his assigned community-based case manager during residential treatment that focused on prioritizing his needs and preparing him for reentry. The residential reentry specialist also administered three assessment instruments to identify each participant's most urgent needs. These included the Child and

Adolescent Functional Assessment Scale (CAFAS; Hodges, 2000a; Hodges, 2000b), the Substance Abuse Subtle Screening Inventory for Adolescents (SASSI A2; Miller, 1990; Miller & Lazowski, 2001) and the Youth Checklist/Case Management Inventory (YCL/CMI 2.0; Hoge & Andrews, 2011). Whereas the CAFAS and the SASSI were used to assess participants' mental health and substance use needs, respectively, the results of the YCL/CMI were used to identify the amount of reentry services to be provided (i.e., dosage) to each participant based on his level of need. Dosage of reentry services ranged from 100 hours to 300 hours of post-release reentry case management services for 6 months, with each participant receiving a full 6 months of post-release reentry case management services. The amount and length of time for specialized mental health and/or substance use treatment was determined by the community-based mental health/substance abuse treatment provider following referral from the reentry program case manager; this treatment ranged from 1 session to 12 or more sessions. Once the participant was released, the community-based reentry case manager met with him weekly for the first 2 months, then met with him every other week for the remaining 4 months.

## Method

### Participants

A total of 273 male juvenile offenders who were treated in a secure (i.e., locked) residential treatment facility between 2008 and 2013 participated in this study. One hundred and fifty six juvenile offenders who consented to participate in the study and received treatment as usual reentry services served as the control group, and 117 juvenile offenders who consented to participate in the WC-SCR program served as the experimental group.

Multiple types of demographic data were collected on both groups, including race and age at admission to residential treatment. Participant race data were similar among the two groups, with the control group consisting of: .006% ( $n =$

1) American Indian, 5% ( $n = 8$ ) Bi-Racial, 77% ( $n = 120$ ) Black, and 17% ( $n = 27$ ) White. The WC-SCR participants consisted of: 2.5% ( $n = 3$ ) Bi-Racial, 82.7% ( $n = 96$ ) Black, and 15.5% ( $n = 18$ ) White. Age at admission ranged from ages 13 to 18 for both groups and was also similarly broken down between the two groups. The age at admission breakdown for the control group was: 3.2% ( $n = 5$ ) 13 years, 10.8% ( $n = 17$ ) 14 years, 19.8% ( $n = 31$ ) 15 years, 30% ( $n = 47$ ) 16 years, 24.3% ( $n = 38$ ) 17 years, and 11.5% ( $n = 18$ ) 18 years. The age at admission breakdown for the WC-SCR participants was: 1.7% ( $n = 2$ ) 13 years, 10.2% ( $n = 12$ ) 14 years, 31.6% ( $n = 37$ ) 15 years, 27.3% ( $n = 32$ ) 16 years, 19.6% ( $n = 23$ ) 17 years, and 9.4% ( $n = 11$ ) 18 years.

Participants in each group were categorized based upon offense type that included nonsexual and sexual offenses. The categorization of these two groups was used because the first author (Calleja) was also interested in specifically evaluating differences related to adolescents who had committed a sexual offense compared with those who had committed a nonsexual offense. Juvenile offenders in both treatment groups who committed a sexual offense were a fairly homogenous subgroup, with the vast majority having committed the most serious sex offenses (e.g., forcible rape), whereas nonsexual offenders had committed a range of crimes from armed robbery to assault with intent to murder. Nonsexual offenders comprised the largest population in both treatment groups, with 85.3% ( $n = 133$ ) in the control group and 91% ( $n = 106$ ) in the WC-SCR treatment group. Conversely, youth who had committed sexual offenses comprised 14.7% ( $n = 23$ ) of the control group and 9% ( $n = 11$ ) of the WC-SCR treatment group.

### Setting

The study setting was a locked (i.e., secure) residential treatment facility for juvenile offenders located in a large, poor urban city in the midwestern United States. The facility served as the only secure residential treatment program in the region for male youthful offenders. It was selected and

studied specifically because of its unique role as the only such facility in the broad region treating adolescents who had committed the most serious crimes. The residential program was designed to treat the most serious juvenile offenders based upon severity of offense type (e.g., attempted murder) or offense history and prior record of failed placements. The treatment program utilized a sequential cognitive behavior-based model previously described in the literature (see Calley, 2007), and both groups of participants received the same residential treatment.

### Procedure

WC-SCR program participants were assessed for substance abuse, functional ability, and level of case management needs just prior to release from residential treatment. The assessment results were used to identify the need for community-based substance abuse and/or mental health treatment, whereas the level of case management needs was used to determine the dosage of reentry services to be provided post-release.

Recidivism data were collected through a search of the regional and statewide juvenile and criminal justice databases for a period of up to 2 years post-release. Recidivism was defined as a new criminal offense that resulted in disposition in either the juvenile or adult criminal justice system. The study was approved by the Institutional Review Board at the university where the first author is employed.

### Identification of Variables

In addition to treatment type (i.e., treatment as usual compared with WC-SCR treatment), offense type was also included as a variable in this study to determine the effect, if any, that offense type had on recidivism. Two types of recidivism were defined and evaluated—Recidivism I: a new charge or violation that did not result in confinement, and Recidivism II: a new charge or violation that resulted in confinement.

Data were collected at three intervals: a) upon admission to residential treatment, b) at program release, and c) 2 years post-release from residential treatment. Three data forms were developed and used to collect these data, the *Initial Youth Information Form*, the *Discharge Tracking Form*, and the *Follow-Up Tracking Form*. Data collection specialists were trained in collection procedures prior to beginning the study and were responsible for gathering all data from official documents contained in the case record, from the regional and state juvenile justice and criminal justice databases, and from each youth and/or his parents/legal guardians.

### Statistical Analyses

Frequency analyses were conducted to determine recidivism rates between the two groups at 2-year followup and were collected for both Recidivism I and Recidivism II.

As an additional measure to frequency analysis and to assess the predictive value of treatment type and offense type on recidivism, a logistic regression with stepwise and backward variable selection methods was used. The statistical significance of individual regression coefficients in the logistic regression equation ( $\log(p/1-p) = -3.517 + 1.900*(Offense\ Type) + .713*(Treatment\ Type)$ ) was tested using the Wald chi-square statistic. From these results shown in Table 1, both type of offense ( $p = .011$ ) and treatment type ( $p = .027$ ) added significantly to the model/prediction of recidivism. The statistical significance of the individual regression coefficient in the logistic regression equation ( $\log(p/1-p) = -3.517 + .713*(Treatment\ Type)$ ) was tested using the Wald chi-square

Table 1. Logistic Regression Analysis of 273 Offenders

Measures	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Offense type	1.900	.747	6.475	1	.011	6.685	1.547	28.880
Treatment type	.713	.322	4.894	1	.027	2.039	1.085	3.834
Constant	-3.517	.777	20.507	1	.000	.030		

statistic. From these results shown in Table 1, the treatment type ( $p = .027$ ) added significantly to the model/prediction of recidivism. Alpha was set to 0.05 for all tests.

## Results

The overall recidivism rate (among all 273 participants) was 21%. Overall recidivism was 24% ( $n = 38/156$ ) for the control group and 16% ( $n = 18/116$ ) for the experimental group (WC-SCR group).

Type I recidivism rates were 9.5% for the control group and 4.3% for the WC-SCR group, whereas Type II recidivism rates were 18.9% for the control group and 8.5% for the WC-SCR group. Recidivism rates for the control group were more than double that of the WC-SCR group.

In addition, both treatment types (specialized and treatment as usual reentry services) and initial offense type had a significant effect on recidivism. The odds of recidivism were 2.039 times greater for offenders who received treatment as usual reentry services compared with those who received specialized reentry services. The odds of recidivism were 6.685 times for nonsexual offenders compared to sexual offenders. The percentage change (in this case, an increase) in odds of recidivism when an offender is a nonsexual offender was  $100(\exp \beta - 1) = 100(6.685 - 1) = 568\%$ . For treatment as usual, it was 104%; the probability (.869) of recidivism among nonsexual offenders was 87% and for treatment as usual, it was 67% (.671).

Among the 56 recidivists across both treatment types, 96% ( $n = 54$ ) were nonsexual offenders, whereas 4% ( $n = 2$ ) had initially committed a sexual offense. Of the sexual offenders who recidivated, one belonged to the treatment as usual group and the other belonged to the specialized WC-SCR group.

## Discussion

The findings of this study support specialized reentry programming for juvenile offenders and provide initial support for assessment-driven, dosage-based reentry planning. As such, the findings may suggest that specialized reentry

planning should be guided by the assessment of mental health and substance use treatment needs and that dosage of case management services should be prescribed by the assessment of case management needs. Although the aim of this particular study was focused specifically on evaluating long-term recidivism related to comprehensive reentry planning and differences between adolescents who had committed a nonsexual crime compared with those who had committed a sexual crime, analysis and discussion of other aspects of the project are planned for future dissemination.

The findings also provide preliminary support for the SCA of 2007 and the type of comprehensive reentry planning it was designed to support. In fact, the findings are somewhat consistent with some of the major long-term goals of reentry programming; that of increasing public safety and reducing recidivism as defined in the Amendments Related to the Omnibus Crime Control and Safe Streets Act of 1968 Subtitle A, Sec. 101 (j) (1). These goals include: a) break the cycle of recidivism; b) rebuild ties between offenders and their families during incarceration and between offenders and their communities following incarceration; c) develop evidence-based programs to reduce recidivism; d) provide necessary services during incarceration and after to promote successful reintegration; e) provide sufficient transitional services following incarceration not to exceed 1 year; and f) provide educational, vocational, and job placement services to facilitate reentry.

In particular, the findings are specifically aligned with goals a, c, and e. As such, the main aim of the WC-SCR project was to break the cycle of recidivism, to empirically evaluate the effects of reentry planning on recidivism, and to provide long-term transitional services following incarceration. Whereas the project also included specific efforts toward the other three goals, these efforts were not as clearly defined and provided to all participants as part of the project design.

The results also provide additional support to the finding that adolescents who have committed a sexual offense are least likely to reoffend. Despite continued legislative efforts to place further

restrictions on adolescents who have committed a sexual offense, the body of research findings that these adolescents pose the least recidivism risk continues to grow (e.g., Calleja, 2015; Piquero, Farrington, Jennings, Diamond, & Craig, 2012; Washington State Institute for Public Policy, 2008).

### Limitations to the Study

Despite the study's experimental design, because the evaluation was limited to a single region, it may be difficult to generalize the findings. Further complicating this is the fact that the region has taken various steps to function as a well-integrated system of governmental and community organizations working toward shared goals. As such, regions that are not similarly structured may confront challenges to implementing comprehensive reentry planning until and unless they develop the level of support and partnerships needed to effectively implement a reentry planning program.

Another limitation was the small number of participants who had committed a sexual offense, which creates challenges in the generalizability of the findings. However, because sexual offenders typically comprise a small percentage of overall crime, the proportion of sexual offenders to nonsexual offenders is reflective of national samples of offenders.

### Implications for Future Research and Conclusion

As data from additional SCA grantees become available, it will be critical to disseminate the results to learn more about the broad effects of the initiative. This will be especially important as related to SCA reentry programs for adolescent offenders. It will also be necessary to better understand the role that other factors play in reentry planning, such as the seriousness and/or type of the initial offense. Doing so may allow for reentry programming to become more individualized and thus allow for limited resources to be allocated where they are most needed. In addition, it will be imperative that the findings of specialized reentry programs are used to identify the role that reentry planning may play in the treatment process for juvenile offenders. As a

result, findings may be used to inform community-based diversion programs and to assess the need for less incarceration and more individualized, intensive, and longer-term community-based interventions. Finally, because these findings provide further evidence of the comparatively lower rates of recidivism among adolescents who were previously charged with a sexual offense, the inclusion of juveniles in sex offender notification and supervision laws should continue to be seriously questioned and thoughtfully reviewed. Indeed, the growing body of research findings that adolescents who have committed a sexual offense are highly unlikely to commit another sexual offense strongly suggests the need for adolescents to be excluded from sex offender legislation.

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# Developing an Alternative Juvenile Programming Effort to Reduce Detention Overreliance

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## Abstract

The assumption underlying juvenile detention alternatives is that youth on probation receiving programming or treatment are less likely to recidivate, whereas youth in detention will be more likely to recidivate. Under a coordinated justice reform effort, a juvenile justice court system serving two southeastern counties in Washington state developed a program (the FAST program) for probation violators that offered 2 sessions of accountability skill development to address targeted criminogenic needs in lieu of a formalized hearing and a subsequent stay in detention. The goal of the FAST program for participating youth was to reduce future probation violations and detention stays. This paper presents an evaluation of the FAST program using propensity score modeling of 434 juvenile probation violators. A comparison of matched groups shows the program does not reduce recidivism or future probation violations among participants, though it does produce the same result as those who received detention. Our explanation makes the case for increasing the dosage (number of sessions) of violator programs, which may be what is necessary to provide a more effective alternative to detention.

## Introduction

Secure detention for juvenile delinquents has long been a systematic and cyclical method for states to manage unruly youth. Though its general distension in the “get tough” movement of the 1980s and 1990s has recently ebbed, detention still remains a serious issue, and it is often associated with an increased likelihood of later recidivism (Holman & Ziedenberg, 2006; Mendel, 2009). Combined with increased probation dispositions and higher frequencies of subsequent violations (Puzzanchera, Adams, & Sickmund, 2010; Steinberg, 2009), detention is a viable and common means of controlling violators. In the context of community supervision, detention is a tool that many probation officers find invaluable. The long-held belief that using detention serves as a deterrent effect or that it helps to structure and “set straight” the juvenile offender where probation failed thrives in such a context, making a philosophical shift to divert youth from detention difficult at best. Consequently, counties across the United States have reported that more than 50% of their juvenile detention population has been held due to probation violations (Mendel, 2009).

Increased pressures on the juvenile justice system, however, have forced officials and policymakers to re-examine the prevalent use of detention. New research on adolescent brain development, and the importance of using risk-needs-responsivity (RNR) to guide case management in juvenile programming, pushed many juvenile courts and probation departments to consider community-based alternatives (Andrews, Bonta, & Hoge, 1990; Barnoski, 2004; Howell, Lipsey, & Wilson, 2014). Focused on relieving the overreliance on detention as well as on implementing greater use of community-based sanctions, a national movement to reform juvenile detention has emerged. To support these efforts, numerous private foundations, including the Annie E. Casey Foundation and the MacArthur Foundation, became involved with assisting states in developing alternatives to detention, “right sizing” the system by removing the mandatory filing by age requirements, and addressing issues such as disproportionate minority contact (DMC; Maggard, 2013). Specifically addressing the use of detention for probation violators, the Office of Juvenile Justice and Delinquency Prevention and private interests have initiated programs to keep technical violators from serving unnecessary time in detention. The assumption underlying such alternative detention programs is that additional programming or treatment will supply youth with needed skills that will help decrease recidivism more effectively than detention will.

A juvenile justice court system serving two southeastern counties in Washington state created one such alternative detention program for probation violators that included a 2 session course of accountability skill development. Called Fast Accountability Skills Training (FAST), the program was operated by trained juvenile probation staff and focused on having participants explore concepts around cognitive change and problem solving to reduce future recidivism and probation violations. This study is an evaluation of the FAST program and subsequent participant outcomes. Propensity score modeling of 434

probation violators from the juvenile court was utilized, in which those who received detention were matched to violators who received the FAST intervention.

After comparing the matched groups, we concluded that the program appeared to yield the same result as detention. In light of this finding, we conducted a second analysis in which we aimed to test if the program was in fact not different from detention. Upon conducting a test of equivalence and a propensity score weighting scheme, we confirmed that violators receiving the FAST program were indeed no better or worse than those in detention with regard to the supervision outcomes.

In spite of the program failure to reduce criminal recidivism and future probation violations, and considering the extant research on the impacts of incarceration for juveniles, a core question of detention alternative programming is raised: What is the usefulness of detention for juvenile probation violators? In our explanation of the program’s failures, we make the case for an increased dosage of programming and decreased incarceration of violators; in other words, for it to be effective violators should receive more sessions of programming.

## Literature Review

### The Shifting Paradigm of the Juvenile Court

Although the philosophical foundation of the juvenile court is steeped in rehabilitation, over the past 100 years most states have vacillated over whether to embrace rehabilitation, deterrence, or retribution as a paradigm in processing youth offenders. By the early 1990s, many state juvenile courts made a complete shift to deterrence and retribution approaches. States responded to their citizens’ moral panic and fear of dangerous youth (Dilulio, 1995) and the corresponding “get tough movement” by drastically restructuring juvenile statutes, dispositions, and program availability (Steinberg, 2009). These statutory and programmatic changes resulted in

an increasing number of youth being adjudicated delinquent and more likely to serve longer probation and detention sentences (Steinberg, 2008). This paradigmatic shift was a harsh departure from the original intent of the juvenile court system. Further, it stemmed from flawed assumptions regarding the deterrent and dosage effects of incarceration as employed in the adult criminal justice system (Piquero & Blumstein, 2007).

With close to 2 million juveniles arrested per year, mostly for minor offenses, the shift was especially concerning, given the potential for harsh processing and deeper system penetration (Puzzanchera & Adams, 2011). Recent research findings on the impact of further penetration into the juvenile system and the use of detention on youth suggest iatrogenic effects may result: In their review of 29 randomly assigned diversion programs (a total of 7,304 juveniles), Petrosino, Guckenburg, & Turpin-Petrosino (2010; Petrosino, Turpin-Petrosino, & Guckenburg, 2013) found that processing youth through formal court channels actually increased delinquency. The researchers concluded that low-risk youth should receive a minimal to simple warning intervention from the court or access to family-based services (Petrosino et al., 2010, 2013).

### **Detriment of Detention**

The importance of establishing the connection between formalized processing and later delinquency is particularly important when considering detention. As with research on adult offenders, research on juvenile offenders has shown that one of the greatest predictors of recidivism for juvenile offenders is prior commitment to detention (Benda & Tollet, 1999). As youth progress through the juvenile justice system, the potential for formal processing and subsequent likelihood of being ordered additional detention increases drastically. For example, Holman and Ziedenberg (2006) found that reoffense rates are higher for youth who serve time in detention, and other research has highlighted the negative and lasting impacts youth experience

after incarceration, including a disconnect from school and family, trauma, depression, negative peer association, and an increased likelihood of further juvenile system involvement (Chung, Little, & Steinberg, 2005; Holman & Ziedenberg, 2006; Mendel, 2009).

Research from the Pathways to Desistance study revealed important findings that juvenile courts should consider. For example, Loughran et al. (2009) questioned the effect of incarceration dosage on youth as it correlates with subsequent recidivism and found that longer periods of stay in detention had no impact on subsequent recidivism. In their study of 1,171 adolescent males over a 7-year period, Dmitrieva, Monahan, Cauffman, and Steinberg (2012) found that the use of short-term confinement had a temporary impact on the psychosocial development of the incarcerated youth. Essentially, these youth were less likely to display responsible behavior and less likely to curb impulsive and negative behavior. Although the impact was only short term, it was more significant for older adolescents than younger detainees.

Further analysis of the Pathways to Desistance data set by Sweeten, Piquero, and Steinberg (2013) focused on testing Hirshi and Gottfredson's (1983) age and crime theory, which argued that age has a direct correlation with crime and maintained that most youth will simply "age out of crime." Sweeten et al. (2013) conducted multi-level modeling on 1,300 Pathway participants to determine if the effects of age on outcomes were reduced when applying various theories such as social control, procedural justice, social learning, strain, and psychosocial maturity. Although the findings varied across the theories, up to 69% of the drop in crime was explained by the culmination of these theories, with social support theory, at 49%, holding the largest impact (Sweeten et al., 2013). The findings surrounding social learning are critical to the debate regarding the use of detention with juvenile justice-involved youth, given the increased levels of association between detained youth and their high risk/need peers

within the walls of a detention facility. Such findings lend support for the notion that any programming that defers supervision violators from detention may provide a more productive alternative.

### Community-Based Alternatives to Detention

When attempts are made to divert delinquents away from formal court processing and detention, probation is the standard practice utilized. Probation, a community-based alternative to detention, is the most common disposition of delinquency cases seen in juvenile courts and it enables courts to maintain supervision over youth in the community setting (Puzzanchera, Adams, & Hockenberry, 2012). Juvenile probation “is the oldest and most widely used vehicle through which a range of court-ordered services is rendered” (Torbet, 1996, p. 1), and it is commonly utilized at the point of diversion, community-based supervision, and even aftercare. However, wherever probation is used, it invariably employs a system of violations and associated sanctions in an attempt to punish and deter misbehavior.

Most violations that youth commit are noncriminal, and the majority of offenders receive graduated responses ranging from verbal reprimand to detention. In the effort to keep juveniles out of formal court processing and detention, having an alternative for young violators is becoming a great concern. One method is directly dealing with juveniles’ criminogenic needs (Andrews & Bonta, 2010). However, probation officers must work with a wide range of offender types, so it is difficult for them to meet and address all their clients’ criminogenic needs. Another method involves combining services and supervision. As probation is primarily supervision, it does not provide services and treatment, and many jurisdictions have opted for different methods of combining probation with other community-based interventions (e.g., drug treatment or educational programs).

Research on such methods of dealing with probationers and violators is mixed. Most studies and systematic reviews have shown that the

combination of treatment or services and formal probationary supervision can prove to be more beneficial at reducing recidivism and violating behavior than just supervision without services (e.g., Abrams, Terry, & Franke, 2011; Lipsey, 2009; Wilson & Hoge, 2013). However, others have found no difference in recidivism rates between statistically matched informal probationers (i.e., diversion programming plus supervision) and formal probationers (i.e., probation and court appearances; Onifade, Wilkins, Davidson, Campbell, & Petersen, 2011). Still other researchers indicate that to be effective at reducing recidivism, the services provided to youth probationers should include an emphasis on family intervention and restorative justice (Schwalbe, Gearing, MacKenzie, Brewer, & Ibrahim, 2012). Altogether, these findings suggest that the approach to juvenile probationers must be more calibrated and research driven than arbitrarily combining programs with supervision.

More community-based programs have been developed and implemented for juvenile probationers. For example, the Juvenile Detention Alternatives Initiative (JDAI), founded in 1992 by the Annie E. Casey Foundation, focuses on reducing the frequency of juvenile detention and length of stay per use by emphasizing alternatives to incarceration as well as community collaboration (Mendel, 2009). JDAI has been shown to significantly decrease both the rate of pre-dispositional detention and the average length of stay for those admitted (Maggard, 2013). These findings emphasize how community-based initiatives can prevent unnecessary system penetration of accused and sentenced youth.

Detention alternatives such as JDAI continue to grow in popularity in numerous jurisdictions nationwide. However, many of these jurisdictions don’t understand the alternatives’ program design or how to implement them. Many shortcomings are due to limited evaluations of initiatives smaller than JDAI. Particularly important for evaluation research of community-based detention alternatives is the notation of initiative impacts in

relation to traditional probation and detention. This study extends prior and current research in significant ways. Few studies use a quasi-experimental design with adequate comparison groups. The current study investigates the use of a community-based detention alternative for probation violators in Washington state through a quasiexperimental design using propensity score matching (PSM).

## Methodology

### Setting

Barlow and Hartford counties<sup>1</sup> are in southeastern Washington. Both counties are served by a joint judicial district. The combined area is primarily an urban/rural mix, with a population of 253,280, according to the 2010 U.S. Census; more than half of Hartford County's population is Latino (51%). Together, the two counties experienced a 25% percent increase in population over the prior decade, in large part due to the continued availability of agricultural employment as well as growing industry.

Even with a strong economy, juvenile crime rates were well above the state average; Barlow and Hartford counties consistently ranked among the top counties in the state for juvenile arrests. According to the 2010 Kids Count Data (Annie E. Casey Foundation, 2010), an average of 41 youth per 1,000 were arrested in Washington for criminal offenses. Eighty youth per 1,000 were arrested in Hartford County, and 79 youth per 1,000 were arrested in Barlow County. Additionally, these counties were also well above the state average in drug/alcohol offenses and juvenile violent crime. The Washington average for youth drug/alcohol offenses in 2010 was 9 offenses per 1,000, whereas Hartford County experienced 17 offenses per 1,000, and Barlow County experienced 16 offenses per 1,000 youth (Annie E. Casey Foundation, 2010).

<sup>1</sup> Due to the sensitive nature of the findings, the counties in this article will be referred to by using the fictitious names of Barlow and Hartford counties.

The Barlow/Hartford Juvenile Court (BHJC) handles all criminal and civil matters involving youth ages 8 to 18 and handles approximately 2,866 referrals for misdemeanor and felony offenses a year (Washington State Partnership Council on Juvenile Justice [WA-PCJJ], 2010). The court employs approximately 80 staff, including detention officers (one 40-bed facility is located on site), probation counselors, diversion counselors, clerks, and mid- to upper-management. The BHJC administration was highly regarded across the state as a true leader in innovative juvenile reform because the court was quick to implement the statewide Positive Achievement Change Tool (PACT) in 1998, which helped solidify the further use of the risk-need-responsivity tool across the state.

The combination of population growth in the area, the vision of the BHJC administration, and a strong push from the Washington state legislature to continually employ evidence-based and data-informed practices, paved the way for the welcomed involvement of the Annie E. Casey and MacArthur Foundations at the court. Specifically, in 2008 the BHJC applied for and was awarded grant funding to participate in the Models for Change initiative within Washington, and state funding (in 2007) was made available so that BHJC could participate with the Annie E. Casey Foundation. These two foundations had committed significant resources in Washington in support of juvenile justice reforms that minimized the use of detention, reduced disproportionate minority contact, and revised truancy procedures. BHJC administrators understood and embraced these reforms by working closely with these foundations as well as with numerous outside research and technical assistance entities brought in to support the Models for Change project at various levels. Research partners included the University of California, Irvine (UCI); the University of Washington (UW); and Washington State University (WSU). The role of these academic partners was to provide data analysis support, to explore best and promising practices with the reform team, and to guide program implementation efforts.

A first order of business under the BHJC's Models for Change initiative was to take advantage of UCI and WSU's academic and technical support to measure potential race bias at various decision points in its juvenile system, including at arrest, filing of the charge, intake, disposition, detention, and at the filing of probation violations. Specific to exploring potential issues of DMC at the point of probation violations, the court provided UCI with a sample of 100 Latino and 100 White youth (and a matched control group of no probation violations). Surprisingly, UCI researchers found no significant differences in the amount of detention time served between Latino and White youth, once prior criminal history, age, and gender were controlled for (Cauffman, Monahan, & Bechtold, 2009). Some important findings did emerge, however, that warranted closer attention. First, on misdemeanor charges, Latino youth appeared to be coming into contact with and entering the juvenile justice system earlier than White youth. Second, the data revealed that in 85% of the probation violation cases analyzed, detention was ordered/used. Essentially, BHJC lacked the early interventions and alternatives to detention necessary under these circumstances.

Prior to the Models for Change initiative, BHJC had limited options for addressing youth violating probation; these included community service hours, work crew, or detention. Although juvenile courts across Washington reduced their use of detention by 31% between 2000 and 2010, BHJC actually experienced a 4% increase in the amount of youth booked into detention (WA-PCJJ, 2010). Creating more opportunities for skill building, mentoring, and positive cognitive development at earlier stages in the system became an established goal under the Models for Change reform initiative. The BHJC administration was committed to restructuring its limited resources to address youth needs through promising practices. Further, the court sought to move away from using ineffective programs and over using detention.

To achieve this, in 2009 the BHJC created the Fast Accountability Skills Training (FAST) program,<sup>2</sup> an alternative to a formal probation-violation hearing program. Although the program was a court-based service, it entailed a strong community component in which various agencies offered their services and programs to youth. The FAST developers aimed to employ a strengths-based approach that sought to assist participants in exploring concepts around change, problem solving, acceptance, resiliency, and short- and long-term goal setting. The overall goal of the program was to address violations and increase participants' accountability and self-awareness to boost resiliency, which staff maintained would yield more positive outcomes. Staff, including Juvenile Probation Officers (JPOs) and Probation Supervisors, built the FAST program to specifically target both youth with antisocial attitudes toward authority and change and those with negative peer associations.

Two months prior to the FAST program launch, the JPO team spent considerable time developing course materials, including an instruction manual (curriculum), a handbook for participants, and worksheets.

Juvenile probation officers (JPO) referred youth to the program. The probation unit supervisor monitored caseload data and referrals to ensure that eligible youth were referred. The referral process included a review of the nature of the juvenile's violation, and JPOs identified youth criminogenic needs via the Positive Assessment Change Tool (PACT) risk/needs/responsivity system. Youth who scored moderate to high risk (for re-offense) on the PACT tool and specifically displayed high criminogenic needs scores on PACT Domain 6 (Relationships), Domain 10 (Attitudes/Beliefs), and Domain 12 (Skills) were referred to FAST.

Each FAST class was limited to eight, mixed-gender juvenile participants and was facilitated by two probation officers (the FAST team) who

<sup>2</sup> This program was locally built and named and should not be confused with the Family and Schools Together (McDonald, 1987) model.

had significant experience in offering other cognitive-behavioral intervention programs such as Aggression Replacement Training and coordinated case services. Participants in the FAST program met twice a week, from 3 to 5 p.m., for a total of 4 hours, and covered a wide range of culturally relevant topics, including skills building, goal attainment, and effective situation management.

Each of the two sessions began with a review of expectations, an agenda, and an opening ice-breaker activity. For the first session, the FAST team led the group through a “looking within” exercise aimed at creating a discrepancy between the participants’ personal values and their underlying court violations through various hands-on activities. This was followed by a “check yourself” activity, in which the participants focused on identifying whether or not their actions coincided with their personal values. This allowed the FAST team to introduce the concept of making identified changes. The program built experiential activities into the curriculum to demonstrate setbacks and obstacles youth face, with opportunities to problem solve and strategize around their challenges individually and as a group.

In the second session, the facilitators asked the participants to complete a strengths inventory to identify their existing strengths and to list potential new strengths they would like to develop while on probation. Over the 2 sessions the FAST team worked with participants to set short-term goals, incorporating items they had included in their strength inventory. Youth then returned to their probation officers with these short-term goals developed from the FAST program, and while serving their remaining time on probation, they would reassess the goal(s) in the context of working toward achieving longer-term goals. JPOs could refer their clients to one or multiple classes of FAST, and the FAST team made detailed notes on each client’s class participation and provided them to his or her JPO for followup and to reinforce accountability.

Probation staff updated their clients’ changes in behavior around the identified PACT domains, specifically domains 10 and 12, 3 months after they completed the FAST program, or when their clients exited from probation. Although FAST’s intent was to serve as an alternative to detention, staff were also concerned with “moving the needle” on criminogenic needs, given the BHJC’s general focus on the PACT.

### Analytical Plan

The current study ultimately had two aims. First, we sought to determine the FAST program’s overall effectiveness at reducing participants’ later violations and recidivism compared with youth who received detention when they violated probation. To evaluate FAST, we used a retrospective, quasiexperimental design by way of statistical matching and established an adequate comparison group to minimize selection bias that occurs upon the violation of probation. When the “gold standard” (a randomized controlled design) cannot be employed in a treatment study, any and all possible efforts should be made to eliminate selection bias (Guo & Fraser, 2010). To address this, we used propensity score matching (PSM) to balance the two study groups on all available measures that have the potential to systematically bias study findings. PSM is a statistical method that allows the user to simulate randomization by balancing the two study groups on preintervention characteristics. We employed a PSM technique of one-to-one, nearest-neighbor matching to pair those in the comparison group to those who participated in the FAST program.

Measures used in the match were those identified as significant predictors of a case being placed into the FAST group by way of logistic regression; this created predicted probabilities or a propensity score. This score was then used to identify cases receiving incarceration who had similar characteristics as the FAST (treatment) group depicted through similar propensity scores. The post-match analysis included cross-tabulations, chi-square, and regression tests to note the

differences between the groups regarding later recidivism and violation behavior. In addition to these analyses, we also sought to further verify the findings using a double-robust estimator. The double-robust estimators are based on the work of Robins and colleagues (Bang & Robins, 2005; Robins, Rotnitzky, & Zhao, 1995). Such estimators use a combination of propensity scores and regression modeling to protect against misspecification and to provide an unbiased estimate of the average causal effect of the treatment (for further detail on this analysis, see Emsley, Lunt, Pickles, & Dunn, 2008). When both models (PSM and regression) are correctly specified, the product is interpreted as the “true effect” of the treatment.

The study’s second focus was to determine if the FAST program was equivalent to detention in terms of effectiveness on the outcomes of interest. To do this, we conducted two additional tests—equivalence and noninferiority—and a second propensity score analysis using all of the detention cases as the “treatment” group. Equivalence and noninferiority tests are ways to assess whether a treatment is just as effective or not inferior to the standard condition using confidence intervals. Equivalence tests are essentially two-sided tests that allow for the treatment to be determined as no-better or no-worse in comparison to the standard condition, whereas noninferiority tests are a one-sided test to determine if the treatment is simply not worse than the standard (Greene, Morland, Durkalski, & Frueh, 2008). Such tests are often used in the mental health field in randomized control trials to test the effectiveness of various forms of therapy (e.g., Hedman et al., 2011).

To maintain the quasiexperimental comparison between the groups, we completed a second propensity score analysis, this time focusing on detention as the “treatment” group. Unfortunately, we did not have additional cases for this study due to various issues regarding the source of the data from the court and limited staff availability to continuously pull data.

This prevented us from creating a large enough sample to conduct another one-to-one nearest neighbor match and still encompass all FAST and detained violators. Instead, we applied a propensity score-weighting procedure to make comparisons on the outcomes between the groups. Rather than matching cases based on the characteristics of the FAST participants, we balanced the cases on their propensity to be incarcerated upon violating. Given that FAST participation had no impact on later recidivism or violations, by matching characteristics of FAST participants to the characteristics of all those incarcerated, we could essentially evaluate the effectiveness of detention compared with the effectiveness of a diversion program.

Weighting on the propensity score uses an algorithm to isolate the average treatment effect in observational research (Guo & Fraser, 2010). Guo and Fraser (2010) recommend creating two weighting variables using the propensity score. One is to estimate the average treatment effect (ATE) for both the treated and the untreated cases. According to Guo and Fraser (2010:161, citing Hirano & Imbens, 2001; Hirano, Imbens, & Ridder, 2003; Rosenbaum, 1987), this weight is calculated using

$$\omega(W, \chi) = \frac{W}{PS} + \frac{1 - W}{1 - PS},$$

where  $W$  is the treatment measure (1 for treated cases, 0 for untreated), and  $PS$  is the propensity score. This is also known as the inverse-probability-of-treatment, or IPTW (Hirano & Imbens, 2001; Hirano et al., 2003; Robins, Hernan & Brumback, 2000). The IPTW allows for untreated cases to be weighted in relation to how similar they are to the treatment group cases. IPTW estimation has been shown to be the better method when the treatment group has far more cases than the comparison group, as is the case here (Kurth et al., 2006; Stuart, 2010).

### Sample and Measures

Between May 2010 and October 2012, 124 youth participated in FAST. Of this group, 58% ( $n = 72$ ) were Latino, 37% ( $n = 46$ ) were White, and 5%

( $n = 6$ ) were African American. The youth ranged in age from 14 to 18 and predominately possessed moderate (30%) and high (61%) risk and need PACT score. The FAST program displayed a successful 82% completion rate among participants. Although this alone is important, the BHJC wanted to determine if the program did, in fact, reduce future probation violations as well as have an impact on FAST participants' recidivism in contrast to a matched comparison group. We were given access to measures collected by the counties on both FAST participants and incarcerated violators.

These measures consisted of some demographic information (age, race/ethnicity, county of residence, and sex). Common measures between the FAST and incarcerated groups included initial violation type ranging across 10 supervision conditions. These violation types included failure to complete treatment (drug/alcohol, Aggression Replacement Training, community-based or other ordered services), truancy, and curfew violations. Failure to complete community service work, violation of court-imposed gang conditions, and failure to remain in contact with a probation officer were violations that were not common among FAST participants and were gathered under "other" violations. Similarly, the violation type committed by the majority of the comparison group consisted of failure to pay fines and victim reparations, which was also included in the "other" violation category. Other common measures collected by the counties on both FAST participants and incarcerated violators included counts of recidivism and new violations for up to 1 year following the FAST period. Lastly, the counties provided additional information that was specific to the FAST participants, such as completion rate and the number of times and the number of days a participant was ordered to the program. Table 1 shows data for the comparison and treatment group, both before and after the match. Recidivism events that were used as outcome measures for this evaluation included any rearrest and conviction (disposition) for felonies

and/or misdemeanors. Probation violation served as an intermediate outcome and consisted of a dichotomous measure of no new violations and at least one new violation.

## Results

After we completed PSM, we conducted chi-square and  $t$ -tests where appropriate. From these bivariate analyses, it can be reasonably concluded that the groups were well matched and mostly without bias. However, there were a few measures upon which the matched groups still significantly differed and maintained wide standardized differences. The FAST group possessed a significantly reduced proportion of cases that were age 18 and older ( $p < .01$ ). After further examination of this age group, it appears that only eight cases were assigned to FAST who were older than age 17. The differences between those older than age 17 and the rest of the sample were concentrated to certain violation types that would be expectedly different from most juveniles younger than age 17. For instance, the largest and most statistically significant contrasts were in fewer violations of truancy (32% for ages 18+ and 46.2% for ages 17 and younger,  $p < .05$ ), more violations for financial penalties such as restitution (50% for ages 18+, and 30.2% for ages 17 and younger,  $p < .001$ ), and more cases that contained multiple probation violations (49.1% of ages 18+ and 35.5% of ages 17 and younger had three or more violations,  $p < .05$ ).

Apart from age, the FAST group had fewer violations of custody care ( $p < .01$ ), JPO contact ( $p < .001$ ), and community service ( $p < .001$ ), and fewer cases who possessed more than one violation of any type ( $p < .001$ ). With there being so few cases who possessed these types of violations, the types were collapsed into one violation category, "Other": These violations also encompassed gang and restitution violations, which were not statistically different across the groups. Additionally, the FAST group had a higher proportion of drug and alcohol violators ( $p < .05$ ). In spite of these differences, only age was found to

Table 1. Propensity Score Matching Descriptives (N = 434)

Measure	Before PSM				After PSM			
	n	Com%	FAST%	%STD Diff	n	Com%	FAST%	%STD Diff
<b>Total</b>	434	71.4	28.6		245	49.4	50.6	
<b>Male</b>	339	77.1	80.6	8.6	197	80.2	80.7	1.3
<b>Age</b>								
≤ 14	42	8.4	13.8	17.3	27	9.1	13.8	14.8
15	76	15.8	*23.3	19.0	47	16.5	23.3	17.1
16	86	18.1	*25.9	18.9	55	20.7	25.8	12.1
17	114	25.5	30.2	10.5	69	28.1	30.1	4.4
18+	108	32.3	***7.0	67.5	39	25.6	***7.0	52.0
<b>Race</b>								
White	158	35.8	37.9	4.4	91	36.4	37.9	3.1
Hispanic	274	59.0	57.3	3.4	141	57.9	57.3	1.2
Black	16	3.2	4.8	8.2	11	4.1	4.8	3.4
<b>Risk</b>								
Low	60	15.8	*9.2	20.1	29	14.8	9.2	17.3
Moderate	89	17.4	**29.2	28.2	67	26.4	29.2	6.3
High	281	66.8	61.3	11.5	145	58.7	61.6	5.9
<b>Residence</b>								
City One	163	41.4	*30.9	22.0	77	33.1	31.0	4.5
City Two	45	8.6	*15.4	21.0	36	14.4	15.5	3.1
City Three	143	28.5	***46.3	37.4	97	33.9	46.3	25.5
Other	74	21.5	***7.3	41.3	31	18.6	**7.3	34.1
<b>Violation</b>								
Curfew	64	14.5	15.3	2.2	37	14.9	15.3	1.1
Truancy	189	40.3	*51.6	22.8	136	59.5	51.6	15.9
Drug/Alcohol	143	28.1	***45.2	36.1	112	46.3	45.2	2.2
Failed Treatment	47	10.0	12.9	9.1	33	14.1	13.0	3.2
Other	150	47.1	***3.2	117.3	105	66.1	***20.2	104.6
<b>Violation Count</b>								
>1	233	75.2	***36.3	85.1	129	69.4	***36.3	70.3

\*p < .05 \*\*p < .01 \*\*\*p < .001; Pre-Match AUC = .90; Post-Match AUC = .50

be the significant factor in predicting the potential of falling into the FAST group prior to the match.<sup>3</sup> It can then be safely assumed that these differences do not substantially influence the case propensity scores. Our multivariate assessment (e.g., the area under the curve statistic [AUC]) also suggest that the match had sufficiently balanced

the groups (pre-match AUC = .92; post-match AUC = .50).

To address the question of whether FAST participants possessed lower proportions of recidivism events (probation violations and criminal history) compared to nonparticipants, chi-square tests were executed on the matched samples, and a final regression was completed to assess the performance of FAST on supervision outcomes.

<sup>3</sup> Age was also assessed for matching and in the final analyses as continuous, which yielded no difference, or in some cases, an increase in bias in the match.

Given the initial intent of the FAST program, it was expected that youth would assimilate skills and techniques provided throughout the course, which should result in lower rates of probation violations and a reduction in future crimes after program completion. Table 2 summarizes the tabulated breakdown of supervision outcomes after the match.

Table 2. Comparison of Supervision Outcomes Between Study Groups

Supervision Outcome	Comparison %	FAST %	Total %
Any New Probation Violation	76.0	71.0	73.5
1 to 3 Violations	81.5	70.5	76.1
4 to 6 Violations	18.5	29.6	24.0
Any New Crime	76.0	71.0	73.5

Probation violation:  $\chi^2(1) = 5.145, p < .273$   
 New crime:  $\chi^2(1) = 0.185, p < .667$

Post-match analyses show that there was virtually no distinction between the treatment and comparison groups on any of the outcome measures. As shown in Table 2, there was no statistically significant difference found between the two groups for either probation violations or new offenses. These results suggest that the FAST program was ineffective at reducing both later violations and commission of a new crime. However, given that significant differences remained between the matched groups, we determined that using other post-match analyses was warranted in an effort to account for these differences. As suggested in the literature (e.g., Guo & Fraser, 2010), there are some methods that can be used following a PSM that allow for a sound comparison while accounting for differences among measures and potential confounding effects. One method is using a binary logistic regression to predict the primary outcome variable while using the strongest correlates as independent measures (Kurth et al., 2006). In this case, we use a binary logistic regression to account for the potential predictive strength in each of the variables that were significantly

different following the matched groups. This model is depicted in Table 3.

Table 3. Binary Logistic Regression (Post-Match) Predicting Recidivism

Measures	Std. Err.	Odds Ratio
<b>Model 1: FAST Participation Only</b>		
Constant	0.212	1.117
FAST Participation	0.287	1.161
<b>Model 2: With Unbalanced Covariates</b>		
Constant	0.445	0.950
FAST participation	0.252	0.725
Resides in other outlying areas	0.660	1.389
Older than 17 years	0.028	***0.042
Other violation	0.214	0.545
More than one violation	0.407	1.788

Model 1: Nagelkerke  $R^2 = .001$   
 Model 2: Nagelkerke  $R^2 = .164$   
 \*\*\* $p < .001$

Our dependent variable was a dichotomous measure of “new crime,” including any new felony or misdemeanor (0 = none recorded, 1 = any new crime). The independent variables in this model include dichotomous measures of cases age 18 and older (0 = no, 1 = yes), other violation (0 = no, 1 = yes), and dichotomous measure of having more than one violation of any type (0 = no, 1 = yes). As shown here, the logistic regression suggests that there are no significant predictors of new crime among these groups. Had any of these measures, including participation in the FAST program, shown an odds ratio above 1 and was statistically significant, then it could be argued that the measure poses a problem for the evaluation conclusions. Using double-robust estimation, the findings of the above match were verified. The estimation revealed that there are no significant effects of FAST participation on either recidivism (effect size = -.07, standard error = .05) or probation violations (effect size = -.25, standard error = .05).

In light of the conclusion that the FAST program yields no better effects on supervision outcomes

on probation violators than incarcerating probation violators did, we recognized that this should be tested further. Due to the seeming equivalence between a nonconfinement option for violators and a confinement option, we applied a second analysis of propensity score weighting in the opposite direction as well as an equivalence test. The critical aspect of the test was the choice of noninferiority margins. This was the difference we hypothesized was a “meaningful difference.” Although there is no precise method of identifying this, a common expectation is that the treatment should be *at least* 80% to 90% as effective as the standard method, which in this case is detention (Greene et al., 2008). If we hypothesized that the FAST intervention should be at least 85% as effective as detention with regard to reducing recidivism, then the margin should be set at  $(\pm).15$  with a 95% confidence interval (CI). Therefore, if the CIs of the difference in proportions between the two groups were estimated to be within this margin, we could reject the null hypothesis of “nonequivalence” and declare that the FAST and confinement conditions were equal. Upon conducting the analysis using Stata,<sup>4</sup> the difference in proportions between the two groups was  $-.005$ , with CIs of  $-.127$  and  $.118$ . According to this test, the CIs were within the margin of indifference, which allowed us to reject the null hypothesis and declare the FAST group to be therapeutically equivalent and noninferior to detention. However, given that the match still possessed some bias between the groups, it could be argued that such a test of equivalence is not as trustworthy, as it relies on the quasiexperimental design simulated by the match.

Table 4 shows the balance breakdown of the second propensity score analysis. Using IPTW or ATE weights, a good way to assess whether the groups were balanced was by placing all of the covariates into appropriate regression models

<sup>4</sup> Stata has multiple user-written programs that conduct this analysis. We used the command *rdci*, which was specifically written to conduct equivalency tests with 2 x 2 proportions using four different methods, reporting the CIs for each: Agresti-Caffo, Newcombe Method 10, Wallenstein, and Miettinen-Nurminen. All of the estimates were the same, except for the Newcombe Method, which estimated CI limits of .001 less in each direction.

as the dependent variable, with the study group variable as the sole predictor. If the study group variable was shown to be a significant predictor (in any direction) of the covariate, there is imbalance between the groups on that covariate (Guo & Fraser, 2010). Table 4 shows the degree of imbalance between the two groups, both before and after weighting.

Table 4. *Covariate Imbalance After Propensity Score Weighting (N = 434)*

Measure	p Value of Odds Ratio or B in Regression	
	Before	After
<b>Age</b>		
≤ 14	.106	.867
15	.068	.154
16	.084	.295
17	.290	.242
18+	.000***	.008**
<b>Risk</b>		
Low	.073	.163
Moderate	.009**	.813
High	.352	.254
<b>Residence</b>		
City One	.057	.752
City Two	.044*	.774
City Three	.001**	.276
Other	.001**	.406
<b>Violation</b>		
Curfew	.792	.156
JPO Contact	.000***	.001**
Custody Care	.001**	.529
Gang Relations	.319	.831
Drug/Alcohol	.001**	.723
Failed Treatment	.399	.811
Truancy	.034*	.591
Community Service	.000***	.321
Other	.000***	.198
<b>Violation Count</b>		
>1	.000***	.061

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

As demonstrated in Table 4, using the IPTW, we were able to balance the two groups on all but two covariates. Similar to before, any confounding effects of these two covariates could be accounted for in the subsequent logistic regression.<sup>5</sup> When modeled in a weighted logistic regression using the IPTW, shown in Table 5, both to account for these two items in and removed from the model, detention was not shown to be a significant predictor of either recidivism or probation violation. Only being younger than age 18 appeared to be a significant predictor of both new crime and probation violations; however, no particular age younger than 18 (i.e., 17 years old versus 16 years old) was a significant predictor in and of itself. According to this analysis, when all covariates were equally balanced between the groups, confinement did not predict recidivism any more than it did in the FAST group.

Table 5. *Weighted Binary Logistic Regression Predicting New Crime and Violations*

Covariates	Estimated Odds Ratios (Robust SE)			
	Predicting Recidivism		Predicting Violations	
<b>Model 1: Confinement only</b>				
Detention	1.177	(.56)	1.38	(.69)
<b>Model 2: Confinement and Unbalanced Covariates</b>				
Confinement	1.944	(.97)	1.72	(.86)
Age 18+	.046	(.02)***	.315	(.13)**
Violation JPO Contact	1.321	(.44)	1.329	(.40)

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

Note. Notable differences involving unbalanced covariant predictors in separate models are presented in text.

In spite of these differences, there were still no significant differences between the groups at the bivariate level with regard to new crimes or new probation violations. To control for confounding measures and to account for the impact of those measures that were still different between the groups, a binary logistic regression was

<sup>5</sup> Although it is suggested that covariates should not be included if they are used in the creation of the propensity score (see Freeman & Berk, 2008), it can be justifiable in the cases where there is strong theoretical importance to those covariates in the model and a high degree of covariate imbalance.

employed. Similar to the results of the previous analysis, the logistic regression found no significant predictors in the post-weighted data set for either outcome. This suggests that even when balancing on characteristics of incarcerated violators, there was still no difference between the two groups.

## Discussion

Meta-analyses on the effectiveness of the general use of community-based alternatives to detention indicate that the calculated application of therapeutic diversion is important to the desistance of juvenile recidivism (e.g., Farrington & Welsh, 2005; Lipsey, 2009; Howell et al., 2014). Such research has provided a clear guide into the use of “what works” in juvenile justice, particularly regarding juvenile delinquency and especially with probationers. Lipsey (2009) reviewed close to 600 studies and concluded that therapeutic community-based programming was an effective tool for addressing behavior change in youth while reducing recidivism overall. Over the past two decades, many juvenile court systems have moved to using standardized risk and need assessment tools to not only understand the risk level of youth but also appropriately “match” youth to programs and services based on criminogenic needs (Andrews & Bonta, 2010; Lipsey, 2009). This movement has created a new study area in the juvenile corrections field that centers on determining the correct type and dosage of programs needed to achieve positive outcomes.

In a recent report on what is needed to improve the overall effectiveness in juvenile programming, Lipsey, Howell, Kelly, Chapman, and Carver (2010) list and discuss the field’s empirical status in this area. Deriving most of their conclusions from Lipsey’s (2009) meta-analysis on juvenile interventions, the authors emphasize key program characteristics that have been shown to provide the greatest effectiveness, such as focusing on providing high-risk delinquents with therapeutic treatment rather than on controlling them (e.g., deterrence and discipline).

Referencing the specific types of therapeutic programming, Lipsey et al. (2010) suggest that priority should be given to those that are multifaceted (e.g., multisystemic therapy), multilevel (i.e., including the individual and the family, such as in Functional Family Therapy), and cognitive-behavioral.

Conjoined with the recommended types of programming, Lipsey et al. (2010) also discuss the importance of quality and dosage in programs' effectiveness at reducing recidivism. Quality assurance is often emphasized almost synonymously with program type, and dosage is equated to the amount of a certain type of intervention (e.g., the number of total hours, sessions, or weeks from start to finish). The report (Lipsey et al., 2010) and findings in Lipsey's (2009) meta-analysis illustrate that the dosage of a program likely matters in its overall effectiveness. However, the research on how much of a specific type of program is needed for the program to be deemed effective is more limited. This is largely because not all evaluations include a measure of duration and intensity of the intervention, and when they do, the measure often varies widely (e.g., hours per day compared with number of sessions per week or month).

Although well intended, it is highly plausible that the short duration of the FAST program (4 hours total) diminished its effectiveness in impacting future violations and recidivism. In addition, although probation counselors collected and updated information regarding skills participants learned in the PACT tool, we did not have access to this data for this study. It is plausible that program participants experienced positive changes within the various domains, but this did not ultimately correlate with an overall reduction in violation behavior.

We evaluated the program after only 18 months of operation, and FAST program staff informed us that they made several modifications to the program during the first 2 months of operation to fine-tune the developed curriculum and materials in hopes of increasing referral rates from JPOs.

Unfortunately, we were unable to complete a process evaluation of the FAST program, which could have provided important insights to ascertain the strengths of the program materials and curriculum based on what works with juvenile offenders (Lipsey, 2009). With regard to dosage within the FAST participation, the number of times a juvenile was put through the program was modeled with covariates in the logistic regression, although it is not reported in the same model above due to collinearity with the binary measure of study group participation. When replacing the participation variable with two others—"number of days completed" and "participated in the program more than once"—there was no change in the results. Under no circumstances involving the covariates, including the double-robust estimation, were there changes in FAST's influence on recidivism or later probation violations.

What is most important to note here, however, is that there were no differences in violations and reoffending between the two groups. In other words, youth who spent time in FAST appeared to have the same outcomes as those who spent time in detention, according to the above analysis.

Given the null effects found in two separate scenarios and given what is known about the detriment of incarceration among the juvenile population, we conclude that the court should consider actually expanding FAST rather than using costly detention services (\$160 a day in Barlow/Hartford counties), as detention clearly does not impact future behaviors. These findings are consistent with those found elsewhere in the juvenile probation and detention literature, namely in the work of Loughran and colleagues (2009). In their study of longitudinal data from the Pathways to Desistance Study, the researchers investigated the effect of incarceration and probation on recidivism. After the two groups of probation ( $n = 502$ ) and detained ( $n = 419$ ) cases were propensity score grouped or stratified, the researchers' analysis showed no difference in recidivism between the use of probation and detention.

When considering these findings together, each noting that the probation and community-based alternative approaches perform just as well as detention at reducing recidivism, it invariably begs the question: What is the purpose and use of juvenile detention in addressing probation violations? At its core, this question is a classic penological debate; the intention is to reduce the unfavorable behavior of the individual (punishment) while procuring societal safety in the process. However, in light of other studies (e.g., Loughran et al., 2009), confining probation violators does not appear necessary. Considering the extant research on how much of a detriment detention can be and the general strides systemic entities have made in reducing the number of youth who are exposed to the formal processing and commitments, unnecessarily incarcerating violators could be replaced with more effective alternatives. Although it would be premature to draw a conclusion about the FAST program and an equivalent detrimental effect of detention, further research of the FAST program, combining the current data set with data from the PACT tool, may yield further insights.

## Limitations

There is methodological and analytical strength to this study, but there are also notable limitations that require the findings to be interpreted with caution. First, though using PSM allows for a quasiexperimental design, this study is limited by the number of measures available to the researchers. As was noted above, we had limited access to PACT data. Further, for this study, the criminal history was limited to an overall total criminal history score, and other static variables of the sample cases were restricted to the PACT risk score. Matching participants and comparison subjects based on the score rather than the actual item did not provide the strongest match possible. However, even if the items were available, this limitation is largely unavoidable, as there were so few subjects in the treatment group. It was determined that the use of other matching techniques

would neither remedy this situation nor provide it a stronger design than the one-to-one technique.

Second, there are limitations that involve theoretical measures of context. Examples include both the participants and practitioners. For the participants, the measures available do not account for the specific type of neighborhood, family, or peers that the juvenile is exposed to on a regular basis. Similarly, issues regarding chemical dependency also cannot be controlled. However, it can be argued that these issues are partially accounted for by items in the PACT assessment. One issue that cannot be accounted for through the PACT is the differences with regard to age, specifically, those participants who were older than age 17. Upon closer inspection of the differences between those older participants and all others involved with FAST, we identified a few things that were particularly notable. First, those who are referred to FAST appear to be younger and are sent on their first or second violation. Older participants appear to be held to a different expectation regarding their supervision, which perhaps has more to do with individual responsibility. Those older than age 17 accounted for the majority of the initial violations that fell into the “other” category, which included JPO contact violations, failure to complete community service, and not paying legal/financial obligations. It is not surprising, given their age and the likelihood that the state would expect those age 18 and older to be responsible for their fines. Second, these differences also suggest that FAST may have been devised and saved for those younger juveniles. With this in mind, we examined the option of removing the 108 cases (8 FAST, 100 comparison) of youth older than age 17 for the initial match and assessment of the FAST program, as such a decision could be justified. However, as the removal of these cases created greater bias after the match, we left them in the analysis. Though it could be argued that leaving these cases in, in spite of their age differences, is not an accurate representation of the participants this study was designed to target, the fact remains that these

youth still participated in the program. Thus, they were still treatment participants, albeit with a single year of age difference from the rest.

The goals and strengths materials that the youth developed and the JPOs allegedly enforced also cannot be incorporated into this study, as such issues involve the implementation of cognitive behavioral components. Almost every form of cognitive behavioral programming requires that the staff administering it receive a certain level of training and specific implementation to be effective. Though it is plausible that the effects seen here, or lack thereof, could be related to the improper deployment of such programming, it is nevertheless unlikely. Cognitive behavioral programming also typically requires that the dosage meets or exceeds a certain number of exposure hours. For instance, for some programming to be effective, it must be implemented three times as often as what FAST offers. As a result, we note that it is likely that the FAST program's shorter duration and intensity, or dosage, may affect this study's findings.

## Conclusion

Given the important findings on the deleterious effects that detention can have on youth, including disruption from school and family, trauma, depression, negative peer association, and an increased likelihood of further juvenile system involvement from it, it is of critical importance that juvenile court systems create and use a wide range of detention alternatives (Chung et al., 2005; Holman & Ziedenberg, 2006; Mendel, 2009).

Through empirical evidence, it appears that the key for potential alternatives involves the critical areas of emphasis in familial therapy, multifaceted individualized treatment, and increased dosage of virtually all approaches (see Lipsey et al., 2010; Holman & Ziedenberg, 2006; Schwalbe et al., 2012). Although well intentioned, the FAST program most likely failed to generate positive outcomes due to a lack of sufficient dosage; yet rather than dismiss such efforts, the court should consider retooling the dosage and curriculum offerings under researcher guidance.

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# Variations in Juvenile Offending in Louisiana: Demographic, Behavioral, Geographic, and School-Related Predictors

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## Abstract

This study examines the relative impacts of demographic, behavioral, and school-related factors on juvenile justice contact of varying magnitudes (felony, misdemeanor, and status offenses) across a large, and non-selective sample of youths. The sample includes Deep South public school students examined from 1996 through 2012 ( $N = 615,515$ ). Data were obtained through state administrative databases. Noteworthy findings are that school expulsion, male gender, prior Louisiana Office of Juvenile Justice (LOJJ) contact, and grade failure are major predictors, though their relative impact varies based on the severity of offense. Further, being African American loses much of its practical significance in all models once other factors are taken into account. Implications for policy and subsequent research efforts are discussed.

## Introduction

This study focuses on the youthful population of Louisiana—a historically high-poverty state in

the southern United States. A 2014 report ranked Louisiana as having the second highest juvenile violent crime rate in the United States, with 445 out of every 100,000 Louisiana youth arrested for a violent offense such as murder, rape, robbery, or aggravated assault (Puzzanchera, 2014). Pervasive social, economic, and educational problems in Louisiana set the stage for this extremely troubling finding. Louisiana was ranked 46 out of 50 on rankings of overall child well being (Annie E. Casey Foundation [AECF], 2014). Approximately 30% of Louisiana children live in poverty, and almost half (45%) come from single-parent homes (AECF, 2014; U.S. Census Bureau, 2010). Regarding education, AECF (2014) ranked Louisiana 46th on educational well-being and indicated that nearly one third of Louisiana children did not graduate from high school on time. Louisiana is a state in crisis, warranting focused attention and study. Lessons learned in this study may be generalized to other high-poverty and low educationally performing states with high crime rates.

## Background

Delinquency remains a rich area of study, and decades of research have informed the development of theories, policies, and practices that aim to reduce and prevent youth crime. Many longitudinal studies have followed youth for years to determine the risk factors associated with delinquency and adult crime (Browning, Thornberry, & Porter, 1999; Glueck & Glueck, 1950; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Thornberry, Huizinga, & Loeber, 2004). The Pittsburgh Youth Study, Rochester Youth Development Study, and Denver Youth Survey comprise notable longitudinal investigations of youth crime in the United States (Thornberry et al., 2004). Numerous articles have been published on these investigations that have shed light on offending patterns, trajectories, risk factors, and implications for prevention (Loeber et al., 1993; Loeber et al., 1998; Loeber & Hay, 1997; Stouthamer-Loeber, Wei, Homish, & Loeber, 2002; Thornberry & Krohn, 2003). However, work remains in examining delinquency influences using samples from the Deep South (i.e., Alabama, Georgia, Louisiana, Mississippi, and South Carolina). Moreover, the relationships between certain combinations of sociodemographic factors and offense severity have been rarely addressed in the literature. The current study builds on previous research by examining the relative influences of demographic, behavioral, geographic, and school-related factors on offense severity in Louisiana.

## Literature Review

### Severity of Offense

Research predicting juvenile offense severity is relatively rare, considering the large body of literature on youth offending. Exceptions include a 2006 longitudinal study and a 2010 follow-up study that examined secondary data from the South Carolina Department of Juvenile Justice (SCDJJ). In the 2006 study, Barrett, Katsiyannis, and Zhang conducted analyses to predict first

offense referral severity (nonstatus offense compared with status; felony compared with misdemeanor; violent compared with nonviolent) among a large sample of youth ( $N = 12,468$ ). The authors found that African Americans and males were more likely to be referred for the more serious offense categories such as nonstatus, felony, and violent. Data from the 2010 follow-up study consisted of about 100,000 SCDJJ-involved youth (Barrett, Katsiyannis, & Zhang, 2010). Race, gender, and age differences were observed in predicting the severity of first-time offenses. A comparison between nonstatus and status offenses showed that African Americans, males, and older youth were more likely to be referred for nonstatus first offenses. The felony and misdemeanor comparison yielded similar findings for African Americans and males but indicated that younger youth were more likely to be referred for felony offenses. These findings held true for the analysis that compared violent and nonviolent first-time offenders. African Americans, males, and younger youth were at increased odds of violent offense referrals.

Other studies have also explored relationships between offense severity, gender, and early onset of offending. Piquero and Chung (2001) found that early onset offending was linked to severe offense patterns but that this relationship did not hold true for females once all variables were controlled. In a similar study, Piquero (2000) demonstrated the relationship between offense severity and chronic offending by showing that youth with five or more offenses were more likely to have offended at an earlier age and engaged in more severe crimes involving violence. Regarding the severity of recidivism, Mulder, Brand, Bullens, and van Marle (2011) examined a group of serious offenders in the Netherlands and found that lack of treatment adherence, lack of problem-solving abilities, and criminal behavior in the family predicted more severe subsequent offenses.

## Rural Compared with Urban Delinquency

Few studies focus solely on rural delinquency, presumably due to higher delinquency rates in urban areas, although some studies do compare rural and urban delinquency rates. In one study, researchers found higher rates of delinquency and drug use in an urban sample of adolescents compared to a rural sample (Farrell, Kung, White, & Valois, 2000). A 2003 study (Elgar, Knight, Worrall, & Sherman, 2003) showed that urban delinquents reported more substance abuse; behavioral problems; psychiatric issues; and school, health, and peer relationship problems than rural delinquents. Several other studies have found minimal differences between rural and urban samples, indicating that rural delinquency is a growing concern. Mallett, Fukushima, Stoddard-Dare, and Quinn (2013) found that rural/urban geographic location was not significantly associated with recidivism rates in a sample of court-involved youth from rural and urban counties. Regarding gang membership, Evans, Fitzgerald, Weigel, and Chvilicek (1999) found few notable differences between a rural and urban sample but did show that more rural students reported active gang involvement than the urban comparison group. Another study highlighted cross-situational differences in behavior problems in a sample of young children from rural and urban areas, finding that home-only behavior problems occurred more often in the rural sample, whereas school-only behavior problems were more often exhibited by children from urban areas (Hope & Bierman, 1999). Based on these mixed findings, more research is warranted to differentiate rural and urban delinquency and examine the impact of individual-level predictors across geographic contexts.

## Demographic Predictors of Delinquency

The literature has frequently examined minority race, male gender, and economic disadvantage as predictors of delinquency. African American race is a clear area of concern, as African Americans comprise about 13% of the U.S. population but

account for 28% of all arrests (Hartney & Vuong, 2009). The disproportionate number of African Americans involved in the justice system, also known as disproportionate minority contact (DMC), continues to receive much attention as the federal government has attempted to enforce more transparent practices regarding racial disparities in the juvenile and criminal justice systems (Hartney & Vuong, 2009). Although DMC has remained a problem for decades, empirical research linking African American race to youth crime is somewhat inconsistent. For example, Barrett et al. (2006) found that African American youth were more likely to commit serious violent offenses than Caucasian youth, whereas Chung, Hill, Hawkins, Gilchrist, and Nagin (2002) found that race was not a significant predictor of serious adolescent offending. More consistent in the literature is the harsher treatment of African Americans in the juvenile justice system. Webb (2006) indicated that African American race was the most influential factor in predicting severe dispositions and that African American youth were more likely to serve time in pretrial detention than Caucasian youth. Findings also showed that males were at increased odds of being sent to secure-care detention facilities (Webb, 2006). A similar study (Armstrong & Rodriguez, 2005) found that African Americans were 50% more likely to receive pretrial detention than their Caucasian counterparts and that the likelihood of pretrial detention increased with age.

Regarding socioeconomic status, many studies have linked economic disadvantage to delinquency and crime (Blackmon, Cain, & Livermore, 2015; Rodriguez, 2013; Sampson & Laub, 1993). When people are unable or unlikely to succeed economically and socially by legitimate means, they will often turn toward illegitimate means, including theft, fraud, the drug trade, and gang membership. The severe poverty and lack of educational and work options in Louisiana magnifies the impact of these forces on poor populations (Guin et al., 2015). A recent study (Blackmon et al., 2015) examined the specific characteristics

of poverty, race, and geographic location in 64 Louisiana parishes and found that only poverty rates significantly predicted harsh juvenile dispositions (i.e., sentences). A study undertaken by the Bureau of Justice Statistics (Harrell, Langton, Berzofsky, Couzens, & Smiley-McDonald, 2014) demonstrated that people in low socioeconomic status households were significantly more likely to be victimized in violent altercations and in violent acts involving a firearm than their higher-income counterparts. Further, Sampson and Laub (1993) reported a strong association between economic disadvantage and high rates of youth juvenile justice processing. Rodriguez (2013) found that youth from the most highly disadvantaged areas were more likely to receive secure confinements than their counterparts from more affluent areas.

#### **Prior Contact with the Juvenile Justice System**

Studies have shown that prior contact with the juvenile justice system is one of the strongest predictors of future involvement with the juvenile justice system. A 2000 study (Hawkins et al.) found that juvenile offenses committed among children ages 6–11 represented the strongest predictor of subsequent violent or other serious offenses. In a 2003 study, Loeber, Farrington, and Petechuk found that child delinquents (ages 7–12) were almost three times more likely to become chronic serious offenders compared with delinquents who first came into contact with the juvenile court during their teenage years. Chronic offending has also been linked to violent offending. For example, Piquero (2000) found that multiple time recidivists (5+) were more likely to commit a violent offense.

#### **School-Related Predictors of Delinquency**

Previous studies have linked grade retention, truancy, and exclusionary discipline practices (i.e., school expulsion and suspension) to crime and violence (Jagers, Robison, Rhodes, Guan, & Church, 2016). A meta-analysis indicated that grade retention in early elementary school had a

negative impact on long-term behavioral outcomes (Holmes, 1989), and cascade modeling in a 2008 study (Dodge, Greenberg, & Malone, 2008) showed that grade retention predicted adolescent violence. A more recent study showed that one of the strongest predictors of violent criminality in adulthood was high school grade retention (Katsiyannis, Thompson, Barrett, & Kingree, 2012).

Truancy has been closely linked to juvenile offending. Wang, Blomberg, and Li (2005) compared a large sample of juvenile delinquents to a group of nondelinquents who were matched on several demographic variables including age, race, gender, socioeconomic status, exceptional status (including disabilities and giftedness), and school type. The delinquent group exhibited higher truancy rates, was promoted less frequently to the next grade, and earned lower grade point averages than the nondelinquent group. A similar study compared a first-time truancy offender group with a first-time nontruancy offender group and found that those in the first-time truancy group were referred to court at an earlier age and were referred to juvenile court more frequently than the nontruancy group (Zhang, Katsiyannis, Barrett, & Willson, 2007).

Regarding expulsion, McCord, Widom, and Crowell (2001) indicated that exclusionary discipline practices such as expulsion and suspension increase the risk of delinquency. A recent study further examined the association between arrest and exclusionary discipline practices, such as expulsion and suspension (Monahan, VanDerhei, Bechtold, & Cauffman, 2014), as predictors of delinquent behavior. Findings (Monahan et al., 2014) showed that forced absences due to expulsion and suspension doubled a student's risk for arrest. The study also demonstrated that for those students who did not have a history of problematic behaviors, expulsion more greatly predicted the likelihood of arrest. However, not all the literature is consistent regarding the connection between expulsion and delinquency. For instance, a 2005 study (Hodgson & Webb, 2005)

found that school expulsion did not significantly increase the chances for delinquency and that delinquent behaviors began prior to expulsion. Researchers should continue to examine the relationship between expulsion and delinquency and differentiate expulsions from suspensions in their statistical models as the current study does.

Overall, a multitude of studies including those mentioned previously have comprehensively addressed the risk factors for youth crime. More rare in the literature are longitudinal studies examining predictors of offense severity. The current study contributes to the delinquency literature base in a few ways. First, the sample is unique because it captures a very large amount of data from two merged statewide databases following all Louisiana public school students from the point at which they entered that system in the analyzed time period through December 31, 2012 ( $N = 615,515$ ). Second, this study examines the relative influences of demographic, behavioral, geographic, and school-related variables to predict offense severity. Geographic differences (rural/urban) are accounted for by using the geographic location of the school district. To the authors' knowledge, no other study has predicted offense severity by examining this combination of variables on such a large sample of youth from the Deep South. Lastly, this study makes a novel methodological contribution by incorporating average adjusted predictive margins (AAPs), which assess the practical impact of predictors without relying solely on statistical significance.

### Research Purpose and Questions

The purpose of the current study is to examine the relative influences of demographic, behavioral, geographic, and school-related variables on offense severity among a large sample of Louisiana youth. The following four research questions are tested in this study: 1) What are the relative impacts of demographic, behavioral, geographic, and school-related predictors on juvenile justice system contact among Louisiana public school students? 2) What are

the relative impacts of demographic, behavioral, geographic, and school-related predictors on *felony* juvenile justice contact among Louisiana public school students? 3) What are the relative impacts of demographic, behavioral, geographic, and school-related predictors on *misdemeanor* juvenile justice contact among Louisiana public school students? And 4) What are the relative impacts of demographic, behavioral, geographic, and school-related predictors on *status offense* juvenile justice contact among Louisiana public school students?

## Methods

### Sample

We used data from the Louisiana Department of Education (LADOE) and the Louisiana Office of Juvenile Justice (LAOJJ) administrative databases for the study. Students in grades K–12 who attended Louisiana public schools ( $N = 615,515$ ) were examined regarding subsequent LAOJJ contact and whether the most serious offense committed was a felony, misdemeanor, or status offense. Youth who were waived to criminal (i.e., adult) courts were not included in the LAOJJ database unless they had prior contact with the juvenile court. Data ranged from August 1996 (the beginning of the 1996–1997 school year) through December 2012. The Louisiana State University College of Human Sciences and Education, Office of Social Service and Research Development prepared and analyzed the data for this study.

### Measures

**Dependent Variables.** Statistical models examined outcomes associated with LAOJJ contact, coded dichotomously. The first of these measures was whether there was any LAOJJ contact, irrespective of the reason for this contact (0 = no LAOJJ contact; 1 = at least one LAOJJ contact of any type). The LAOJJ database included information on juveniles adjudicated through the courts and referred to LAOJJ. This ranged from those

who were incorrigible and were placed in diversionary programs to those who committed sexual or violent crimes and entered secure care.

The second series of measures accounted for the type of offense committed, in terms of the magnitude of the offense. These measures represented a juvenile's most serious LAOJJ-associated offense committed over the observed time period—felony (most severe; 0 = no felony contact; 1 = at least one felony contact); misdemeanor (moderate severity; 0 = no misdemeanor contact; 1 = at least one misdemeanor contact); or status offense (least severe; 0 = no status offense contact; 1 = at least one status offense contact). As examples of the variation in crime types examined in this study, felony offenses included murder, aggravated rape, or robbery of items valued at \$500 or more; misdemeanor offenses included driving under the influence, lower level theft, or marijuana possession; and status offenses included school truancy, under-age possession of alcohol, or running away from home. Given that a juvenile's most severe offense was represented here, these were mutually exclusive categories. For example, if a juvenile female committed both a misdemeanor and felony offense, then she would be coded a "1" on the dependent variable in the felony contact model, but she would be coded a "0" in the misdemeanor contact model.

**Independent Variables.** Independent variables were drawn from LADOE and LAOJJ databases. These included: rural school attendance (0 = first school attended was nonrural; 1 = first school attended was rural); urban school attendance (0 = first school attended was nonurban; 1 = first school attended was urban);<sup>1</sup> African American race (0 = non-African American; 1 = African American); gender (0 = female; 1 = male); school

<sup>1</sup> Rural compared with urban geographic areas are determined via Rural-Urban Commuting Areas (RUCA), which are determined based on census parish (counties) track codes. The school districts associated with the 7 most urban parishes in the state (average RUCA scores between 1 and 1.15) are coded as "urban" for this study, and the districts associated with the 15 most rural parishes (average RUCA scores between 7.5 and 10) are coded as "rural." Fewer urban parishes were used due to the much larger sample size in more urban parishes. Designation on these measures is based on the school in the district the student first encountered in Louisiana.

failure (0 = never failed; 1 = failed one or more times); free lunch (socioeconomic status proxy—this reflected subsidized meals based on family income levels: 0 = never received free lunch; 1 = received free lunch at least once during contact with LADOE schools); age of first contact with Louisiana public schools; year of birth; average number of absences per year (excused plus unexcused);<sup>2</sup> prior contact with the LAOJJ (0 = no prior LAOJJ contact; 1 = prior LAOJJ contact); and school expulsion (0 = never expelled; 1 = expelled one or more times).

### *Analytic Approach*

Individual student data were the unit of analysis for this study, and we aggregated these data for two distinct time periods for the purpose of analysis. Independent variables were all measures of phenomena that existed prior to the 2007–2008 school year—these represented both stable demographic factors and academic and behavioral experiences occurring prior to July 31, 2007. Outcome measures represented LAOJJ experiences following the observation period for the independent variables—from August 1, 2007, through December 31, 2012.

Figure 1 represents how data were aggregated. Data were segregated this way to ensure that all independent variable measures preceded outcome measures. This was an important consideration for a study of this type, as LAOJJ involvement frequently occurred while a student was still in school, and students often returned to school following LAOJJ contact. As such, a model examining occurrences spanning a student's entire educational record as predictors of any LAOJJ contact, irrespective of the timing of this contact, would not produce appropriate predictor values in some instances.

Hierarchical linear modeling via multilevel, mixed effects logistic regression was used to examine the statistical relationship between risk factors

<sup>2</sup> This follows from research demonstrating that both excused and unexcused absences are important predictors of negative outcomes (Roby, 2004).

Figure 1: Timeline of observations for analysis.



and LAOJJ involvement. The “nesting” level in these models was represented by the first school attended by each student. The mixed effects approach controlled for potentially systematic, unobservable effects of schools, such as shared school policies, quality of teachers, or factors impacted by the schools’ geographic location. This approach allowed for inference beyond the observed sample, which is not appropriate in fixed effects models (Hayes, 2006; Raudenbush & Bryk, 2002).

Results included odds ratios, AAPs, and 95% confidence intervals, which provided a more intuitive explanation of the substantive significance of findings than did raw coefficients and associated statistical significance. Given that the models here had large sample sizes, this was particularly important, as statistical significance may not have represented practical significance in all cases.

Odds ratios reflected the difference that a 1-unit increase in the predictor variable had on the odds of experiencing the outcome associated with the dependent variable of interest, controlling for other predictors. AAPs represented the probability that a student would experience an outcome of interest if he or she held a given value on one predictor variable of interest while all other variable values were held to their mean. For instance, in the felony OJJ involvement model, we could estimate the probability that an “average” student who previously failed a grade would commit an OJJ felony offense, taking into account the other predictor variables and the nesting variable of school as well. The AAPs reported here gave more weight to schools with larger numbers of students.

AAPs were manually estimated—a necessary step in STATA due to the inclusion of random effects—by first computing predicted random

effects (Best Linear Unbiased Predictor, or BLUP). Then, log odds were manually estimated for each AAP value of interest. For example, the following is how the log-odds were calculated for an otherwise “average” male student. A male was coded “1” on the gender measure—in a given school (for an “average” female student, we substituted “0” for the “1” male coefficient multiplier but the rest of the formula remained constant):

$$\hat{y}_j = (i+z_j) + a*1 + b*(\text{African American mean}) + c*(\text{previous grade failed mean}) + d*(\text{free lunch mean}) + f*(\text{year at first school contact mean}) + g*(\text{birth year mean}) + h*(\text{average absences per year mean}) + k*(\text{LAOJJ contact mean}) + l*(\text{expelled mean})$$

Where:

$\hat{y}_j$  = predicted log odds of male LADOC involvement for school  $j$ ;  $i$  = intercept;  $z_j$  = the random effect for school  $j$  (the BLUP value);  $a$  = gender regression coefficient;  $b$  = African American coefficient;  $c$  = previous grade failure coefficient;  $d$  = free lunch coefficient;  $f$  = year at first school contact coefficient;  $g$  = birth year coefficient;  $h$  = average absences per year coefficient;  $k$  = LAOJJ contact coefficient;  $l$  = expelled coefficient.

These values were then exponentiated, so that they reflected predicted probabilities:

$$(e^{\hat{y}})/(1 + e^{\hat{y}})$$

Where:

$e$  = Euler’s number. Mean values from these newly created variables constituted the AAPs.

## Results

### Descriptive Overview

The study sample included 615,515 students in 1,664 public schools across Louisiana. Of these students, 46% were African American and 51% were male. More than 70% of students received free school lunch benefits at some point, and nearly one third had failed a grade at least once. More overview data can be found in Table 1.

### Statistical Results

Model 1 examined predictors of any LAOJJ contact. The intraclass correlation (ICC) was a

Table 1: Descriptive Summary of Data

Variable	# and % of "1" Value	Mean	Std. Dev.	N
Individuals				615,515
Number of Schools				1,664
<b>Pre-Aug. 2007 Values</b>				
Rural	41,713 (6.78%)			
Urban	196,719 (31.96%)			
African American	285,283 (46.35%)			
Male Gender	316,121 (51.36%)			
Ever Failed	199,456 (32.40%)			
Free Lunch	445,230 (72.33%)			
Age at First School Contact		5.29	1.99	
Birth Year		1994.64	3.39	
Average Yearly Absences		8.43	6.33	
LAOJJ Contact	6,224 (1.01%)			
Expelled	14,640 (2.38%)			
<b>Post-July, 2007 Values</b>				
LAOJJ Contact	12,239 (1.99%)			
Felony LAOJJ Contact	6,167 (1%)			
Misdemeanor LAOJJ Contact	6,401 (1.04%)			
Status Offense LAOJJ Contact	2,541 (0.41%)			

fairly low 0.102, suggesting low levels of variation across the groups examined, but the design effect estimate (DEE) for this model was 34.2,<sup>3</sup> indicating the need for a mixed effects design to provide more appropriate standard errors due to variation across groups (Muthen & Satorra, 1995).<sup>4</sup> Coefficients for all variables except rural school attendance and birth year were highly statistically significant at the .001, two-tailed level. Based on odds ratios, controlling for other predictors, the odds of future LAOJJ contact are over twice as high for those who are male (OR = 2.89,  $p < .001$ ), who have been expelled (OR 2.83,  $p < .001$ ), or who have been on free lunch (OR = 2.43,  $p < .001$ ). Those failing a grade (OR = 1.99,  $p < .001$ ) and previously encountering the LAOJJ (OR = 1.78,  $p < .001$ ) had odds ratios approaching 2.

The 95% confidence interval did not include the 1 value for the school grouping variable, indicating that there were significant differences between schools. This was reinforced by the likelihood ratio test, which demonstrated that the model with the random effect included leads to a better fitting model than if this factor was not included (LR = 2116.02,  $p < .001$ ). The Wald test (a goodness of fit measure in the absence of an  $r^2$  for this kind of model) examined that the likelihood that coefficients for the variables in this model were simultaneously equal to 0, and the Wald  $\chi^2$  value for this model was extremely, and statistically significantly, low (Wald  $\chi^2[9] = 10377.88$ ,  $p < .001$ ).

Figure 2 showed the relative probabilities that otherwise average youth would encounter the LAOJJ via AAP values if they represented a given value on a binary predictor variable of interest. The largest odds-ratio was for gender, yet the group with the highest probability of encountering the LAOJJ was average youth who were previously expelled from school; this group had a greater than 3% probability of re-entering LAOJJ.

<sup>3</sup> Design effect:  $(1 + ICC(\text{average number of people in each group} - 1))$ ; see Snijders and Bosker, 1999.

<sup>4</sup> ICC and DEE values are not reported for subsequent models, but they are all similarly very high.

Thus, the AAPs assisted with teasing out the practical implications of statistical findings that may be masked via traditional statistical results. The next most significant findings were for youth who previously encountered LAOJJ, followed by males and those who had previously failed a grade, each having a probability near 2% of encountering LAOJJ.

Model 2 examined predictors of LAOJJ felony offenses—the most severe type of offense classified in the LAOJJ system. Similar to the first

Figure 2: Average adjusted predictive margins for any LAOJJ contact.

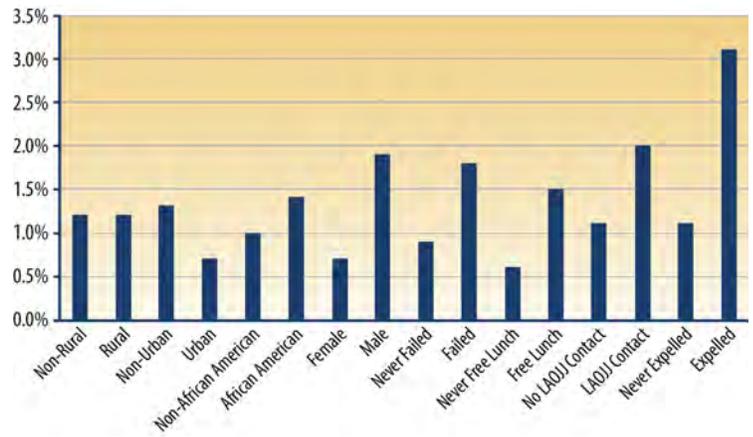


Table 2: Mixed Effects Logistic Regression of Predictors of LAOJJ Contact (Model 1)

	Variable	Odds Ratio/ Estimate (Std. Errors)	Lower 95% CI Threshold	Upper 95% CI Threshold	Average Adjusted Predictive Margins (Schools Unweighted)	
<b>Fixed Effects</b>	Rural	1.00 (.08)	0.85	1.17	No	.012
					Yes	.012
	Urban	.61*** (.03)	0.55	0.67	No	.013
					Yes	.007
	African American	1.37*** (.03)	1.31	1.44	Non-AA	.010
					AA	.014
	Gender	2.89*** (.06)	2.77	3.02	Female	.007
					Male	.019
	Ever Failed	1.99*** (.04)	1.90	2.07	No	.009
					Yes	.018
	Free Lunch	2.43*** (.09)	2.26	2.62	No	.006
					Yes	.015
	Age at First School Contact	.86*** (.01)	0.85	0.88	5	.012
					10	.006
	Birth Year	1.00 (.00)	1.00	1.01	1980	.011
				1990	.011	
Average Yearly Absences	1.04*** (.00)	1.04	1.04	0	.008	
				5	.010	
				10	.012	
				20	.018	
LAOJJ Contact	1.78*** (.08)	1.63	1.94	No	.011	
				Yes	.020	
Expelled	2.83*** (.10)	2.65	3.03	No	.011	
				Yes	.031	
cons	2.74e-05 (0.00)	3.71E-11	20.28			
<b>Random Effects</b>	School	.58 (.02)	.54	.62		
	LR Test <sup>a</sup>	2116.02***				
<b>Model Significance</b>	Wald chi <sup>2</sup> (9)	10377.88***				
<b>Intra-Class Correlation</b>		0.09				
<b>Design Effect Estimate</b>		34.20				

<sup>a</sup>  $\chi^2$  (01) value reported

\*\*\*  $p < .001$

Table 3: Mixed Effects Logistic Regression of Predictors of LAOJJ Felony Offense (Model 2)

	Variable	Odds Ratio/ Estimate (Std. Errors)	Lower 95% CI Threshold	Upper 95% CI Threshold	Average Adjusted Predictive Margins (Schools Unweighted)	
<b>Fixed Effects</b>	Rural	1.06 (.08)	0.91	1.24	No	.004
					Yes	.004
	Urban	.80*** (.04)	0.72	0.87	No	.004
					Yes	.003
	African American	1.35*** (.04)	1.27	1.44	Non-AA	.004
					AA	.005
	Gender	7.63*** (.33)	7.01	8.30	Female	.001
					Male	.011
	Ever Failed	2.08*** (.06)	1.96	2.21	No	.003
					Yes	.007
	Free Lunch	2.29*** (.12)	2.07	2.54	No	.002
					Yes	.005
	Age at First School Contact	.87*** (.01)	0.85	0.89	5	.004
					10	.002
Birth Year	.99 (.00)	0.98	1.00	1980	.005	
				1990	.004	
Average Yearly Absences	1.04*** (.00)	1.04	1.04	0	.003	
				5	.004	
				10	.004	
				20	.007	
LAOJJ Contact	1.98*** (.11)	1.77	2.22	No	.003	
				Yes	.008	
Expelled	2.39*** (.11)	2.19	2.62	No	.004	
				Yes	.010	
cons	2024.52 (19541.37)	1.23E-05	3.33E+11			
<b>Random Effects</b>	School	.46 (.02)	.42	.51		
	LR Test <sup>a</sup>	495.85***				
<b>Model Significance</b>	Wald chi <sup>2</sup> (9)	6672.68***				
<b>Intra-Class Correlation</b>		.06				
<b>Design Effect Estimate</b>		23.51				

<sup>a</sup>  $\chi^2$  (01) value reported

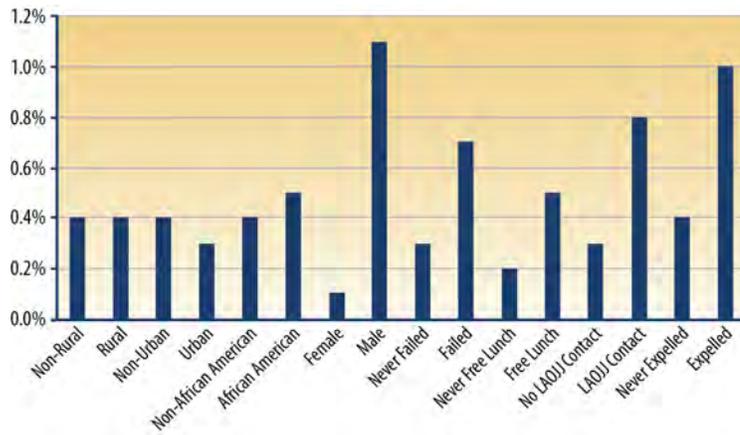
\*\*\*  $p < .001$

model, all findings except the rural and birth year measures were statistically significant at the .001, two-tailed level. However, in the felony model, gender had a much higher odds-ratio value, demonstrating that the odds of LAOJJ felony offenses were more than 7 ½ times higher for males than females (OR = 7.63,  $p < .001$ ), controlling for other factors. Expulsion (OR = 2.39,  $p < .001$ ), free lunch (OR = 2.29,  $p < .001$ ), and previous grade failure (OR = 2.08,  $p < .001$ ) all had odds ratios greater

than 2, and LAOJJ contact (OR = 1.98,  $p < .001$ ) approached 2.

However, Figure 3 again demonstrated the importance of looking beyond statistical coefficients alone. Though being male still yielded the highest AAP value, being expelled was nearly as high. Note that the AAP values were lower across the board for the felony model than for the general model, which was a reflection of the lower percentage of youth who will commit felony

Figure 3: Average adjusted predictive margins for felony LAOJJ contact.



offenses generally. Despite this, those who commit felony offenses were likely to cause significantly more damage to their victims and society and were likely to create a much greater burden on the criminal justice system later in life than their counterparts committing lesser offenses. As such, the findings of this specific model should not be downplayed due to the smaller percentage of those experiencing this specific outcome.

The final models examining the general LAOJJ population looked at those whose most

Table 4: Mixed Effects Logistic Regression of Predictors of LAOJJ Misdemeanor Offense (Model 3)

	Variable	Odds Ratio/ Estimate (Std. Errors)	Lower 95% CI Threshold	Upper 95% CI Threshold	Average Adjusted Predictive Margins (Schools Unweighted)	
<b>Fixed Effects</b>	Rural	1.04 (.11)	0.85	1.27	No	.006
	Urban	.56*** (.04)	0.49	0.63	No	.007
	African American	1.64*** (.05)	1.54	1.75	Non-AA	.005
	Gender	2.48*** (.07)	2.34	2.63	Female	.004
					Male	.009
	Ever Failed	1.96*** (.06)	1.85	2.08	No	.005
					Yes	.009
	Free Lunch	2.52*** (.14)	2.27	2.81	No	.003
					Yes	.008
	Age at First School Contact	.87*** (.01)	0.85	0.89	5	.006
					10	.003
	Birth Year	1.02*** (.00)	1.01	1.03	1980	.004
					1990	.005
	Average Yearly Absences	1.04*** (.00)	1.04	1.04	0	.004
					5	.005
					10	.006
					20	.009
	LAOJJ Contact	1.87*** (.11)	1.66	2.09	No	.006
					Yes	.011
Expelled	2.84*** (.13)	2.59	3.10	No	.006	
				Yes	.016	
cons	1.58E-20*** (1.50E-19)	1.33E-28	1.88E-12			
<b>Random Effects</b>	School	.70 (.03)	.65	.76		
	LR Test <sup>a</sup>	1690.89***				
<b>Model Significance</b>	Wald chi <sup>2</sup> (9)	5707.91***				
<b>Intra-Class Correlation</b>		.13				
<b>Design Effect Estimate</b>		49.34				

<sup>a</sup>  $\chi^2$  (01) value reported

\*\*\*  $p < .001$

Table 5: Mixed Effects Logistic Regression of Predictors of LAOJJ Status Offense (Model 4)

	Variable	Odds Ratio/ Estimate (Std. Errors)	Lower 95% CI Threshold	Upper 95% CI Threshold	Average Adjusted Predictive Margins (Schools Unweighted)	
Fixed Effects	Rural	.82 (.11)	0.63	1.08	No	.002
					Yes	.002
	Urban	.38*** (.03)	0.32	0.45	No	.003
					Yes	.001
	African American	1.20*** (.06)	1.09	1.32	Non-AA	.002
					AA	.003
	Gender	1.11** (.05)	1.03	1.21	Female	.002
					Male	.002
	Ever Failed	2.06*** (.09)	1.89	2.26	No	.002
					Yes	.004
	Free Lunch	2.94*** (.25)	2.48	3.49	No	.001
					Yes	.003
	Age at First School Contact	.86*** (.02)	0.82	0.89	5	.002
					10	.001
Birth Year	1.03*** (.01)	1.02	1.05	1980	.001	
				1990	.002	
Average Yearly Absences	1.04*** (.00)	1.04	1.05	0	.002	
				5	.002	
				10	.002	
				20	.004	
LAOJJ Contact	1.16*** (.13)	0.94	1.44	No	.002	
				Yes	.003	
Expelled	3.52*** (.26)	3.05	4.07	No	.002	
				Yes	.008	
cons	5.24E-32 (7.73E-31)	1.42E-44	1.93E-19			
Random Effects	School	.84 (.04)	.77	.92		
	LR Test <sup>a</sup>	855.01***				
Model Significance	Wald chi <sup>2</sup> (9)	1905.88***				
Intra-Class Correlation		.18				
Design Effect Estimate		66.68				

<sup>a</sup>  $\chi^2$  (01) value reported

\*\*\*  $p < .001$

serious LAOJJ offense was a misdemeanor (Model 3) or status offense (Model 4). These results are summarized in Tables 4 and 5. All coefficients except for rural control were highly statistically significant in each of these models. Based on odds ratios, most of these predictors had a roughly comparable impact in the felony, misdemeanor, and status offense models. However, the gender coefficient was a noteworthy exception, as this becomes less and less important when

the severity of the offense decreases. The odds of felony offense commission were more than 7 1/2 times higher for males than females (OR = 7.63,  $p < .001$ ), while the odds of committing a misdemeanor offense were 2 1/2 times higher for males than females (OR = 2.48,  $p < .001$ ). The gender odds ratios is even lower in the case of committing status offenses (OR = 1.11,  $p < .001$ ), controlling for other influences. Conversely, expulsion had a *greater* impact as the severity of

the offense decreased (OR [felony model] = 2.39,  $p < .001$ ; OR [misdemeanor model] = 2.84,  $p < .001$ ; OR [status offense model] = 3.52,  $p < .001$ ).

Figures 4 and 5 graph select AAP values for the misdemeanor and status offense models, respectively: When compared with the Figure 3 graph of felony offenses, we have demonstrated that the relative influences of phenomena impacting these outcomes were somewhat different in all cases. In terms of the AAP values, the expulsion measure was the most consistently major predictor of later LAOJJ contact for otherwise average youth, no matter the severity of the offense. Prior LAOJJ contact mattered most in the felony and misdemeanor models for otherwise average youth but less so in the status offense model, where failing a grade mattered more. And as odds ratios suggested, the relative

impact of an average male experiencing LAOJJ contact decreased as the severity of the offense decreased (though this change in impact across models was not as noteworthy as the comparable finding associated with expulsion from school).

## Conclusion

This study examines characteristics of a sample of Louisiana public school children to determine any predictive factors on the severity of future juvenile offending. Louisiana school children experience poverty at one of the highest rates in the country and are enrolled in a state school system near the bottom of national school performance rankings. Although the sample examined is not representative of all children, this study does capture children who are typically at high risk of school problems and possible juvenile justice involvement. The results may be more closely representative of disadvantaged children who live in Southern states.

Expulsion is the most severe consequence meted out by schools; in Louisiana, expulsion requires the child to be removed from the school for the rest of the school year. Suspensions are temporary and require the child to return to school after the suspension period is over. This study suggests that among examined variables, school expulsion is the most consistently strong predictor of juvenile justice contact, regardless of level of severity (felony, misdemeanor, status offense) of the contact. However, when students have committed a more severe offense, such as a felony, expulsion is not as significant a factor in leading them to OJJ contact. Therefore, expulsion is a significant factor in leading a student to OJJ contact, but it is more significant when the student has committed a less serious offense. Most children spend the majority of their time in school, and it is not surprising that some juvenile crimes that can lead to expulsion, such as fighting and simple assault offenses, occur during school hours (Soule,

Figure 4. Average adjusted predictive margins for misdemeanor LAOJJ contact.

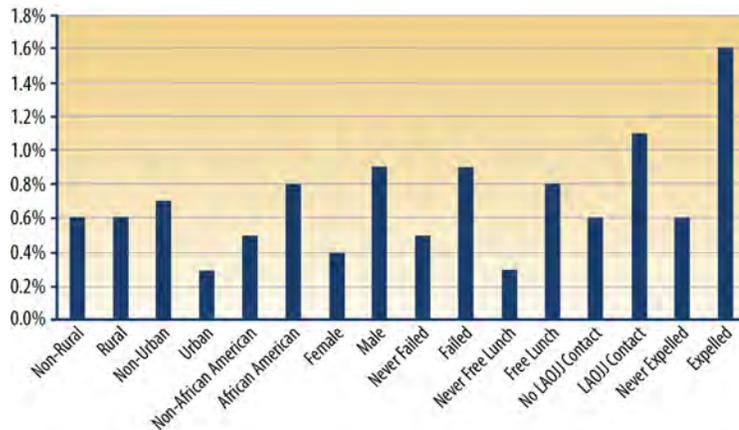
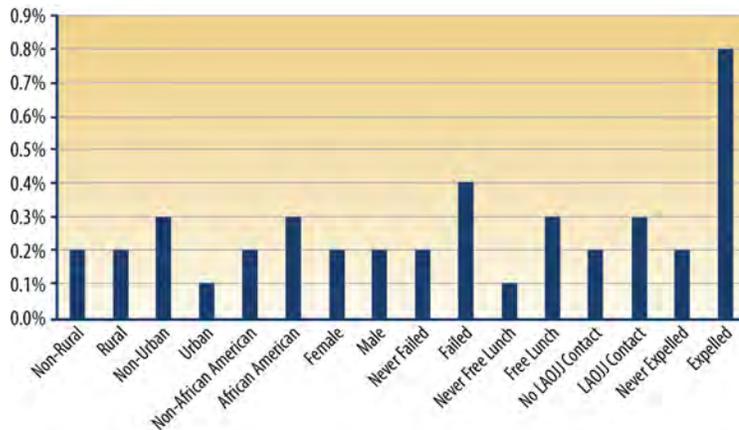


Figure 5. Average adjusted predictive margins for status offense LAOJJ contact.



Gottfredson, & Bauer, 2008). Being male is a strong predictor of juvenile justice contact across models. However, being male matters more as the severity of the offense increases. Examining the AAPs, male gender is a much stronger predictor for felony offenses than even prior juvenile justice involvement, which is not the case in any other model examined. In other words, being male matters most when the severity of the offense is the highest. As such, although school behavior and the associated disciplinary response are troubling in all situations considered and certainly should be addressed, gender seems to be connected to the most costly types of offenses with the most severe consequences for both victims and offenders. Of course, negative educational and criminological outcomes are also affected by psychosocial issues not modeled in this study, relating to the socialization and upbringing of those at-risk male children who eventually commit severe juvenile offenses. School- and community-based programs that focus on prosocial behaviors, facilitate peer and family support, and promote school engagement and academic achievement for the particularly worrisome group of at-risk male youth may certainly be warranted, as increasing school engagement can decrease delinquency (Hirschfield & Gasper, 2011).

Further, the finding that prior LAOJJ contact is a significant predictor of later LAOJJ contact in all models suggests that exposure to the juvenile justice system often positions children for more serious, subsequent encounters. Thus, perhaps we should be focused on how to attend to children at risk of juvenile justice involvement as well as on how various systems intervene and deal with these children. The finding that male gender is not as predictive of lesser juvenile justice involvements (i.e., misdemeanor and status offenses) than it is with more serious felony offenses suggests that school and juvenile justice officials need professional development and training so they can better understand gender differences among juvenile offenders. This finding may also be influenced by the rate at which male

and female children are adjudicated for lesser offenses. Statistically, more females than males face the juvenile justice system for status offenses (Hartwig & Myers, 2003), and this may be reflective of a gender bias, as these behaviors may be perceived more negatively when demonstrated by a girl than by a boy.

Although many of the findings from these analyses are intuitive and support the existing body of research, the findings that African American race was generally no more predictive than the other factors (i.e., receiving free school lunch, ever failing a grade, and previous LAOJJ contact) is noteworthy. This is not to say that programs explicitly targeting African Americans are not needed. As African American children are the most likely to encounter various negative outcomes, including LAOJJ involvement, focused attention is needed to address this disproportionality in terms of negative behavioral, educational, workforce, and health outcomes. However, efforts targeting African Americans would do well to consider that the root causes of many of these problem behaviors and outcomes may well lie elsewhere—in homes and communities and in unresolved or possibly unaddressed behavioral issues. Upon close examination (Huizinga et al., 2007), it appears disproportionate minority contact continues to be impacted by longstanding institutionalized racism in communities, which may be contributing to harsher punishments for children of color in schools and in the juvenile justice system.

This study additionally examines geographical locale, defined as either rural or urban. From the national perspective, Louisiana is largely a rural state, and it should be noted that the juvenile court jurisdictions are in the state's few urban areas. Results of the study show that urban students were significantly less likely to be found in juvenile records than were rural or suburban students. More investigation is needed to determine if differences in schools or perhaps the availability of services for children who are in trouble differs

widely among rural and urban areas. Perceptions of juvenile offending by both school and court officials may also be contributing to differences.

One limitation of this study includes omission of salient factors in the administrative records, such as family composition, abuse history, physical health, and substance use history. Students whose records were included attended traditional public schools; students attending private schools were not part of the study, which also limits generalizability. LAOJJ records contain information about children who had formal interaction with the juvenile justice system, and no information is known about children who may not be processed at all due to police discretion; however, this would be limited to lesser law infractions. An additional limitation of this study relates to the nature of the sample observed. Though this is a good representation of all children attending public school in Louisiana during the time of interest, findings may not be generalizable to nonpublic school students or to other states, regions, or countries.

Much has been discussed regarding the school-to-prison pipeline (Christle, Jolivette, & Nelson, 2005; Feierman, Levick, & Mody, 2009-2010; Kim, Losen, & Hewitt, 2010). Examination of characteristics of those who travel this negative pathway aligns with the demographic, school-related, and justice-involved predictors examined. The next challenge may be to realign the pathway so that

interventions tailored to those most at risk may interrupt the progression from school-based and lesser infractions to serious delinquency.

### About the Authors

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# Factors Associated with Turnover Decision Making Among Juvenile Justice Employees: Comparing Correctional and Non-Correctional Staff

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## Abstract

The approximately 20% turnover rate among correctional officers in juvenile facilities adds undue financial and morale costs to facilities that already face budget constraints. This study used exit interviews ( $N = 173$ ) from 2012 to 2015 from a state juvenile justice agency to examine factors impacting voluntary turnover decisions among correctional and non-correctional employees. Juvenile correctional officers reported lower levels of job satisfaction and voluntarily left the organization at a higher rate than non-correctional employees. Employees also significantly differed in their reasons to leave; correctional staff primarily cited concerns over safety and a desire to return to school, whereas non-correctional staff were more likely to leave due to retirement. Exit surveys were a valuable tool that allowed the authors to gain quantitative and qualitative insight into retention and turnover for juvenile justice agencies.

## Introduction

Estimates of turnover among correctional personnel in juvenile facilities range between 20%

and 25% per year (Minor, Wells, Angel, & Matz, 2011; Wright, 1993). High turnover not only impacts staff morale but also costs organizations approximately \$10,000 to \$20,000 per correctional employee due to recruitment, training, and hiring costs (Lambert & Hogan, 2009). Because correctional organizations rely heavily on correctional personnel to operate the facilities, secure residents, and address resident conflicts (Mitchell, Mackenzie, Styve, & Gover, 2000), it is important to highlight the significance of voluntary turnover within this cost model. Voluntary turnover occurs when an employee chooses to leave, whereas involuntary turnover occurs when an employee is terminated or laid off by the organization (Minor et al., 2011). Voluntary turnover is generally seen as more costly because it can be disruptive, contribute to employee burnout, and lower the morale of the organization (Minor, Wells, Lambert, & Keller, 2014; Wright, 1993). In contrast, involuntary turnover is typically less disruptive and is in the best interest of the organization (McShane & Williams, 1993). Given the constrained budgets and sizeable workload of most state correctional organizations, high voluntary turnover is

a cost most agencies cannot afford to sustain. Considering the cost and importance of correctional personnel to the organization, it seems surprising that voluntary turnover has been a historically under-researched field, particularly within juvenile correctional organizations.

The present study contributes to the literature on correctional staff turnover in several important ways. First, it adds to the dearth of research on correctional staff working within juvenile facilities. Juvenile facilities differ from their adult counterparts in their rehabilitative mission and detention center structure, which could impact both the type of people who choose to work in a juvenile facility and their work experience in the facility (Wells, Minor, Angel, Matz, & Amato, 2009). Second, the present study measures actual voluntary turnover of state juvenile justice employees rather than turnover intent, a variable that more commonly appears in the literature. Some scholars argue that turnover intent can be used as a proxy for turnover behavior and assert that it can lead to negative outcomes on its own, such as decreased morale and low organizational commitment (Lambert & Paoline, 2010; Matz, Wells, Minor, & Angel, 2013; Tipton, 2002). In fact, Lambert, Hogan, and Barton (2001) and Lambert (2006) have constructed causal models of turnover intent to examine direct and indirect influence of turnover decisions. By contrast, other scholars have raised concerns that intent does not predict actual turnover (Lambert, Hogan, & Barton, 2002; Minor, Dawson-Edwards, Wells, Griffith, & Angel, 2009). Given the controversy in the literature, both constructs warrant further investigation. To our knowledge, only one other recent study has measured actual turnover of juvenile correctional officers (JCOs); Minor et al. (2011) used a sample of basic training academy graduates from the Kentucky Department of Juvenile Justice. The present study builds upon their work by examining the role of global job satisfaction and other factors in employee turnover with non-correctional and correctional staff. The majority of studies do not distinguish these

two groups, leading to an incomplete picture of turnover in correctional institutions (Lambert et al., 2002). Third, correctional facilities can vary widely from state to state in terms of organizational structures (e.g., pay structures, promotion procedures), so findings from research in any given state may or may not translate to facilities in other states. Fourth, the present study includes measures of attraction to new job opportunities as well as qualitative findings. In fact, only one prior study of correctional staff included an open-ended, qualitative component, even though qualitative data may be able to capture employees' emotions and concerns not addressed through quantitative approaches (Minor et al., 2009). As Udechukwu (2009) observed, "it is not enough to recognize that correctional officers have unmet or met needs. Identifying, as best as possible, which needs create satisfaction and which create dissatisfaction is equally as important" (p. 78). Regarding attraction to new opportunities, Wright (1993) noted that some of the best employees in a juvenile detention center left their positions due to the availability of other opportunities. This study expands upon that finding by exploring what specifically attracted employees to a new job opportunity, which creates a unique and much needed insight into voluntary turnover.

## Literature Review

As Lambert and colleagues (2002) observe, the definition of *correctional officer* is not agreed upon in the literature. The term has been defined several ways, from those with custodial powers over inmates to all general employees in the detention centers such as counselors or educators. Inconsistent operational definitions across studies raise questions about generalizability and may limit utility for agencies (Lambert et al., 2002). Further, research examining differences among employees with custodial power compared to treatment personnel has exclusively taken place in adult facilities (Armstrong & Griffin, 2004). This research finds that although

different aspects of the jobs cause stress to custodial and non-custodial employees, both types of employees report similar overall levels of stress and job satisfaction (Armstrong & Griffin, 2004). Given the dearth of pertinent literature that examines a wide range of stressors within adult corrections, however, it is difficult to knowledgeably assess the differences between correctional staff with custodial powers and non-correctional staff.

Furthermore, using the proxy of turnover intent compared to actual turnover is controversial within the literature. As noted above, some scholars claim turnover intent is a meaningful proxy for turnover data, as it is the last, necessary cognitive step prior to actually leaving an organization (Lambert et al., 2001; Lambert, 2006). However, other scholars have argued that intent may not predict actual turnover, given that employees who do not plan to leave may in fact leave without notice, and those who desire to leave may not actually do so (Minor et al., 2009). For example, Wells, Minor, Lambert, and Tilley (2016) found that turnover intent among JCOs in a juvenile correctional facility was not significantly related to their actual turnover behavior. The present study utilized actual turnover data, but we drew upon prior studies of both turnover intent and actual turnover data as sources of information in the literature and, as such, have denoted when information related to turnover intent or turnover data.

Research on factors associated with correctional staff turnover decisions typically examines individual- and organizational-level factors. Individual factors, also called personal characteristics, pertain to the characteristics of the individual employee (e.g., age, gender, education) and are generally static (Lambert et al., 2002; Mitchell et al., 2000). Organizational factors, such as job satisfaction and stress, are the combination of external, work environment characteristics and internal (individual) factors (Mitchell et al., 2000). Organizational factors are of particular interest in both research and practice because correctional

facilities are more able to exert influence over them and in doing so, ideally reduce turnover.

From an organizational perspective, one of the most studied variables is job satisfaction. Job satisfaction can be measured through a general, global evaluation and/or through specific facets of satisfaction. Not surprisingly, low job satisfaction makes outside opportunities seem more attractive to correctional employees (Matz et al., 2013; Mitchell et al., 2000; Udechukwu, Harrington, Manyak, Segal, & Graham, 2007; Wright, 1993). Specifically, studies suggest that satisfaction with coworkers and supervisors is inversely associated with voluntary turnover decisions among juvenile correctional employees (Griffin, Hogan, & Lambert, 2012; Minor et al., 2011; Mitchell et al., 2000; Tipton, 2002). However, not all of these studies measured actual turnover, and they did not consistently define correctional staff. Only one study (Minor et al., 2011) to our knowledge has examined both a global evaluation of job satisfaction as well as specific facets of satisfaction in relation to turnover of juvenile correctional officers. The study found that turnover at 1 year of employment was significantly more likely when correctional staff reported less global satisfaction, and in particular, less satisfaction with work and coworkers (Minor et al., 2011). However, that study did not include a measure of non-correctional staff. Given the differing nature of typical job duties for correctional and non-correctional staff, it may be that employees in the different job categories may value different aspects of their work.

Safety is another organizational factor associated with correctional staff turnover. In particular, lower perceptions of safety are associated with increased correctional officer stress, turnover, and intention to leave in juvenile detention centers (Matz et al., 2013; Tipton, 2002; Wells et al., 2009). Prior studies have also explored perceived fear of victimization, which can be viewed as a measure of perceived safety, and found that females in corrections consistently report an increased perceived fear of victimization at

work (Gordon, Moriarty, & Grant, 2003; Gordon, Proulx, & Grant, 2013). Other individual factors such as prior victimization, race, education, and security level have been shown to impact correctional officer fear of inmates as well (Gordon et al., 2003; Gordon et al., 2013). Research in adult settings has also shown that correctional staff more frequently cite safety as a concern that impacts their overall satisfaction within their job as compared to treatment personnel (Armstrong & Griffin, 2004). Theoretically one can imagine why correctional officers may experience heightened safety/victimization concerns. For example, Udechukwu (2009) describes how correctional officer perceptions of safety are distinct from perceptions of safety in other (i.e., non-correctional) positions, observing that “inmates have been known to consistently attack officers with improvised weapons, thus, heightening the safety needs of correctional officers” (p. 76).

Not only have jobs in corrections been notoriously linked with safety concerns, but also with low pay. The general organizational literature suggests a negative relationship between pay satisfaction and turnover intent, such that dissatisfaction with low pay predicts high turnover intention (Rizqi & Ridwan, 2015; Trevor, Gerhart & Boudreau, 1997). Correctional literature, in particular, suggests that inadequate pay, limited recognition, and few opportunities for professional growth and promotion are associated with increased dissatisfaction in correctional staff (Minor et al., 2009; Udechukwu et al., 2007). Yet, this dissatisfaction did not significantly predict turnover (Minor et al., 2011). Research has not specifically compared correctional and non-correctional staff when examining the relationship between pay satisfaction and turnover (or turnover intent). It is possible that differing supervisory structures, opportunities for advancement, or even organizational subcultures within the same agency could all foster differences in pay satisfaction and ultimately turnover.

The fact that low pay does not predict turnover for juvenile correctional staff, contrary to the

general employment literature, suggests that employees may enter the field in spite of the low pay. Indeed, it appears that juvenile correctional officers enter juvenile corrections because they believe in its mission and want to positively impact youths’ lives (Tipton, 2002; Udechukwu et al., 2007). However, given the various organizational stressors, staff may grow disillusioned with the organization’s mission. Tipton (2002) highlights that correctional organizations face a significant difficulty in finding and retaining “capable staff that believes in the rehabilitation potential of all incarcerated youth despite the demanding nature of the job” (p. 95). Commitment to an agency’s mission/vision statement is a particularly challenging concept to capture, and studies have generally conceptualized this idea as organizational commitment. Studies in adult facilities suggest that staff members who have higher organizational commitment are less likely to voluntarily leave organizations (Lambert, 2006; Lambert & Hogan, 2009), but recent work suggests that organizational commitment may not have a simple, linear relationship with correctional staff behavior (Lambert, Griffin, Hogan, & Kelley, 2015). Their research supported the notion that it is a multidimensional concept, which increases the complexity of the relationship between the employee and organization (Lambert et al., 2015). To our knowledge, only Minor et al. (2011) measured organizational commitment in relation to turnover in juvenile detention centers via the Organizational Commitment Questionnaire (OCQ). Minor et al. (2011) did not find a significant relationship between organization commitment and staff turnover; however, the authors noted that measuring organizational commitment 2 months after employees began their respective positions may not have been sufficient time for the construct to fully develop.

Many of these constructs may be better understood with the utilization of qualitative methods. Qualitative data, particularly within a detention center, can be very difficult to collect (Beyens, Kennes, Snacken, & Tournel, 2015). Employees at

detention centers operate in a dubious environment, which makes any outside research difficult and, as such, research performed in these settings with correctional staff has a notoriously low response rate (Beyens et al., 2015; Tipton, 2002; Tewskbury & Higgins, 2006). Moreover, the dominance of quantitative approaches in the field of criminology is well established (Jacques, 2014). Although arguably underutilized, qualitative data can be a rich source of insight into a population of interest (Jacques, 2014). Beyens et al. (2015) argue that qualitative research is better able to grasp the emotional and social characteristics in a correctional setting because it reveals the dynamic aspects of the prison culture as well as the social and emotional environment, and it leads to a more comprehensive view of detention environments.

### The Present Study

Using a sample of written exit interviews ( $N = 173$ ), the present study compared factors contributing to voluntary turnover among correctional and non-correctional employees from a state juvenile justice agency (JJA) in the mid-Atlantic region. The study extended the limited existing literature in several ways. First, the data source allowed us to examine actual employee turnover, instead of turnover intent, which is important, given concerns that turnover intent is not a strong predictor of actual turnover (Minor et al., 2009). Second, the sample was derived from a juvenile justice agency, a chronically underrepresented population in corrections research, particularly as it pertains to staff turnover. Third, the study assessed not only employees' reasons for leaving but also their attraction to new opportunities, which may be a conceptually distinct variable. Finally, the study reported qualitative findings, which may be particularly advantageous for understanding employee satisfaction issues.

The present study specifically investigated differences in (a) tenure, (b) job satisfaction, (c) factors predicting turnover, and (d) factors attracting respondents to new job opportunities for correctional and non-correctional staff at a JJA. We

hypothesized that correctional staff would report a shorter tenure in their position than non-correctional staff, based on the research on high turnover among correctional staff and overall turnover levels in the field (Minor et al., 2011; Wright, 1993). Additionally, because research suggests that all employees of correctional organizations experience stress from working within corrections, which may lead to similar levels of global satisfaction, we also hypothesized that correctional and non-correctional staff would report similar overall job satisfaction (Armstrong & Griffin, 2004; Lambert et al., 2002; Lambert & Paoline, 2010). Due to the tantamount concerns of safety for correctional staff, it follows that correctional and non-correctional employees may significantly differ in specific factors predicting turnover (Armstrong & Griffin, 2004; Matz et al., 2013; Tipton, 2002; Wells et al., 2009). Thus, we predicted that correctional staff would significantly differ from non-correctional staff in the stressors they experienced as well as in the specific factors predicting turnover and attraction to new opportunities. Though the specific stressors experienced may also lead to different attractions to new opportunities, it is important to note that this relationship has not been examined previously in the literature.

Finally, we explored how correctional and non-correctional staff described aspects of their job and overall experience at JJAs through qualitative measures, as they are thought to capture the emotional and social characteristics of correctional settings (Beyens et al., 2015). In particular, we were interested in how correctional and non-correctional staff described the most enjoyable and least enjoyable aspects of their job as well as whether they described their overall work experience at the JJA as positive or negative.

### Method

#### Participants

The Human Resources department in the state JJA where we collected data requested that all staff working at JJA facilities voluntarily complete

a standardized exit interview form upon leaving the organization. This study used 173 exit interview forms from verified JJA employees who voluntarily left the organization between January 2012 and March 2015. Following Minor et al. (2011), in the present study, *correctional staff* ( $n = 44$ ) was defined as individuals holding the title Juvenile Correctional Officer (or some variant; e.g., Senior Juvenile Correctional Officer), and all other employees of the state agency were classified as *non-correctional staff*. By adopting the operationalization of correctional staff from Minor et al. (2011), we hoped to address concerns of generalizability raised in the literature (Lambert & Paoline, 2010). Although employed by the same corrections agency, non-correctional staff most notably differed from correctional staff in that they did not have custodial power over the detainees at the detention facility. Of the non-correctional staff, the most common positions were probation officers ( $n = 53$ ) and office administrators ( $n = 30$ ). The additional positions included counselors/psychology associates, education specialists, medical professionals, and other general administrative positions. The sample excluded interns, as their roles were temporary in nature, and individuals who specifically stated they were laid off or transitioning within the JJA (following the work of McShane & Williams, 1993). The exit survey did not include demographic information such as gender, ethnicity, age, and education level, so consequently, we did not have access to that information. However, as organizational-level exerted greater influence on turnover decisions than

individual-level factors in prior research, it is reasonable to assume that the available data may still capture the factors exerting the greatest influence on turnover (Mitchell et al., 2000).

## Variables

Participants supplied basic employee information, including their position title, work location, date of separation from the JJA, and date of survey completion. The standardized exit interview forms also included questions about the employees' decisions to leave, attraction to a new job opportunity (if applicable), and satisfaction with a variety of organizational factors while employed at the JJA. At the end of the form, participants were invited to provide additional comments or concerns in regard to their employment at the JJA.

*Decision to leave.* The standardized exit interview form contained a list of 14 specific factors

Table 1. Percent of Correctional and Non-Correctional Staff Citing Reasons to Leave

	Correctional Officers ( $n = 44$ )		Non-Correctional Officers ( $n = 127$ )		Total Sample ( $N = 171$ )		$\chi^2$
	$n$	%	$n$	%	$n$	%	
<b>Individual Factors</b>							
Commute	11	25.0	20	15.7	31	18.1	1.89
Personal/family responsibilities	12	27.3	20	15.8	32	18.7	2.85
Relocation	5	11.4	17	13.4	22	12.9	.12
Retirement	2	4.5	35	27.6	37	21.6	10.21**
Return to school	9	20.5	1	.79	10	5.9	22.96***
Career change	11	25	25	19.7	36	21.1	.56
<b>Organizational Factors</b>							
Opportunity for promotion	9	20.5	36	28.3	45	26.3	1.05
Supervision	10	22.7	22	17.3	32	18.7	.63
Assignments	7	15.9	17	13.4	24	14.0	.17
Work hours	11	25.0	22	17.3	33	19.3	1.24
Training opportunities	4	9.1	7	5.5	11	6.4	.70
Workload	3	6.8	18	14.2	21	12.3	1.64
Salary	17	38.6	60	47.0	77	45.0	.98
Safety	12	27.3	6	4.7	18	10.5	17.64***

\*\* $p < .001$ ; \*\*\* $p < .001$

that potentially influenced the employees' decisions to leave (see Table 1) as well as an "other" (open-ended) item. Respondents were instructed to check all factors that applied. Following Lambert et al. (2002) and Wells et al. (2009), the 14 factors were grouped into two categories: individual factors (six items) and organizational factors (eight items). Individual factors included: *commute, personal/family responsibilities, relocation, retirement, return to school, and career change*. Organizational factors included: *salary, safety concerns, work hours, workload, supervision, assignments, promotion or opportunity for promotion, and training opportunities*. Of the 48 respondents who marked the fifteenth ("other") item, 34 responses were elaborations upon existing factors and were therefore recoded into the corresponding individual or organizational category. The remaining 14 responses indicated some aspect of their work environment (e.g., poor treatment of employees, inconsistency in rule enforcement, disillusionment with administration) that could not reliably be recoded into an existing factor. Because they closely aligned with the final open-ended factor on the exit interview form, those 14 responses were grouped and analyzed with that item as described below.

**Attraction to new position.** If respondents were leaving the JJA to accept another position, they were asked to provide information about what attracted them to the new opportunity. Again participants were asked to select all that applied from a list of factors, similar but not identical to the list above, which included:

*salary, career advancement, working conditions, training opportunities, home/work commute, and*

Table 2. *Attraction to New Opportunities Among Correctional and Non-Correctional Staff*

	Correctional Officers (n = 28)		Non-Correctional Officers (n = 73)		Total Sample (N = 101)	
	n	%	n	%	n	%
Salary	15	53.6	50	68.5	65	64.4
Benefits	4	14.3	9	12.3	13	12.9
Career advancement	20	71.4	45	61.6	65	64.4
Working conditions	14	50.0	24	32.9	38	37.6
Training opportunities	11	39.3	16	21.9	27	26.7
Commute	11	39.3	16	21.9	27	26.7
Alternate work schedule	10	35.7	18	24.7	28	27.7

All *p*'s > 0.05.

Table 3. *Job Satisfaction Among Correctional and Non-Correctional Staff*

	Correctional Staff (n = 43–44)	Non-correctional Staff (n = 125–129)	<i>t</i>	<i>d</i>
Job Satisfaction item	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )		
Relationship with team members	3.73 (1.25)	4.34 (.93)	3.00**	.62
Relationship with supervisor	3.70 (1.29)	3.91 (1.43)	.90	
Fringe benefits	3.59 (.90)	3.78 (1.01)	1.19	
Performance reviews/feedback	3.39 (1.17)	3.74 (1.32)	1.69	
Work space	3.34 (.99)	3.95 (1.08)	3.42***	.58
Safety practices	3.25 (1.18)	3.64 (.97)	1.97	
Work hours	3.11 (1.37)	3.92 (1.12)	3.54***	.70
Opportunities for cross-training within work unit	3.05 (1.22)	3.39 (1.20)	1.64	
Recognition of work accomplishments	2.95 (1.27)	3.29 (1.29)	1.51	
Access to continuing education and training	2.95 (1.22)	3.51 (1.17)	2.64**	.48
Career advancement opportunities	2.72 (1.25)	2.64 (1.14)	-.39	
Salary	2.64 (1.18)	2.61 (1.05)	-.13	
DJJ values match its management practices	2.52 (1.30)	3.17 (1.28)	2.84**	.51

Note. Items measured on a scale of 1 (very dissatisfied) to 5 (very satisfied). \*\**p* ≤ .01, \*\*\**p* = .001

*alternate work schedule* (see Table 2). At the end of this section, an open-ended question gave respondents the opportunity to list other factors that impacted their attraction to a new opportunity or to expand upon their dichotomous selections. Thirty respondents (17.1% of the sample) indicated the “other” item. Similar to the decision-to-leave question, 28 responses were elaborations upon existing factors and thus were recoded into those factors. Eight respondents’ statements were of a personal nature and did not fit into existing factors; they were included in the qualitative section below. Those who left without taking another position or did not answer this question were treated as missing data.

*Job satisfaction.* Employees were next asked to respond to a defined list of 13 factors potentially impacting job satisfaction on a Likert scale ranging from 1 (very satisfied) to 5 (very dissatisfied). The list contained factors pertaining to working conditions or compensation such as *work hours, work space, salary, fringe benefits, and safety practices* as well as factors pertaining to professional relationships and performance review and recognition (see Table 3 for complete list).

### Qualitative Content Analysis Coding

In addition to the open-ended (“other”) items for the questions pertaining to decision to leave and attraction to new position, employees were given the opportunity to provide additional comments via three separate open-ended questions. First, respondents were asked to provide information regarding what they enjoyed most about

their position. Second, employees were asked to elaborate on what they disliked most about their position. Third, at the end of the survey, respondents were asked to provide any other comments concerning their time at the JJA.

Table 4. *Themes Emerging in Open-Ended Responses*

Theme	Theme Description	Example Statements
<b>Most enjoyed about work experience</b>		
Youth/working with youth	Positive feelings about the juvenile residents or the experience of working with detained youth	“Creating positive relations with residents”
Coworkers/personnel	Positive feelings about coworkers/colleagues	“Working with sincere, honest people”
Work environment/job elements	Aspects of the work environment, culture, or core elements of the position	“Sense of community within the unit”
Sense of helping	Offering help, assistance, or support to the detained youth or families	“Helping the residents grow and mature”
Mission/meaning	Belief in the agency’s overarching mission; personal satisfaction derived from work there	“Meaningful work that improved lives”
Training	Opportunities provided for training/professional development	“The training provided”
Everything	Generalized, summative positive comments	“Loved all aspects of job”
<b>Disliked most about work experience</b>		
Administration/supervisors	Actions or turnover rates of direct supervisors, managers, or agency leadership	“Frequent changes in administration”
Work environment/culture	Aspects of the professional environment, culture, or work atmosphere	“Inconsistencies and departmental favoritism”
Core job elements	Duties or responsibilities specific to the employee’s particular job title or employment situation	“[Employment site is] long distance from home”
Salary/financial	Salary, benefits, or other aspects of compensation	“Low salary”; “Lack of adequate salary compensation”
Mundane tasks	Job duties or tasks perceived as rote or boring	“Relentless paperwork”; “Emphasis on data entry”
Lack of advancement	Perception of inadequate opportunities for promotion or career advancement	“No chance of promotion”
Safety	Any reference to personal safety concerns while on duty	
Coworkers	Negative experiences with or perceptions of colleagues	“Staff with no heart for the job”; “Coworkers didn’t always have back”
Lack of training/support	Perception of inadequate job training or professional support from direct supervisors or agency in general	“Poor support from central office”
Youth/families	Negative experiences with or perceptions of detained youth or their families	“Dealing with parents of juveniles”
Politics/disillusionment	References to interpersonal discord or a general feeling of frustration or cynicism about the job or agency	“Being blamed for everything”; “Working on time sensitive projects that were not used or appreciated”
Nothing	No dislikes at all about employment experience	“[There was] nothing I disliked”

We used a Qualitative Content Analysis approach (QCA; Schreier, 2012a) to examine the answers to these questions. QCA is a method of analyzing text that involves a systematic reduction of textual data into a thematic coding frame (Schreier, 2012b). The categories of the coding frame that emerge from coding the raw data are the core of the analysis, as those categories represent major themes in the text. This study's first author inductively analyzed the answers to the three questions individually (most enjoyed, most disliked, general comments) to discern emerging themes. Emerging themes were then categorized to build an overall coding frame for each item (see Table 4). Examples of themes included *working with youth, coworkers/personnel, training, supervisors/administration, mundane tasks, disillusionment/politics, and a sense of helping*. We discussed and refined the theme categories, and then each author separately coded each respondent's statement. Additionally, for the general-comment item, we recorded the emotional valence of the statement (positive or negative). We then discussed and resolved inconsistencies.

## Results

To examine our hypothesis that voluntary turnover among juvenile correctional staff is higher than non-correctional staff due to the unique concerns faced in their positions, we compared the mean tenure for these two job classifications. Correctional staff ( $M = 2.8$  years,  $SD = 3.62$ ) stayed in their positions significantly fewer years than non-correctional staff ( $M = 12.9$  years,  $SD = 13.23$ ),  $t(164) = 7.79$ ,  $p < .001$ ,  $CI [7.54, 12.66]$ ,  $d = 1.22$ , a large effect size according to Cohen (1992).

### Decision to Leave

We examined whether correctional and non-correctional staff differed in the number/variety of reasons cited for leaving their positions. We analyzed individual, organizational, and total number of factors separately. Two respondents did not answer this question, so analyses here

are based on  $N = 171$ . The sample as a whole ( $N = 171$ ) reported approximately 1 individual factor ( $M = .98$ ,  $SD = .79$ ,  $mdn = 1$ ; range 0–4) and 1.5 organizational factors ( $M = 1.53$ ,  $SD = 1.48$ ,  $mdn = 1$ ; range = 0–5) in their indicated reasons for leaving. Overall, approximately three total factors impacted their decision to leave ( $M = 2.51$ ,  $SD = 1.47$ ,  $mdn = 2$ ; range = 1–7). We then examined individual, organizational, and total number of factors cited specifically by correctional staff in their decision to leave. Correctional staff reported approximately one individual factor ( $M = 1.14$ ,  $SD = 1.07$ ,  $mdn = 1$ ; range 0–4) and two organizational factors ( $M = 1.66$ ,  $SD = 1.71$ ,  $mdn = 1$ ; range 0–5), with an average of nearly three total factors ( $M = 2.80$ ,  $SD = 1.64$ ,  $mdn = 3$ ; range 1–7). Finally, we examined individual, organizational, and total number of factors cited by non-correctional staff in their decision. Non-correctional staff cited approximately one individual factor ( $M = .93$ ,  $SD = .67$ ,  $mdn = 1$ ; range 0–3), 1.5 organizational factors ( $M = 1.48$ ,  $SD = 1.39$ ,  $mdn = 1$ ; range 0–5), and approximately 2.5 total factors ( $M = 2.41$ ,  $SD = 1.40$ ,  $mdn = 2$ ; range 1–8). Overall, correctional and non-correctional staff did not differ in the number of individual, organization, or total factors cited as reasons to leave the agency.

To more closely examine specific motivations to leave, we next conducted chi-squared analyses to compare correctional and non-correctional staff on each one of the six individual factors and eight organizational factors pertaining to their decision to leave (Table 1). Of the individual factors, correctional and non-correctional staff significantly differed with respect to *retirement* and *return to school*. Specifically, non-correctional staff were significantly more likely to cite *retirement* as a factor in their decision to leave,  $\chi^2(1) = 10.21$ ,  $p = .001$ ,  $\phi = .24$  (see Table 1). Additionally, correctional staff were more likely than non-correctional staff to cite *returning to school* as a factor in their decision to leave,  $\chi^2(1) = 22.96$ , Fisher's exact  $p < .001$ ,  $\phi = .37$ . For the eight organizational factors, correctional and non-correctional staff significantly differed only

with respect to *safety*. Specifically, correctional staff were significantly more likely to cite safety concerns as a factor in their decision to leave compared to non-correctional staff,  $\chi^2(1) = 17.64$ , Fisher's exact  $p < .001$ ,  $\phi = .32$ .

### Attraction to New Position

A total of 101 respondents (59.1% of the total sample) indicated that they were leaving the agency to accept a specific position elsewhere. When asked which of the list of factors attracted them to their new employer, the factors most frequently cited were *salary* and *career advancement* (64.4% each; see Table 2), and the least frequently cited factor was *benefits* (12.9%). When examining correctional staff specifically, *career advancement* (71.4%) was the most frequently cited factor, and *benefits* (14.3%) was the least frequently cited factor. For non-correctional staff, *salary* (68.5%) was the most cited factor, and *benefits* (12.3%) was again the least frequently occurring factor. Group comparisons indicated no significant differences between correctional and non-correctional staff in terms of attraction to the new job opportunity (all  $p$ 's  $> .05$ ).

### Job Satisfaction

Table 3 displays descriptive statistics for correctional and non-correctional staff ratings of 13 different elements of job satisfaction provided on the exit interview form. Non-correctional staff reported the highest level of satisfaction with their *relationships with team members* ( $M = 4.34$ ,  $SD = .93$ ) and lowest level of satisfaction with *salary* ( $M = 2.61$ ,  $SD = 1.05$ ) and *opportunities for career advancement* ( $M = 2.64$ ,  $SD = 1.14$ ). Correctional staff reported the highest level of satisfaction with *relationships with team members* ( $M = 3.73$ ,  $SD = 1.25$ ) and their *supervisor* ( $M = 3.70$ ,  $SD = 1.29$ ) and lowest level of satisfaction with *management practices matching JJA values* ( $M = 2.52$ ,  $SD = 1.30$ ).

We first compared mean ratings for correctional and non-correctional staff for the 13 job

satisfaction elements separately. Correctional officers reported significantly lower job satisfaction ratings for five items: *access to continuing education and training*,  $t(72) = 2.64$ ,  $p = .01$ ,  $d = .48$ ; *work hours*,  $t(64) = 3.54$ ,  $p = .001$ ,  $d = .70$ ; *work space*,  $t(81) = 3.42$ ,  $p = .001$ ,  $d = .58$ ; *relationships with team members*,  $t(60) = 3.00$ ,  $p = .004$ ,  $d = .62$ ; and *management practices matching JJA values*,  $t(74) = 2.84$ ,  $p = .006$ ,  $d = .51$ .

To examine potential differences in overall job satisfaction between correctional and non-correctional staff, we next computed a mean job satisfaction score across the 13 items and conducted an analysis of covariance using job tenure as a covariate. Correctional staff reported significantly lower job satisfaction ratings overall ( $M = 3.11$ ,  $SD = .77$ ) compared with non-correctional staff ( $M = 3.54$ ,  $SD = .69$ ),  $F(2, 167) = 6.27$ ,  $p = .002$ , partial  $\eta^2 = .07$ .

### Qualitative Content Analysis

Employees were given the option to describe what they most enjoyed and what they most disliked about their position as well as to provide general comments and feedback. These qualitative items allowed us to explore respondents' feelings and sentiments about their work experiences, providing context for the quantitative findings. When examining employees' statements regarding what they most enjoyed about their positions ( $n = 159$ ), seven categories emerged: (a) working with youth/youth; (b) coworkers/personnel; (c) work environment/core job components; (d) sense of helping; (e) training provided; (f) mission and meaning derived from work; and (g) everything (see Table 4). Both correctional officers and non-correctional staff broadly stated that working with youth was the most enjoyable aspect of their position. Note that although many non-correctional staff are in administrative positions, several different non-correctional staff positions have extended contact with youth residents, such as teachers, counselors, and medical staff. For example, one employee stated he or she enjoyed "seeing the children and their families

make positive changes," and another employee said he or she enjoyed "helping youth be successful and productive." Respondents also felt positive about experiences with colleagues. These findings support the general patterns observed in the job satisfaction analysis above, where correctional officers reported the highest levels of satisfaction with their relationships with team members as well as supervisors. For example, one correctional officer indicated "working with the assistant superintendent and colleagues" and numerous others cited "working with juveniles (residents, kids)" as most enjoyable. Non-correctional staff also enjoyed positive relationships with colleagues and supervisors; numerous employees mentioned "working with colleagues (peers, co-workers, employees)." One employee cited his or her "supportive environment from coworkers/supervision."

When examining employees' dislikes about their work experience at the agency ( $n = 150$ ), 12 distinct categories emerged: (a) administration/supervisors; (b) work environment/culture; (c) core job elements; (d) salary/financial; (e) mundane tasks; (f) lack of advancement; (g) safety; (h) co-workers; (i) lack of training/support; (j) youth and their families; (k) disillusionment/politics; and (l) nothing. For correctional employees, a core component of their position was the most disliked portion of their employment experience. For example, many correctional officers stated the "on-call" work hours or "demanding schedule" were the least enjoyable part of their position, and another employee stated "the position, by nature, limited the use of skills I possess." Non-correctional staff more frequently stated that the work environment/culture of the organization was the most disliked portion of their employment experience. Common sentiments included "frequently changing expectations and inconsistencies," "miscommunication between departments," and even "instability" and "chaos" in their departments. Other respondents echoed a similar sentiment of inconsistency or instability brought on by frequent administrative or directorial changes and general staff turnover.

Finally, employees were given the opportunity to elaborate on any additional comments or concerns they had regarding their time at the JJA. This open-ended question at the end of the survey allowed employees to elaborate on their previous answers or provide additional insights not captured in the survey. In an initial review of the comments, we found many of the same categories that had emerged in prior survey items. For this reason, we condensed the categories from previous variables where appropriate to arrive at 14 categories: (a) youth/families; (b) coworkers/personnel; (c) work environment/culture; (d) core job components; (e) mundane tasks; (f) training; (g) promotion/advancement; (h) mission/meaning/personal satisfaction; (i) morale; (j) safety; (k) salary or money related (benefits); (l) general comments; (m) administration/supervisors; and (n) workload/stress. Many of the comments were consistent with those from the "most enjoyed" and "most disliked" questions, which is evident in the overlap among coded categories. We highlighted statements that were conceptually distinct from the coded categories in the two previous open-ended questions. For example, several employees cited job stress stemming from large workloads or long shifts, or generally high demands. Several also cited low morale related to inadequate or infrequent employee recognition or inadequate training/support from their supervisors. However, positively valenced statements occurred most frequently in the mission/meaning/personal satisfaction category as well as the general comments category. For example, one employee stated that he or she was "grateful for the opportunity to work at [the agency] and [leaving] was a difficult decision because I believe in what the agency is doing." Other employees observed that "work was rewarding and team was like family" or that the employee felt "privileged and blessed, [I was] well respected and treated fairly [and I am] proud of our accomplishments and overall agency leadership."

## Discussion

Correctional employees had significantly less tenure and reported lower levels of job satisfaction than non-correctional staff. Additionally, correctional staff reported that concerns with safety and a decision to return to school impacted their decision to leave the organization. Non-correctional staff remained in their positions substantially longer than correctional staff and in fact, they most often cited retirement as a contributing factor to their decision to leave. The findings that correctional staff stay in their positions for a significantly shorter time than non-correctional staff support the notion that correctional officers may experience unique problems or stressors that motivate them to leave the organization sooner than non-correctional staff (Farmer, 1988; Gould, Watson, Price, & Valliant, 2013; Schaufeli & Peeters, 2000). Due to the organizational costs associated with turnover, correctional agencies may benefit from working proactively to understand factors that drive correctional and non-correctional staff to leave by periodically surveying all employees and mitigating organizational stressors where possible. In particular, agencies may be able to benefit the most from early intervention efforts. The present study found that correctional officers had an average tenure of approximately 2 years, consistent with prior research reporting that turnover is highest among new corrections staff (Jacobs & Grear, 1977; Minor et al., 2011; Griffin, Hogan, & Lambert, 2014). In particular, organizational variables have been shown to exert the most impact on entry-level officers' expressed intent to leave, suggesting that agencies may be able to influence turnover decisions of newly hired correctional staff and retain valuable employees (Griffin et al., 2014).

Correctional staff were more likely to cite safety and returning to school as a reason to leave, whereas non-correctional staff were more motivated by retirement. This is consistent with previous work in a juvenile detention facility that indicated juvenile officers cited safety concerns

in their intent to leave (Tipton, 2002). The present study found that concerns about safety are influencing employees' actual decisions to resign, not just impacting turnover intent, which underscores the seriousness of safety concerns in juvenile detention centers. In fact, safety was the only organizational factor that emerged as significantly more influential for correctional staff in this study. Agencies can conceivably influence safety concerns from an organizational perspective if they understand the origin of the safety concerns. The National Institute of Justice (NIJ) suggested correctional officer turnover and absenteeism left a large number of inexperienced officers on duty who are least prepared to handle inmate conflict and are a cause of safety concerns in detention facilities (Finn, 2000). Thus, NIJ recommended implementing correctional officer stress programs to reduce turnover and absenteeism and improve institutional safety. Stress programs have shown limited but promising evaluation results (McCarty, Atkinson, & Lipsenthal, 2009). Additional research on safety concerns and appropriate treatments could fill this gap in knowledge.

It should be noted that a relevant variable, respondents' age, was not included in the analysis because this information was not available. However, Tipton (2002) found that younger officers were more likely to report an intention to leave. This may impact their decisions to leave the correctional field, at least temporarily, and pursue additional education. It is also possible that JCOs are less educated to begin with, and as such, are more motivated to return to school. In fact, Minor et al. (2011) found that 66.8% of the surveyed correctional staff did not hold a college degree. One way agencies could reduce turnover is to offer educational opportunities within the organization or perhaps offer financial support for courses so that correctional officers are motivated to return to the organization following their degree attainment. However, increasing educational opportunities alone, without changing the organizational culture,

might not be practical for several reasons. On one hand, obtaining funding for employee education may be difficult, given the budgetary constraints facing correctional organizations. On the other hand, education alone has not mitigated job dissatisfaction in adult correctional staff (Robinson, Porporino, & Simourd, 1997). Further, it is often the most qualified employees who leave to take jobs elsewhere (Wright, 1993); thus increasing educational opportunities may not prevent turnover within the organization on its own. It appears more prudent for correctional organizations to first focus on pressing organizational concerns, such as safety, before exploring continuing education opportunities to reduce turnover.

Additionally, some organizations have added structured Field Training Officer (FTO) programs that provide mentors to assist new, younger recruits in assimilating into their work environment (Nink, 2010). FTO programs promote knowledge acquisition and increase self-confidence, and employees who perceive a higher level of care from their immediate supervisors are more satisfied with their jobs (Nink, 2010). These programs can be incorporated as part of a more thorough orientation process for all new recruits as a cost-effective retention strategy.

Non-correctional staff remained in their positions substantially longer than correctional staff and most often cited retirement as a contributing factor in their decision to leave. We are aware of no other studies that have investigated the impact of state benefits, such as retirement benefits, on correctional and non-correctional employees' decisions to leave their positions. It is interesting that the retirement benefits are only cited by non-correctional staff and not correctional employees. One explanation for this may be that the JJA benefits act as an incentive to stay employed for an extended amount of time. In fact, the agency in this study was one of many state agencies that increased benefits for each year the employee remained employed. Thus, the monetary benefits may override any job stresses that non-correctional staff perceive. Additionally, the inability to

adjust for respondents' age to explain this finding may be relevant. It is possible that non-correctional staff in this sample were older on average and thus closer to retirement age, regardless of benefits availability. Future research that is able to include age demographics would be useful in assessing the explanations for the findings.

There were no significant differences between correctional staff and non-correctional staff attraction to new opportunities, but this could be a function of limited answer choice availability in the survey. Future studies in which researchers are not limited to existing data sources and are able to create their own exit surveys or interviews could address this question more fully. The extent to which attraction to new job opportunities is correlated with employees' decisions to leave is unclear. It is possible that the constructs are highly correlated (i.e., resigning employees are attracted to other jobs that offer amenities their current position lacks). However, it is also possible that employees' turnover decisions are more complex and driven by multiple competing factors. Assessing this variable separately from employee decisions to leave in future studies could be particularly useful for disentangling turnover related to career changes compared with job market withdrawal (e.g., retirement) or employees simply seeking a different position within the same field.

This study extends findings in adult and juvenile facilities and suggests that job satisfaction is a significant predictor of actual turnover. Unlike prior studies, the present study found correctional staff differed from non-correctional staff in a global measure of overall satisfaction, such that correctional staff were less satisfied in their positions than non-correctional staff (Armstrong & Griffin, 2004). However, the low level of satisfaction predicted actual turnover in a similar manner as found in previous literature that evaluated the impact of job satisfaction on turnover intent (Matz et al., 2013; Mitchell et al., 2000; Udechukwu et al., 2007; Wright, 1993). It is important to note that global satisfaction measurements, which sum from individual satisfaction

items, may not appropriately capture total satisfaction (Lambert, Barton, & Hogan, 1999). Despite that limitation, these findings arguably still suggest that employee satisfaction is of critical importance to correctional organizations due to the association of satisfaction levels with turnover. Further, the literature suggests that satisfaction with coworkers and supervisors is inversely associated with voluntary turnover decisions among JCOs, including one study that examined actual turnover data (Minor et al., 2009). However, correctional and non-correctional staff in the present study reported high levels of satisfaction with coworkers at the time of their exit from the JJA, which suggests that their satisfaction did not mitigate their decisions to leave. Given that only one prior study evaluated the relationship between coworker satisfaction and JCO turnover, rather than turnover intent, further research is needed to assess the relationship between these variables. Additionally, non-correctional staff indicated the highest level of dissatisfaction with salary and opportunity for advancement, which supports findings in the organizational literature and suggests that findings from the correctional literature generalize to non-correctional staff inasmuch as inadequate pay and few opportunities for promotion are associated with increased dissatisfaction (Minor et al., 2009, Udechukwu et al., 2007). By contrast, correctional staff were most dissatisfied with the failure of management practices to match JJA values. This supports the notion that correctional staff enter the field despite low pay due to the mission of the JJA organization (Tipton, 2002; Udechukwu et al., 2007). If the JJA fails to uphold the values inherent to that mission, correctional staff appear unable to continue coping with the additional stressors involved in the position. These findings highlight the importance of distinguishing between correctional and non-correctional staff, particularly for correctional agencies that will want to address satisfaction levels in a different manner for each type of staff.

Finally, the present study included a qualitative component to explore the context and meaning behind employee decisions to leave. Qualitative findings indicated that staff felt strongly about the environment in which they worked, whether positively or negatively. The qualitative component allowed for insight, beyond the ability of quantitative measures, into the emotional components involved in correctional and non-correctional employees' decisions to leave. Unlike other organizations, a JJA has a unique mission to detain but also rehabilitate youth; perhaps the emotionality of employee responses is driven in part by this unique work environment. To explore this further, future research might employ quantitative measures to assess the variability of the constructs and reliability of the categories that emerged in the qualitative components of this study. This is particularly important given the subjective nature of qualitative analysis.

### Limitations

Several limitations of the current work should be noted. Secondary data can have missing information, such as the demographic variables this study did not capture, or poorly operationalized variables (Riedel, 2000). Using secondary data is beneficial as it can allow researchers access to a new population; in fact, this data allowed a unique insight into actual voluntary turnover rather than relying on the proxy of turnover intent. Additionally, the correlational nature necessarily means that no one factor can be said to directly cause turnover. For this reason, it is important to highlight that this research is not intended to suggest discrimination, screening, or pre-selection of any possible candidates on the basis of non-merit factors.

In particular, this study was not able to evaluate the association between individual factors, such as age or gender, and voluntary turnover; the research into safety concerns and officers' desire to pursue increased education speaks to the importance of including such factors (Gordon

et al., 2003; Gordon et al., 2013; Tipton, 2002). Nevertheless, the importance of personal characteristics has not uniformly been found in the literature. For example, Minor et al. (2011) found no significant impacts of personal characteristics on turnover of juvenile correctional staff. Although additional research into this area is necessary and could provide valuable insights, the exit surveys the JJA provided to us did not include these details. We suggest that agencies include this information in future surveys to enable researchers to evaluate these variables in juvenile correctional facilities.

Lastly, the sample was limited in a few ways. First, the JJA did not record total number of exits from 2012 to 2015. It is likely that additional employees separated from the agency without completing an exit survey. As a result, selection bias is a concern, because the response rate cannot be calculated and because employees who chose to complete an exit survey may differ from non-responders in meaningful ways. Second, the sample of JCOs was comparatively small. Although small sample sizes do negatively impact power, there is precedence within the juvenile correctional literature of using small sample sizes, given the difficulty of access to this population and dearth of information available in the field. For example, Farmer (1988) employed a total sample of 41 JCOs in two Midwest detention centers. Larger sample sizes, especially in combination with more refined and theoretically and empirically derived survey instruments, would enable researchers to more fully explore the relationships among job tenure, satisfaction, and voluntary turnover in state correctional agency employees.

### Conclusion and Future Directions

From a practice perspective, it is important to consistently define and measure correctional staff and include evidence-based items on agency exit

interviews and/or satisfaction surveys. Agencies and researchers could collaborate on these efforts to enable researchers to better assess job satisfaction and voluntary turnover decision making among correctional and non-correctional staff and to ensure the findings address issues of utmost importance to the agencies themselves. In the interim, there are small measures agencies can implement to periodically assess job satisfaction and other factors related to employee retention. For example, agencies can implement intermittent job satisfaction surveys, developed in partnership with researchers, which would allow researchers to examine the impact of job (dis)satisfaction on actual turnover with a comparison group. Such academic-practitioner partnerships have the potential to enable researchers to learn more about human capital in the corrections field while also providing agencies with valuable information on how to attract and retain qualified, motivated staff.

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# Childhood Adversity Among Court-Involved Youth: Heterogeneous Needs for Prevention and Treatment

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## Abstract

Although experiences of trauma and adversity are highly prevalent among juvenile justice-involved youth, few studies examine the heterogeneity of these histories across individuals. This study seeks to inform practitioners of the distinct patterns of adversity among this vulnerable population, using an expanded measure of adverse childhood experiences (ACEs). Latent Class Analysis was employed to test for meaningful subgroups of youth based on histories of childhood adversity. The sample ( $N = 5,378$ ) consisted of youth on probation in a western United States county. The best-fitting model contained six classes, described as: Low All (40.3%), Parental Substance Use and Incarceration (12.0%), Poverty and

Parental Health Problems (13.2%), High Family Conflict and SES (socioeconomic status) (15.3%), High Maltreatment (11.0%), and High All (8.1%). Additional testing revealed significant differences across classes in terms of age, gender, race/ethnicity, and living situations. Results strongly support the need to incorporate a trauma-informed framework into both juvenile justice and community service settings as well as to tailor interventions to meet heterogeneous needs of court-involved youth. Striking variation in the forms and levels of childhood adversity argue for the value of screening for ACEs in conjunction with poverty and working to interrupt problematic trajectories in adolescence and the transition to adulthood.

## Introduction

There is a robust literature examining the overlap of juvenile delinquency with a range of childhood adversities, such as childhood maltreatment; socioeconomic disadvantage; and family dysfunction, including involvement in the child welfare system. These examinations have supported the notion that the majority of youth involved with the juvenile justice systems bring histories of childhood trauma and adversity (Dierkhising, Ko, & Goldman, 2013; Greenwald, 2014). This has led to a growing recognition of the need to transform juvenile justice systems to appropriately address these histories. However, there is as yet little guidance about the specific and heterogeneous needs of court-involved youth with respect to these backgrounds. The present study seeks to fill that gap by testing for distinct patterns of adverse childhood experiences among subgroups of youth involved with the juvenile justice system. The findings of this study can provide practitioners with novel insights regarding distinct adversity profiles with which court-involved youth enter the system, illuminating differing patterns of treatment needs.

### Childhood Adversity and Court-Involved Youth

One increasingly common way to assess childhood adversity is with the adverse childhood experiences (ACEs) framework. ACEs describe a set of commonly experienced adversities that can be easily assessed in clinical, community, or court settings (Felitti et al., 1998). This work builds on a cumulative adversity model wherein exposure to greater numbers of adversities tends to commensurately increase health risks and maladaptive development, especially because negative experiences tend to be interrelated (Anda, Butchart, Felitti, & Brown, 2010; Duke, Pettingell, McMorris, & Borowsky, 2010). ACEs have been found to be interrelated in both broad-based (Dong et al., 2004) and predominantly young minority community samples (Mersky, Topitzes, & Reynolds, 2013) as well as among court-involved youth

(Baglivio & Epps, 2015). Baglivio and Epps (2015) demonstrated that having a single ACE increased the likelihood of having another up to 1,286 times, which bolsters the idea that ACE exposures generally do not occur in isolation. Thus, a cumulative assessment better captures the stress load that children's life contexts impose; such contexts, through which neurobiological as well as psychosocial pathways can lead to problematic development, can cascade across the life course of children (Logan-Greene, Green, Nurius, & Longhi, 2014; Putnam, 2006).

ACEs assessment has commonly included maltreatment (sexual, physical, and emotional victimization and exposure to family violence and neglect) and family dysfunction (household substance abuse, household illness, incarcerated family member, and parental divorce). When measured as a count of how many adversities a person has experienced, the ACE score has been shown to be a powerful predictor of health, behaviors, and even morbidity across a wide variety of populations and contexts (Anda et al., 2006; Larkin, Shields, & Anda, 2012; Nurius, Green, Logan-Greene, & Borja, 2015). Recent extensions of ACEs have incorporated other indicators of adversity, such as out-of-home placement in foster care (Cronholm et al., 2015) and family member illness (Wade, Shea, Rubin, & Wood, 2014), among others.

Lacking from the ACEs framework, however, has been an assessment of poverty-related forms of social disadvantage. The impact of socioeconomic disadvantage on health and a range of behavioral outcomes is well established (DeNavas-Walt, Proctor, & Smith, 2010; Skowrya & Coccozza, 2007) and may also be entangled with other forms of adversity, such as parental incarceration or illness. Recent work has argued for expanded assessment to include adversities such as poverty, out-of-home placement, and community threats (Cronholm et al., 2015; Wade et al., 2014) that might further disadvantage young people through their life course. Community-based surveys, such as the National Survey of

Children's Health, include poverty among the conventional ACEs list (Sacks, Murphey, & Moore, 2014). Recently, Baglivio, Wolff, Epps, and Nelson (2015) found that neighborhood context predicted ACE scores among delinquent youth, such that youth in impoverished census tracts had significantly more ACEs than those in affluent neighborhoods. Thus, this paper added family socioeconomic disadvantage within an ACEs framework to assess its value in distinguishing household contexts that were posing greater challenges for disadvantaged youth.

ACE exposures have shown to be particularly high among juvenile offenders (Baglivio et al., 2014; Dierkhising et al., 2013; Grevstad, 2010), who also report higher likelihood of experiencing multiple forms of adversity compared to the general population (Abram et al., 2004). A recent study reported that for every additional count of ACEs, the odds of youth becoming serious, violent, or chronic offenders increased by 35%, controlling for other factors (Fox, Perez, Cass, Baglivio, & Epps, 2015). Furthermore, greater numbers of ACEs increased the risk of rearrests, with higher cumulative exposure leading to increased recidivism rates (Wolff, Baglivio, & Piquero, 2015). The findings of these studies have suggested a critical need for trauma-informed treatment and services for juvenile justice-involved youth specific to their complex trauma histories.

### Testing for Differences in Youth ACE Profiles

This body of work indicates that risks stemming from adversity appear greatest for youth who are nested within contexts that include broader spectrum forms of adversity such as poverty, maltreatment, and parental dysfunction. Variable-oriented analytic approaches (such as logistic or linear regression) used in prior work to examine prevalence or linear trends among these domains within samples have provided replicated demonstration of step-dose forms of association of cumulative adversity and subsequent health and functioning outcomes. These tools have been helpful in characterizing populations overall and

have provided a strong foundation as well as an impetus for subsequent stage investigations that test for variation within populations, providing particularly important distinctions within high-risk populations.

Person-oriented analytic methods, such as latent class analysis (LCA), are suitable for these latter kinds of questions. Berzenski and Yates (2011), for example, used LCA to ascertain distinct patterns and combinations of four maltreatment experiences. Students exposed to multiple maltreatment experiences came from families that were physically violent, emotionally hostile, sexually abusive, and included harsh parenting. Similarly, Mulder, Vermunt, Brand, Bullens, and Marle (2012) used LCA to identify subgroups of offenders (e.g., sex offending group, violent offending group, property offending group) and found that these groups had distinctly different risk profiles leading to differential prediction of recidivism rates. Mulder et al. (2012) concluded that these distinct groups and risk profiles indicated a need for individualized treatment aimed at different risk factors. Additionally, Lanza and Rhoades (2013) argued that LCA was an efficient approach that identified subgroups based on multiple contextual risks and matched individualized prevention and treatment needs.

Thus, examining the heterogeneity of the adverse experiences within populations uncovered potentially distinct developmental contexts within which youth were being reared and thus identified the differing individual and family treatment and support these youth and families needed. Person-oriented analytic findings did not stand in opposition to trends established through full sample (or variable-oriented) examination; instead, they addressed complementary questions—such as predicting a phenomenon at a population level to more fully understand variation in developmental mechanisms or pathways—together providing a “binocular view” of the phenomenon in question (Bergman & Trost, 2006, p. 629).

Advances in identifying mechanisms through which early life experiences and environmental influences have left lasting signatures on youth development emphasized attention to these childhood ecologies—the social and physical environments in which youth have been raised (Shonkoff et al., 2012). Given that higher ACE scores indicated a higher risk for impaired developmental trajectories, including early onset and chronic delinquency (Baglivio, Wolff, Piquero, & Epps, 2015), it is imperative to ask more penetrating questions regarding the differential combinations that these adversities may manifest among system-involved youth. Such research could provide guidance about different kinds of early programs and services likely to provide stronger preventive and remedial effects.

## The Present Study

In this paper, we tested for empirically supported clustering to determine subsets of court-involved youth who were more like one another than they were to the sample as a whole, relative to histories of adverse experiences. We hypothesized that significant clustering would be found, reflecting differing forms of adversity exposure rather than differences in level (e.g., low, medium, high exposure to adversity) alone, suggesting a strong need for specific treatment approaches. We theorized that these clusters would demonstrate that some traumas tended to co-occur, providing further detail to variable-oriented framing of cumulative trauma. Additionally, we expected that these clusters would reflect strengths that youth may have, such as a lack of social disadvantage, that service providers might be able to draw upon for interventions. To determine these clusters, we employed LCA, a powerful statistical method used to determine groups of similar individuals within a heterogeneous sample (McCutcheon, 1987). This structure-seeking approach did not have a priori expectations of group compositions yet provided an accurate and complex empirical tool to discern group structure.

## Methods

### Data

The data came from the Washington State Juvenile Court Assessment (WSJCA) given to youth adjudicated to probation in a mixed urban and rural, racially/ethnically diverse, Western region from 2003 to 2013 (Barnoski, 2004b). The assessment tool used was the Positive Achievement Change Tool (PACT), which has been found to be valid and empirically sound across gender and racial/ethnic groups (Baglivio & Jackowski, 2013; Barnoski, 2004a; Washington State Institute for Public Policy, 2004). The WSJCA was developed as a two-stage process. In the first stage, pre-screen assessment is completed for all youth placed on probation to identify those at low-, moderate-, or high-risk for recidivism. In the second stage, youth identified as moderate- to high-risk for recidivism are given the full assessment that provides a longer and more comprehensive risk and protective factor profile. Juvenile probation counselors (JPCs) in Washington State are trained to conduct one-on-one interviews with youth entering probation, and they complete the assessment. To further enhance the assessment's validity, JPCs confirm self-reported responses by contacting, where available, other agencies, records (e.g., child-protective service records), or collateral resources (e.g., parents, teachers, mental health counselors). Assessments completed by well-trained probation officers have been found to be reliable (Barnoski, 2004a).

The sample population included youth who were identified as moderate- to high-risk during pre-screen assessment based on social and criminal history and had received a minimum of 3 months' probation between January 2003 and December 2013. The first case from each young person was included in this analysis, yielding a final sample of 5,378 youth (female = 23.6%). The sample's average age was 15.5 years, ranging from 10 to 18 years. The sample's racial/ethnic composition was 56.0% Caucasian; 24.2% African American; 3.0% American Indian/Alaskan Native; 2.9% Asian

American; 1.5% Hawaiian or Pacific Islanders; 5.7% Latino; and 6.7% missing, mixed, or other. In this assessment “Latino” was not listed as a different ethnicity category separate from race.

### Measures

**Demographics.** Youth demographic information regarding age, gender, and race/ethnicity was collected separately as part of the usual system processing. Race was collapsed into four groups: Caucasian; African American; Latino; and other, which included Asian, Hawaiian, Pacific Islander, Native American, and mixed race. As part of the WSJCA assessment, participants answered questions about their living situations, allowing them to endorse any item(s) that reflected their current household composition. Four mutually exclusive variables assessed whether youth lived with a biological parent (both biological parents, biological mother only, biological father only, and neither biological parent); another variable assessed whether they lived in foster care.

**Childhood adversity.** All items were either dichotomous by nature or transformed to be dichotomous where noted; Table 2 illustrates the frequencies for the sample. *Family dysfunction* included incarceration of a mother (26.6%), father (35.9%), or sibling (younger and older sibling combined, 17.6%); “parental problem history” with alcohol (21.0%), drugs (18.4%), mental health (9.4%), or physical health (12.0%); or out-of-home placement (16.4%). *Child maltreatment* was assessed by history of sexual (13.9%) or physical (24.0%) abuse (both sexual and physical abuse collapsed incidences occurring inside the family and outside the family); neglect (16.9%); and family conflict (64.9%), which was based on the respondents answering yes to one of the following (mutually exclusive) experiences: verbal intimidation, “heated arguments,” or exposure to domestic violence. *Socioeconomic disadvantage* included low family income (below \$15,000 or below the poverty line, 20.9%), lack of health insurance (5.8%), and a history of parental unemployment problems (17.2%).

### Analysis

We used LCA (Clogg, 1995) to estimate a model that examined diverse patterns of adverse experiences among the sample. Analysis was conducted using Mplus 6.1 (Muthén & Muthén, 2010). All 15 variables assessing childhood adversity were included as indicators of a latent categorical variable. We estimated the models by incrementally increasing the number of latent classes and comparing indices of fit. Because there was no single fit statistic commonly used to determine the best-fitting number of classes, we examined multiple fit statistics: the log likelihood value, Bayesian information criterion (BIC), Lo-Mendell-Rubin test (LMR), and Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR-LRT). Although the log likelihood values always increased with increasing number of latent classes, the BIC statistic took into consideration the complexity of the model. A lower BIC statistic indicated the better model fit. Both the LMR and the VLMR-LRT compared the fit of a model to the fit of a model with one fewer class (e.g., 4-class model to 3-class model). A significant *p* value indicated that a model with one more class was a better fitting model. To ensure that fitted models were not local solutions, we used random starting values (10 initial-stage iterations, 1,000 initial-stage random values, 100 final-stage optimization). The best-fitting model was selected based on these model fit statistics as well as on substantive interpretation. After selecting the best-fitting model, we re-estimated the model also with 50% random subsample. Both the best-fitting model and the interpretation of classes remained consistent.

Mplus provided a mechanism to test for class differences on additional variables via the Auxiliary command (Muthén, 2007). This mechanism uses the Wald test for mean differences based on class membership in the latent classes, as opposed to assigning cases to classes and testing via ANOVA or similar tests, which introduce substantial error (Nagin, 1999). We employed this technique to test for differences on demographic variables, including living situation.

Table 1. Model Fit Statistics for the 1 Through 7 Class Solutions

Number of Classes	Log Likelihood	BIC	LMR	VLMR-LRT
1	-30153.24	151541.33	n/a	n/a
2	-28581.38	143836.30	$p < 0.0001$	$p < 0.0001$
3	-27990.35	141096.27	$p < 0.0001$	$p < 0.0001$
4	-27743.45	140114.39	$p < 0.0001$	$p < 0.0001$
5	-27546.66	139309.29	$p = 0.0059$	$p = 0.0061$
6	<b>-27434.75</b>	<b>138932.62</b>	<b><math>p = 0.0001</math></b>	<b><math>p = 0.0001</math></b>
7	-27380.52	138818.26	$p = 0.1212$	$p = 0.1227$

BIC = Bayesian Information Criterion (BIC); LMR = Lo-Mendell-Rubin test; VLMR-LRT = Vuong-Lo-Mendell-Rubin likelihood ratio test.

## Results

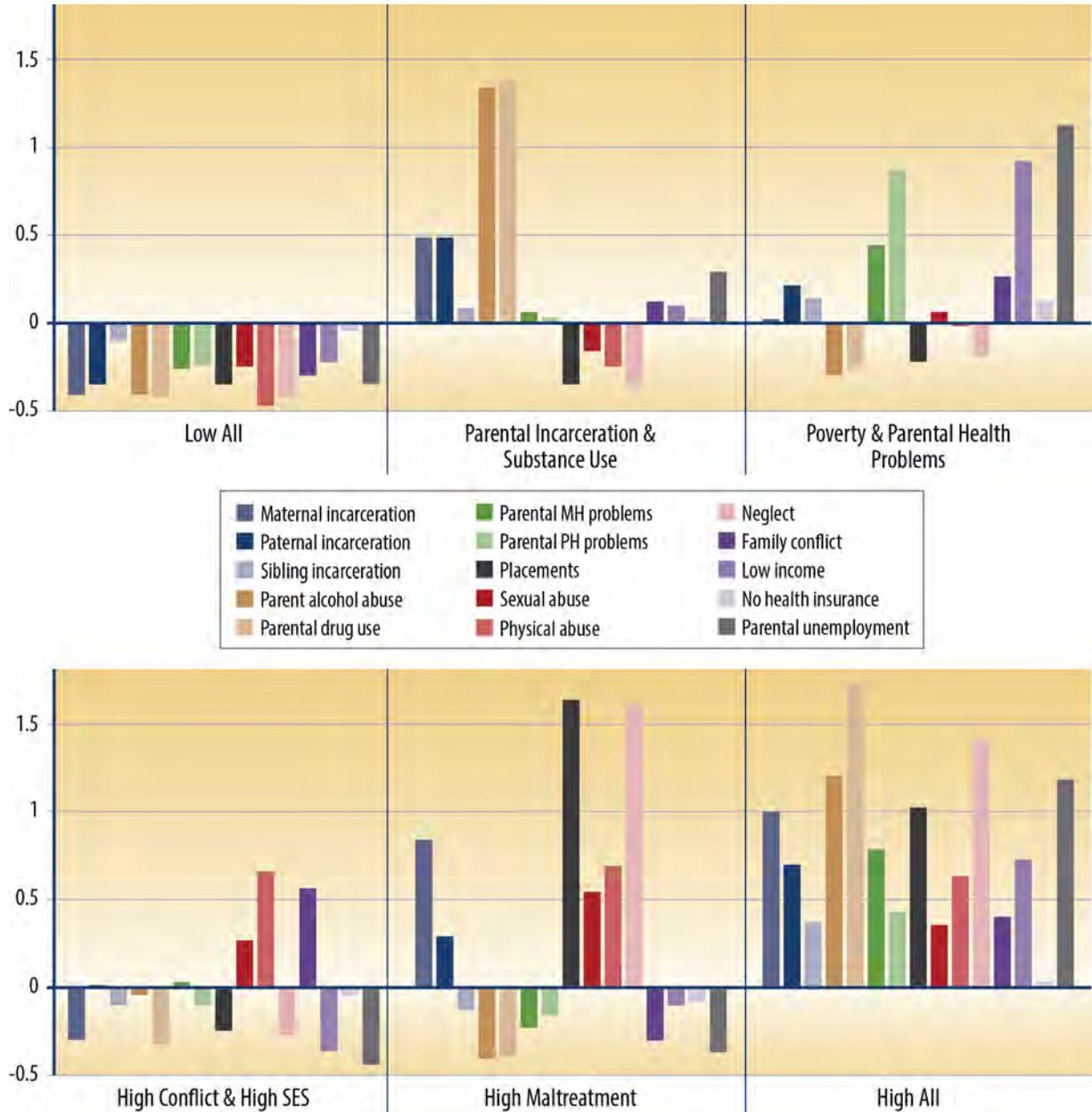
Table 1 provides the fit statistics for the best-fitting models with one through seven classes. The LMR and VLMR-LRT both suggested that the six-class solution was optimal; however, the BIC continued to improve with the addition of a seventh class (the eight-class solution was unreliable due to local maxima). Because of this ambiguity, we examined both the six- and seven-class solutions for interpretability and coherence. The seven-class solution added one small class (5.7%), which did

Table 2. Class and Sample Proportions Endorsing Each Indicator

	Low All	Parental Incarceration & Substance Use	Poverty & Parental Health Problems	High Conflict & High SES	High Maltreatment	High All	Full Sample
Latent Class Sizes	40.31%	12.04%	13.24%	15.29%	10.97%	8.14%	
Maternal incarceration <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.074	0.468	0.263	0.126	0.626	0.694	0.266
Paternal incarceration <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.175	0.573	0.444	0.348	0.480	0.677	0.359
Sibling incarceration <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.140	0.214	0.235	0.144	0.133	0.326	0.176
Parent alcohol abuse <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.040	0.761	0.084	0.193	0.043	0.698	0.210
Parental drug use <small>a,b,e,f,i,l,o</small>	0.016	0.716	0.082	0.057	0.028	0.842	0.184
Parental MH problems <small>a,b,c,e,f,g,h,i,j,k,l,m,n,o</small>	0.016	0.111	0.222	0.101	0.028	0.324	0.094
Parent PH problems <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.036	0.120	0.390	0.083	0.060	0.249	0.120
Out of home placements <small>b,c,d,e,j,k,l,m,n,o</small>	0.031	0.028	0.077	0.071	0.759	0.535	0.164
Sexual abuse <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.047	0.078	0.155	0.224	0.318	0.254	0.139
Physical abuse <small>f,g,h,i,j,k,l,m,n,o</small>	0.033	0.131	0.231	0.519	0.533	0.507	0.240
Neglect <small>i,k,l,m,n,o</small>	0.007	0.030	0.092	0.062	0.766	0.692	0.169
Family conflict <small>a,b,d,e,f,h,i,k,l,o</small>	0.497	0.698	0.768	0.908	0.498	0.833	0.649
Low family income <small>a,b,d,e,f,h,i,k,l,o</small>	0.105	0.232	0.560	0.050	0.154	0.480	0.209
No health insurance <small>a,b,c,d,e,f,g,h,i,j,k,l,m,n,o</small>	0.052	0.062	0.090	0.049	0.040	0.068	0.058
Parental unemployment <small>a,b,e,f,i,k,l,o</small>	0.031	0.267	0.576	0.000	0.026	0.594	0.172

Superscripts show significant differences between classes: <sup>a</sup> Low All and Parental Incarceration & Substance Use. <sup>b</sup> Low All and Poverty & Parental Health Problems. <sup>c</sup> Low All and High Conflict & High SES. <sup>d</sup> Low All and High Maltreatment. <sup>e</sup> Low All and High All. <sup>f</sup> Parental Incarceration & Substance Use and Poverty & Parental Health Problems. <sup>g</sup> Parental Incarceration & Substance Use and High Conflict & High SES. <sup>h</sup> Parental Incarceration & Substance Use and High Maltreatment. <sup>i</sup> Parental Incarceration & Substance Use and High All. <sup>j</sup> Poverty & Parental Health Problems and High Conflict & High SES. <sup>k</sup> Poverty & Parental Health Problems and High Maltreatment. <sup>l</sup> Poverty & Parental Health Problems and High All. <sup>m</sup> High Conflict & High SES and High Maltreatment. <sup>n</sup> High Conflict & High SES and High All. <sup>o</sup> High Maltreatment and High All.

Figure 1. Latent class profiles compared to sample averages for each indicator.



Note. The y-axis represents z-scores compared to sample proportions.

not improve the theoretical meaningfulness of the classes. Thus we retained the six-class solution. The average latent class probabilities for class membership, which are indicators of correct model assignment to the six classes, were good, ranging from .70 to .88. Entropy, which reflects these calculations, was acceptable at 0.69.

The proportions of each latent class that endorsed each indicator are shown in Table 2, and

Figure 1 offers a visual depiction of the results. In Figure 1, we transformed each group's proportions into z-scores compared to the sample proportions and standard deviations to make a figure that showed all indicators at similar magnitudes. Youth in the first class had relatively low levels of all ACEs and comprised the largest portion of the sample (40.3%). Thus we termed this class the Low All class. Youth in the second class, with 12.0% of the sample, reported high levels

of parental incarceration and substance use, elevated indicators of social disadvantage, but relatively low levels of maltreatment; this class we termed the Parental Incarceration and Substance Use class. Youth in the third class comprised 13.2% of the sample and was marked by parental health problems, and we termed this class the Poverty and Parental Health Problems class. Youth in the fourth class, in contrast, had relatively good indicators of familial economics but elevated levels of family conflict and physical abuse. With 15.3% of the sample, we termed this class the High Conflict and High SES (socioeconomic status) class. Youth in the fifth class reported very high levels of maltreatment, parental incarceration, and out-of-home placements; however, other ACEs were reported less frequently than the sample averages. This class contained 11.0% of the sample, and we termed it the High Maltreatment class. Youth in the sixth class, which was the smallest, at 8.1% of the sample, reported

high levels of all ACE indicators included in this analysis. We called this class the High All class.

### Demographic Differences

We also examined youth in these classes for differences on demographic variables (see Table 3). Age differed significantly across classes, although the differences were not large. The Low All class was the oldest, with an average of 15.6 years, and the High Maltreatment and High All classes were the youngest, at 15.3 and 15.1 years, respectively. The percentage of females increased from the first through sixth class, with the highest proportion (32.3%) in the High All class. Caucasian youth were somewhat concentrated in the Parental Incarceration and Substance Use (66.0%), High Conflict and SES (65.0%), and High All (67.8%) classes. African American youth were more likely to be in the Poverty and Parental Health Problems (31.9%) and High Maltreatment (29.4%) classes. Latino youth were found least frequently in the

Table 3. *Demographic Factors Across the Classes*

	Low All	Parental Incarceration & Substance Use	Poverty & Parental Health Problems	High Conflict & High SES	High Maltreatment	High All	Wald Test
<b>Demographic Indicators</b>							
Age (mean) <sup>a,b,d,e,i,j,m,n</sup>	15.64	15.44	15.33	15.52	15.25	15.14	45.58***
Female <sup>a,b,c,d,e,g,h,i,l</sup>	0.168	0.236	0.257	0.301	0.306	0.323	102.86***
Caucasian <sup>a,c,e,f,h,j,l,m,o</sup>	0.571	0.660	0.531	0.650	0.580	0.678	47.56***
African American <sup>b,e,f,h,j,l,m,o</sup>	0.263	0.223	0.319	0.226	0.294	0.201	30.18***
Latino <sup>d,e</sup>	0.073	0.052	0.066	0.052	0.044	0.042	11.95*
Other race	0.125	0.096	0.101	0.102	0.089	0.085	10.83
<b>Living Situation</b>							
Both biological parents <sup>a,b,c,d,e,h,i,k,m,n,o</sup>	0.220	0.168	0.140	0.159	0.023	0.097	178.22***
Biological mother <sup>a,c,f,g,h,i,j,k,n</sup>	0.506	0.586	0.628	0.551	0.163	0.582	443.457***
Biological father <sup>a,g,h,i,l</sup>	0.124	0.160	0.109	0.132	0.085	0.151	15.206**
Neither biological parent <sup>a,d,g,h,i,k,m,o</sup>	0.149	0.087	0.123	0.158	0.728	0.170	792.41***
Foster care <sup>a,d,e,g,h,i,j,l,m,n,o</sup>	0.008	0.001	0.006	0.013	0.284	0.043	222.00***

Superscripts show significant differences between classes: <sup>a</sup> Low All and Parental Incarceration & Substance Use. <sup>b</sup> Low All and Poverty & Parental Health Problems. <sup>c</sup> Low All and High Conflict & High SES. <sup>d</sup> Low All and High Maltreatment. <sup>e</sup> Low All and High All. <sup>f</sup> Parental Incarceration & Substance Use and Poverty & Parental Health Problems. <sup>g</sup> Parental Incarceration & Substance Use and High Conflict & High SES. <sup>h</sup> Parental Incarceration & Substance Use and High Maltreatment. <sup>i</sup> Parental Incarceration & Substance Use and High All. <sup>j</sup> Poverty & Parental Health Problems and High Conflict & High SES. <sup>k</sup> Poverty & Parental Health Problems and High Maltreatment. <sup>l</sup> Poverty & Parental Health Problems and High All. <sup>m</sup> High Conflict & High SES and High Maltreatment. <sup>n</sup> High Conflict & High SES and High All. <sup>o</sup> High Maltreatment and High All.

\*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$ .

High Maltreatment (4.4%) and High All classes (4.2%). The other race youth were not significantly different across classes.

Living situation variables differed significantly across the classes (Table 3). A relatively small proportion of youth in any class lived with both biological parents—the highest proportions were seen with the Low All (22.0%) class. Youth in the Parental Incarceration and Substance Use, Poverty and Parental Health Problems, and High Conflict and High SES classes had similar patterns with respect to living with biological parents; the majority of youth in these classes lived with their biological mothers, with smaller proportions living with both biological parents or their biological fathers. Youth in the High Maltreatment class were substantially more likely to be living with neither biological parent (72.8%) and to be living in foster care (28.4%). The youth in the High All class were the least likely to be living with one or both biological parent(s) of any of the classes except for youth in the High Maltreatment class.

## Discussion

This analysis is among the first to examine heterogeneous patterns of adverse childhood experiences among court-involved youth. Consistent with other studies (Baglivio et al., 2014; Dierkhising et al., 2013), substantial portions of youth reported significant histories of adversity, including multiple forms of childhood maltreatment, parental dysfunction, and socioeconomic disadvantage. Adding to the currently rich literature on cumulative ACEs, our analyses show substantial heterogeneity around childhood adversity, with clusters that appear to have significantly different etiological histories and treatment needs. These clusters add meaningfully to prior variable-centered analyses that demonstrated aggregate linear trends among adversities and between adversities and outcomes. The clusters also provide evidence related to adversity composition that adds nuance to prior findings regarding level differences (e.g., low, medium,

high). We discuss each class in turn, with particular attention to practice implications.

### Low-Risk Class

Youth in this class reported relatively low levels of all ACEs compared to the rest of the sample. In general, they had the lowest reported rate of each adversity, although the numbers of some ACEs were statistically indistinguishable from other classes. This class also contained fewer females and had a disproportionate number of Latinos and African Americans, which may reflect disparities in policing and punishing certain racial groups in general society. Still, 17.5% of these youth had a history of paternal incarceration, and 49.7% reported elevated family conflict, underscoring the high adverse experiences exposure of the sample as a whole. Furthermore, although these youth were the most likely of youth in all the classes to be living with both biological parents, only about 22% reported living with both biological parents, indicating that few families in any class had a “traditional” structure. Nonetheless, probation officers and clinicians may be able to engage this class’s relatively strong family supports to meet these young people’s needs.

### Parental Incarceration and Substance Abuse Class

These youth reported high levels of parental incarceration and substance use. They had relatively low levels of maltreatment, and moderate endorsement of social disadvantage. They were more likely to be Caucasian and had the second lowest percentage of females. Parental crime and incarceration emerged as experiences that may have been especially harmful to the social development of these youth. Recent studies have demonstrated that youth whose parents are incarcerated are more likely to experience poverty, perhaps in a cyclical fashion as parents move in and out of the justice system without being able to work (Kjellstrand & Eddy, 2011). Children with an incarcerated parent are more likely to have insecure attachment, especially if

their mother is incarcerated, in addition to being at risk of additional negative life experiences, all of which may predispose them to delinquency and other negative outcomes (Murray & Murray, 2010). Youth in this class may benefit most from a high-quality mentoring program that would provide both positive socialization and a stable adult influence (Jarjoura, DuBois, Shlafer, & Haight, 2013). Other possible interventions, such as the Parent Management Training–Oregon Model, may be especially effective for families dealing with incarceration and may strengthen family functioning overall (Eddy & Reid, 2002).

### Poverty and Parental Health Problems Class

This class, which had the highest proportion of African Americans, reported high levels of parental health problems and poverty indicators. This portrait of poverty and diminished familial resources was suggestive of a poverty-to-delinquency link, possibly because parents were dealing with significant challenges of their own. Although we do not have data about the neighborhoods where these youth lived, the current family economic indicators strongly suggested possible exposure to negative community contexts (e.g., disenfranchised neighborhoods, schools). This class represented overall trends that disproportionately funnel poor youth into the juvenile justice system via points of contact such as frequent policing in poor neighborhoods and schools (Birckhead, 2012). Wraparound services that could increase protective resources in terms of economic support, health care, and access to prosocial activities could assist youth in this class (Bruns et al., 2010).

### High-Conflict/High SES Class

These youth reported the highest levels of exposure to family conflict of any class. They also reported the second highest levels of physical abuse. Indicators of social disadvantage suggested relatively better economic situations for these families compared to others in the sample, confirmed by separate analyses that examined

for higher income brackets (not shown). We speculate that this class met a profile of domestic violence in the home, which was supported by analyses (not shown here) regarding physical violence between parents. Links between exposure to domestic violence and externalizing behaviors are well established, especially for boys (Evans, Davies, & DiLillo, 2008). This exposure can also be related to several mental health difficulties, such as anxiety and depression (Berzenski & Yates, 2011). From an intervention standpoint, these youth might have their needs best met via a family practice model, such as functional family therapy (Darnell & Schuler, 2015), that would address family contributors to youth problem behaviors.

### High Maltreatment Class

These youth reported extremely high histories of out-of-home-placements, parental incarceration, physical and sexual abuse, and neglect. These youth were also more likely to be younger in age, African American, and female. They were the least likely to be living with a parent, and by far the most likely to be living in foster care. These youth likely carry substantial effects of traumatic experiences, both in terms of abuse and their histories of familial instability, leading to earlier contact with the juvenile justice system. Punitive choices, such as stringent detention, are not likely to be helpful. Consideration of these young people's living situation—only a quarter live with either parent—is very important. Although many foster care situations are youth supportive, this is not consistent, and it is important to ensure that such youths have stable living environments. These dual-system-involved youth may benefit from therapeutic foster care models, such as Treatment Foster Care Oregon (Chamberlain & Reid, 1998). In addition, traumatic stress theories suggest that these youth need interventions to assist in building coping and social skills that could counteract the tendency toward hyper-reactivity and hostility in the face of conflict (Leve, Chamberlain, & Reid, 2005).

## High All Class

These youth reported profound histories of adversity, including the highest levels of most adversity indicators, such as family incarceration, parental mental health problems, and parental drug use. On the indicators where youth in this class did not have the highest scores, they had the second highest scores—maltreatment and out-of-home placements were second only to the High Maltreatment class, and poverty indicators were second only to the Poverty and Parental Health Problems class. This global picture of ACEs is suggestive of a serious need for multifaceted interventions to address trauma, poor resources, and difficulties in functioning. It is also important to note that this group was the youngest and had the most females. Given that early onset may lead to further involvement in the juvenile justice system, effective interventions targeting youth in this group can have a greater impact in the long run. Furthermore, despite the heavier involvement of boys in the justice system, our findings suggest that girls in the juvenile justice system exhibit higher risk for poor outcomes. As with other classes, trauma-informed interventions are likely necessary, especially for girls, to interrupt negative trajectories. Although these youth predominantly live with a family member, the data suggest that their family environment is not likely to be positive. To achieve success with these youth, multifaceted interventions that incorporate a family component are important. Studies have shown that these youth benefit the most from interventions that address multiple domains simultaneously (Farmer, Farmer, Estell, & Hutchings, 2007), such as Multisystemic Therapy (Henggeler, Mihalic, Rone, Thomas, & Timmons-Mitchell, 1998). Clinicians working with these young people should also be well trained to be empathetic to youth exhibiting severe behavioral problems.

## Limitations

This study has limitations worth noting. The data derive from an assessment completed by

probation officers, to whom court-involved youth may be less likely to report experiences of maltreatment and adversity. Nevertheless, Washington State has made adequate implementation of this assessment a high priority, including providing extensive training to probation officers using the tool (Barnoski, 2004b). Studies have also shown that a related risk tool, the Florida Positive Achievement Change Tool, had strong interrater reliability with different types of staff delivering the assessment (Winokur-Early, Hand, & Blankenship, 2012).

Although the retrospective nature of this data necessitates caution, multiple studies have demonstrated that retrospective reports correlate strongly with other sources of verified data (Smith, Ireland, Thornberry, & Elwyn, 2008). As respondents here are adolescents, the time period of retrospection is much shorter than for adult samples that have found adequate variance and stable linear trends of ACEs with health and functioning outcomes, even with lengthy retrospection periods (Hardt & Rutter, 2004; Yancura & Aldwin, 2009). This assessment is more epidemiologic than clinical in nature, aiming to identify cumulative exposure across an established set of adversities. The chronicity or severity of these exposures is thus not captured, which limits the ability to assess differences, such as whether the magnitude of maltreatment is associated with future outcomes (Smith & Thornberry, 1995). However, established short-form adversity assessments are feasible for routine pediatric screening and can provide important information for service providers as well as opportunities for merging administrative data across systems to gain a fuller picture of the etiology and trajectories of early life adversity (Murphy et al., 2014; Putnam-Hornstein, Needell, & Rhodes, 2013).

Additionally, these data are taken from one county in Washington State, which may constrain generalizability. However, the present sample is reasonably diverse compared with many U.S. jurisdictions. This particular county contains urban, suburban, and rural regions as well as

Native American reservations. Finally, this study lacks assessment of the neighborhood and community contexts in which youth reside. Our indicators of family social disadvantage are likely to be correlated with neighborhood poverty. However, we are not able to test for independent effects net of individual or family contexts relative to community-level characteristics. Future research should expand on the multilevel effects of adversity among court-involved youth.

## Conclusion

This study is among the first to test for clustering among ACEs within court-involved youth. These subgroup-seeking findings provide insights that are complementary to studies that average across whole samples, which can guide clinicians in contact with youth in juvenile justice systems in more targeted trauma-informed care (Ford, Chapman, Hawke, & Albert, 2007).

These analyses add to a growing body of literature that suggests that court-involved youth carry substantial histories of adversity. Further, greater cumulative adversity is associated with more negative health and development, extending prior findings and theorizing about ACEs (Wolff et al., 2015). These backgrounds of trauma, social disadvantage, and other adversities carry information about risk and protective factors that are imperative to consider when selecting and implementing interventions to prevent recidivism and to improve outcomes. Moreover, these analyses provide strong support for the use of risk assessment tools to target interventions for differing needs of court-involved youth. Simply using the risk assessment tool to determine whether or not a young person is at high risk for reoffending might lead to more punitive approaches. The results of this study illustrate how risk assessment tools can be used to uncover the particular needs of youth,

particularly around histories of trauma and adversity. Although the recent push to transform systems of care to trauma-informed (Ko et al., 2008) is noteworthy, more specified information could provide clinicians guidance as to which types of interventions will benefit youth most.

Further, even in jurisdictions that have focused on providing trauma-informed care and implementing evidence-based programs, many regions do not make evidence-based programs available for court-involved youth unless they are in detention settings such as residential treatment programs (e.g., Ford & Blaustein, 2013). This is unfortunate, particularly given that court-involvement (e.g., probation) on its own is likely to increase the rates of recidivism and involvement with the adult criminal justice system (Gatti, Tremblay, & Vitaro, 2009). The findings of this study underscore the need to address histories of trauma and adversity among court-involved youth across community and detention settings.

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# Effectiveness of Culturally Appropriate Adaptations to Juvenile Justice Services

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## Abstract

Despite efforts to increase cultural competence of services within juvenile justice systems, disproportional minority contact (DMC) persists throughout Canada and the United States. Commonly cited approaches to decreasing DMC include large-scale systemic changes as well as enhancement of the cultural relevance and responsiveness of services delivered. Cultural adaptations to service delivery focus on prevention, decision-making, and treatment services to reduce initial contact, minimize unnecessary restraint, and reduce recidivism. Though locating rigorous testing of these approaches compared to standard interventions is difficult, this paper identifies and reports on such research. The Cochrane guidelines for systematic literature reviews and meta-analyses served as a foundation for study methodology. Databases such as Legal Periodicals and Books were searched

through June 2015. Three studies were sufficiently rigorous to identify the effect of the cultural adaptations, and three studies that are making potentially important contributions to the field were also reviewed.

## Introduction

Canada and the United States have histories of disproportional representation of minorities in the juvenile justice system (Cabaniss, Frabutt, Kendrick, & Arbuckle, 2007; Cochran & Mears, 2015; Statistics Canada, 2015; Umemoto, Spencer, Miao, & Momen, 2012). Statistics Canada (2015) found in 2013–2014 that 41% of all admissions into juvenile justice facilities in nine surveyed areas were Aboriginal youth, although they made up only 7% of the population. This disproportional representation was even more prevalent among Aboriginal girls, who accounted for 53% of female youth admitted to

the corrections system. Umemoto et al. (2012) found that from 2000 to 2010 in Hawaii, Native Hawaiian, mixed race, Samoan, and other Pacific Islander youth were over-represented at decision points throughout the process, including referral to justice systems, detention, petitions filed, and placement on probation or protective supervision. Florida juvenile court referral data suggested that minority youth, especially Black males, were not only more likely to receive punitive sanctions than White youth but were also less likely to receive rehabilitative interventions (Cochran & Mears, 2015). The Sentencing Project (2014) noted that despite a drop in overall arrest rates in the United States.

In response to calls for reform, Canada and the United States each enacted legislation to address the need to reduce disproportionate minority contact (DMC). Canada's Youth Criminal Justice Act (YCJA) was enacted in 2002, and in the United States, the Juvenile Justice and Delinquency Prevention Act of 1974 was amended in 2002. In Canada, the law instructs that a young person's "gender, ethnic, cultural and linguistic differences . . . and aboriginal . . ." status be considered when determining the measures to be taken (YCJA, S.C. 2002, c. 1 [Sec. 3]). In the United States, Congress developed the Disproportionate Minority Confinement (and later Contact) mandate to reduce minority overrepresentation in the U.S. juvenile justice system, compelling states to monitor minority representation at all stages and to intervene when necessary to promote equality (Donnelly, 2015).

Several factors contribute to the imbalance, including behavior and perceptions of the personnel involved in justice system decision making. For example, in a 2009 Virginia study, McCarter showed that, once arrested, Black youth in that state were 1.62 times more likely to be incarcerated when controlling for severity of the crime, number of prior misdemeanors, family structure, urbanicity, income level, and whether or not the youth had repeated a grade in school. In a qualitative follow-up study, half the families

and youth queried thought race affected decisions about case disposition (McCarter, 2009). A 2004 Washington study found that probation officers described Black youth differently from White youth in written court reports. For Black youth, the officers focused on perceived personal characteristics. For White youth, they focused on the adolescents' family difficulties or peer influences (Hsia, Bridges, & McHale, 2004). In addition to problems resulting from disparate socioeconomic stresses and systemic policies and procedures, minority youth are subject to the perspectives of those providing the services. Current system adaptations in response to legislative mandates seek to address factors that lead to initial contact with the justice system, decisions made after initial contact including incarceration, and efforts to reduce recidivism (see, e.g., Mears, Cochran, & Lindsey, 2016).

In 2007, Cabaniss et al. summarized national best practices to reduce DMC for the U.S. juvenile justice system. First, for example, they found that data review and decision-point mapping allow the identification of points in the process where minority overrepresentation is occurring most. Another identified practice was cultural competency training, especially when implemented among key decision-makers; DMC was also shown to be reduced in sentencing when systems promote community-based detention alternatives, with a focus on rehabilitation and reintegration (Cabaniss et al., 2007). Other noteworthy research studies have likewise demonstrated that secure custody can be one of the least efficient options in curtailing recidivism (Lipsey & Cullen, 2007; Murphy, McGinness, & McDermott, 2010; DeLisi, Hochstetler, Jones-Johnson, Caudill, & Marquart, 2011). Further, reducing barriers to family involvement can better inform and increase family participation during the juvenile justice system process, resulting in their increased participation in detention alternatives (Cabaniss et al., 2007). They also found that removing decision-making subjectivity has been shown to reduce intentional or

unintentional racial biases that can occur in a justice official's assessments of juveniles. Lastly, Cabaniss et al. (2007) called for cultivating state leadership to legislate system-level change, stating that it was important to have society's progressive leadership providing "top-down" pressure for change. Some states have taken a holistic approach. Successful efforts to reduce DMC in Washington included a focus on enhancing service delivery staff's cultural competence and providing more systematic guidance for decision-making in addition to other administrative and procedural changes (McCarter, 2011). Yet few states have undertaken such multifaceted approaches to the problem.

Despite continuing attempts to identify, understand, and rectify DMC, deficits still exist in the availability of appropriate and equitable services. Cultural adaptations of service delivery to reduce DMC may help in preventing youth from coming into contact with the justice system, improving service delivery staff's cultural competence, providing diversionary services prior to minority youth's contact with the justice system, and reducing recidivism through offering intensive services to youth and their families. These cultural adaptations involve tailoring interventions to increase their cultural salience or the provider's cultural competence; this can result in improving service outcomes for clients and reducing re-entry into the juvenile justice system.

In our review, we found that the most stringently conducted studies to address cultural competence or cultural relevance in the juvenile justice system focused on prevention and treatment services. Even so, previous reviews demonstrated a paucity of studies evaluating the efficacy of culturally adapted interventions (Huey & Polo, 2008; Miranda et al., 2005; Reese & Vera, 2007; Wilson, Lipsey, & Soydan, 2003). In 2006, Strada, Donohue, and Lefforge conducted a literature review and content analysis for the consideration of ethnic-related factors in treatment outcome studies for adolescent substance use. Only 6%

of studies carried out sufficient statistical analyses to test for differential treatment response among minorities. A meta-analytic review by Andrews et al. (1990) identified three significant principles characterizing interventions that seemed effective for reducing recidivism: need, responsivity, and risk. The need principle rose from the finding that interventions attending to juveniles' appropriate criminogenic needs helped to reduce recidivism, the responsivity principle required interventions to be effective in addressing those needs, and the risk principle suggested that delivering services to high-risk delinquents would be most effective for reducing recidivism (Andrews & Bonta, 2006). Focusing on cultural issues, Huey and Polo (2008) emphasized a need to consider acculturation, within-group socioeconomic status, and exposure to discrimination. Regardless of an intervention's intent or process, the effectiveness of cultural adaptations can only be validated by improved service outcomes for the targeted population, including, for example, reduced contact with the justice system.

## Research Questions

Our literature review identified and analyzed research on enhancing the cultural and linguistic appropriateness of service delivery in juvenile justice. It addressed the following research questions:

1. Are adaptations, which are intended to make services more culturally and linguistically appropriate, effective in changing the service providers' behavior, thereby making them more culturally competent (as opposed to focusing solely on their knowledge or attitudes)?
2. Are adaptations, which are intended to make services more culturally and linguistically appropriate, effective in changing the outcomes (e.g., behavior, health status) or self-reported experience for the service recipient (e.g., engagement in services, recidivism, overall satisfaction)?

## Conceptual Framework of Adaptations

This article grew out of an earlier Canadian Institutes of Health Research (CIHR) project to conduct a broad systematic search and evaluation of cultural adaptations in the fields of health and mental health services (Healey, Wells, Dettlaff, Vergara, & Janke, 2012). The project evaluated cultural adaptations by assessing changes in provider behaviors, recipient self-reported experiences, and recipient outcomes. After this extensive systematic review, the CIHR project team was able to identify different types of adaptations and organize them into a preliminary conceptual framework that represented the range of adaptations found in their analyses (Figure 1). This conceptualization served as the organizing framework for the current study.

## Methodology

### Search Strategy

A structured summary of the search strategy is presented in Figure 2. The search terms used in this review were selected based on their efficacy in producing pertinent literature. In addition, supplementary terms were compiled during the initial literature review to further guide the search strategy of juvenile justice literature. Broadly, the search strategy included terms related to *cultural appropriateness*, *juvenile justice*, and *methodology*. For databases where *methodology* is uncommon (e.g., law journals), the term *evaluation* was used instead. These final search terms were then administered to a variety of publication databases that were available through the University of British Columbia.

### Search Criteria

As reflected by the search terms, studies had to meet several criteria to be retained within this review. They were required to

have tested behavioral changes in providers and/or compared culturally adapted services relevant to the juvenile justice systems to the same services in their standard form. Cultural adaptations were identified as modifications implemented to a standard service with the intention of better meeting the needs of a minority population. Studies were also required to have tested the effects of the implementation of cultural adaptations on either service providers' behavior, the

Figure 1. Conceptual framework for cultural adaptations.

1. Outreach to, and involvement of, the community
  - a. Community needs assessment—what is the issue from their perspective
  - b. Involvement in deciding on or preparing the adaption
  - c. Participating in implementing/managing/delivering services
2. Structure and process of service delivery
  - a. Geography/location
  - b. Physical space
  - c. Provision of facilitating tools and personnel
    - i. Translation
    - ii. Language matching
    - iii. Race, culture, gender matching
    - iv. Format or style of service delivery
    - v. Primary provider selection and training
  - d. Provision of supplemental services, resources, or supports to service recipient
    - i. Supplemental providers (e.g., traditional healer)
    - ii. Funds for a specific service or resource
    - iii. Other
  - e. Cultural adaptation of content in service delivery
    - i. Method of delivery
      1. One-way communication → from provider to recipient
        - a. Text
        - b. Pictorial
        - c. Video
        - d. Audio
      2. Electronic, interactive → requires response from user and provides automated feedback
      3. Personal communication, interactive
        - a. In-person
        - b. Electronically facilitated (e.g., Skype, live chat)
    - ii. Type of content
      1. Level of specificity to recipient (individualized compared with general)
      2. Subject matter
        - a. Affect-free information with purpose of identification with recipient
        - b. Group-specific information relevant to recipient and topic addressed (e.g., smoking)
        - c. Negative socio-cultural experiences as relational or motivational
        - d. Positive cultural content (e.g., values as motivating factors)

Note. Adapted from Healey et al., 2012, p. 43.

Figure 2. Search strategy.

**Adaptation (Intervention to Improve Cultural Competence/Appropriateness/Safety and Linguistic Appropriateness)**

- Individual: training, education, supervision, experiential
- Service adaptation: professional behaviors in the course of service delivery, including intake, engagement, service delivery
- System: system-wide policies, methods, and procedures of intake, engagement, service delivery
  - Agency/organization
  - Community
  - Regional, provincial, federal policies and laws

**Outcome of Interest**

- Behavior of provider
- Outcomes for service recipients
  - Self-reported experience—felt listened to and heard, believed provider was responsive to concerns, got what they were seeking, etc., felt respected
  - Problem, issue, or need requiring service is addressed (e.g., health outcomes are improved)

**Types of Studies**

- RCTs and quasiexperimental designs
- Other forms of evidence are summarized as appropriate but were not searched

**Types of Reports**

- Peer reviewed literature was the predominant source of studies found
- Dissertations and theses were included
- Grey literature (technical reports from government agencies or scientific research groups, papers from major working research groups/committees, research conference proceedings, etc.) were surveyed, but all possible sources were not searched

**Study Population**

- All study populations representing diverse populations or specific groups subject to bias or disparity in the service system were relevant; could include populations in any country that might be subject to disparate treatment or outcomes due to race, ethnicity, or culture

**Topic Foci**

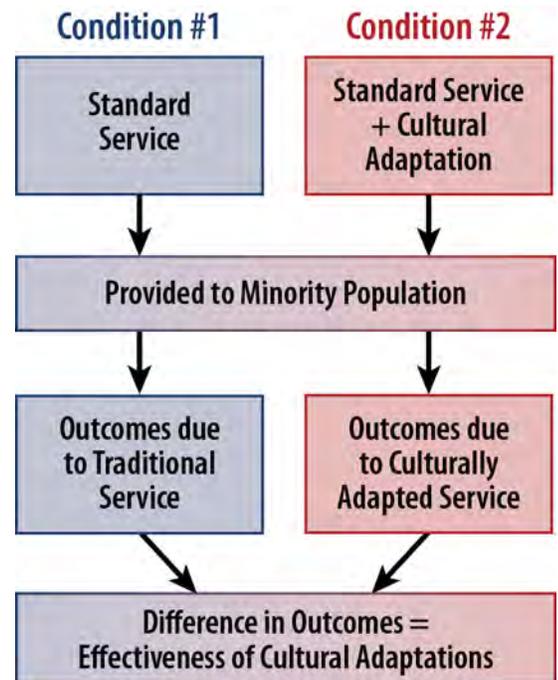
- Cultural competence, cultural and linguistic competence, cultural appropriateness, cultural safety, cultural sensitivity, cultural awareness, etc. *AND*
- RCTs and quasiexperimental designs *AND*
- Juvenile justice *AND*
- Specific description of the adaptation intended to improve cultural competence or safety (e.g., training, educational modules, supervision, mentoring), changes in policy, changes in how a service is delivered (e.g., outreach and engagement, use of community members to help guide service recipients through the system, patient advocates) *AND*
- Outcomes including service effectiveness for the service recipient (adapted from Hasnain and colleagues, 2009)
  - Service recipient’s perspective and knowledge of situation/issue/problem
  - Behavioral indicators including treatment compliance
  - Health and psychosocial measures of well-being, self-efficacy, and quality of life
  - Self-reports on impact of situation/issue/problem on job, school, family life, etc.
- Outcomes describing the provider’s behavior

**Time, Place, and Language**

- Literature electronically available
- Literature in English

Note. Adapted from Healey et al., 2012, pp 12-13.

Figure 3. Isolating and evaluating cultural adaptations.



self-reported experience of service recipients, and/or changes in outcomes for service recipients.

Figure 3 shows the appropriate study comparison design required to isolate and evaluate cultural adaptations for the purposes of the current review. See Table 1 for the full list of study inclusion/exclusion criteria.

**Primary Databases Searched**

In October 2012, we searched electronic databases that had full text availability, including PsycINFO, Legal Periodicals & Books, Legal Period Retrospective, Social Service Abstracts, Social Work Abstracts, and Sociological Abstracts and updated the search twice thereafter through June 2015. After completing the search for peer-reviewed literature in 2012 and again in 2015, we searched the grey literature to maximize located items and minimize

Table 1. *Summary of Inclusion and Exclusion Criteria*

Inclusion	Exclusion
1. English language from any country.	1. Study findings not in English.
2. Electronically available.	2. Not available electronically.
3. RCTs and quasiexperimental designs with parallel cohorts of control or comparison groups.	3. Studies of insufficient quality as judged by the study protocol; commentaries; reports lacking a report of research methods used; observational studies that used statistical analyses to determine effects of changes in service delivery but did not include parallel cohorts for comparison of outcomes.
4. Services immediately relevant to juvenile justice.	4. Other human services.
5. Described adaptation(s) intended to make services more responsive to or effective for diverse racial and ethnic populations; adaptations may target: <ul style="list-style-type: none"> <li>• individual service provider OR</li> <li>• service system.</li> </ul>	5. Did not contain a description of the specific activities undertaken to improve cultural competence, appropriateness, or safety.
6. Explicitly tested the effectiveness of the cultural adaptation separate from juvenile justice intervention studied.	6. Studies in which the cultural component and the juvenile justice intervention were not evaluated separately from the other service provided. Also excluded in this category were studies that tested a generally used intervention on a specific cultural, minority, ethnic, or disadvantaged population (e.g., testing whether Cognitive Behavioral Therapy would work better with a specific minority population than services as usual). Although possibly helpful in reducing disparities, this is not considered to be a cultural adaptation that addresses differential access or treatment in the service sector.
7. Focus of study was on provision of a service.	7. Studies that: only tested the translation of psychometric instruments, questionnaires, and diagnostic tools; focused on engaging visible minorities in research.
8. Studies pertained to people and organizations in the mainstream culture, making adjustments to include and serve those who are subject to inequity in service delivery.	8. Studies that focused on countries in which the racial or ethnic group of concern is also the majority or mainstream population and not subject to differential treatment. That is, studies of adjustments that enhance international adaptation of services are not the focus of this project.
9. Reported outcomes that included: <ul style="list-style-type: none"> <li>• change in service provider behavior, OR</li> <li>• change in self-reported experience of service recipient, OR</li> <li>• change in outcomes for service recipient.</li> </ul>	9. Did not contain evidence of having measured outcomes of the adaptation to enhance cultural competence, appropriateness, or safety with specific reference to <ul style="list-style-type: none"> <li>• provider behavior,</li> <li>• reported experience of service recipient, and</li> <li>• outcomes for service recipient.</li> </ul>
10. Service recipients were of any group subject to disparities, within age groups relevant to juvenile justice legislation (approx. 12–18 yrs).	10. Service recipients did not represent a group subject to disparities in service delivery or outcomes, were too young, were adults.

Note. Adapted with permission from Healey et al., (2012), p. 14.

publication bias. The relevant resources included in the grey literature search were the National Criminal Justice Reference Service (serving all justice offices, including the Office of Juvenile Justice and Delinquency Prevention), LexisNexis Academic, LegalTrac, HeineOnline, and ProQuest Dissertations and Theses. The search process was further supplemented by backward and forward citation searching in the 2012 and 2015 searches. In the backward citation process, we selected references from relevant articles and reviews and further screened them for relevance. The

forward citation search used the Web of Science resource ([www.webofknowledge.com](http://www.webofknowledge.com)) on the selected articles and reviews to locate studies that had referenced the original reports identified. Located items were once again screened for relevance. A sample electronic database search is provided in Figure 4.

### Appraisal and Extraction Strategy

**Phase 1: Title screening.** We initially screened articles located during the electronic searches by title for potential relevance using the

Figure 4. Sample search for electric databases.

PsycInfo Database Search – September 16th 2015

	Search Terms	Search Options	Hits
S14	((S11 OR S12) AND (S10) AND (S2) AND (S1))	Limiters - English; Population Group: Human Search modes - Boolean/Phrase	(415)
S13	((S21 OR S22) AND (S10 AND S2))	Search modes - Boolean/Phrase	(2)
S12	("Randomized controlled trial*" OR RCT OR "clinical trial*" OR "multicenter study" OR "single blind" OR "double blind" OR "triple blind" OR placebo* OR "random* allocat*" OR "allocat* random*")	Search modes - Boolean/Phrase	(77,161)
S11	(quasiexperiment* OR "quasi experiment*" OR "non equivalent control*" OR "nonequivalent control*" OR "control group" OR "comparison group" OR posttest* OR "post test*" OR pretest* OR "pre test*" OR "time series" OR timeseries)	Search modes - Boolean/Phrase	(91,310)
S10	S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9	Search modes - Boolean/Phrase	(533,777)
S9	DE "Cross Cultural Psychology" OR DE "Cross Cultural Treatment" OR DE "Cross Cultural Counseling" OR DE "Cross Cultural Communication" OR DE "Cross Cultural Differences" OR DE "Acculturation" OR DE "Culture Change" OR DE "Cultural Sensitivity" OR DE "Cultural Competence" OR (DE "Treatment compliance" AND (racial OR race OR ethnic* OR minorit* OR culture* OR intergroup OR "inter group"))	Search modes - Boolean/Phrase	(63,011)
S8	("communication barrier" OR "language barrier" OR bilingual OR "language access" OR "language concordance" OR overrepresentation OR "over representation")	Search modes - Boolean/Phrase	(13,914)
S7	(disparit* OR ineq* OR bias* OR sensitiv* OR disproportion*)	Search modes - Boolean/Phrase	(239,125)
S6	"ethnic* sensitiv*"	Search modes - Boolean/Phrase	(104)
S5	"racial* sensitiv*"	Search modes - Boolean/Phrase	(50)
S4	("linguistic* competen*" OR "linguistic* appropriat*")	Search modes - Boolean/Phrase	(927)
S3	(cultur* W0 (safety OR competen* OR diversit* OR factor* OR aware* OR influence* OR appropriate OR responsive* OR adapt* OR knowledge* OR specific* OR focus* OR considerat* OR grounded* OR informed* OR tailor* OR relevan* OR congruen* OR consisten* OR ident* OR socializ* OR disparit* OR ineq* OR bias* OR sensitiv* OR innovat* OR adapt* OR match* OR syntonic OR legitima* OR target* OR concordan*)) OR (rac* W0 (safety OR competen* OR diversit* OR factor* OR aware* OR influence* OR appropriate OR r ...	Search modes - Boolean/Phrase	(313,048)
S2	(Justice OR Crime* OR Criminal* OR Convict* OR Custod* OR Probation* OR Parole OR Diversion* OR Supervis* OR Detention OR Delinquen* OR Jail* OR Arrest* OR Incarcerat* OR Court* OR Sanction* OR Recidiv* OR Judicial OR Offen* OR Rehabilitat* OR Prevent* OR Sentenc* OR Adjudicat* OR Disposition* OR Petition* OR Trial* OR Hearing* OR Commit* OR Intake OR Arraignment OR "Case Management")	Search modes - Boolean/Phrase	(959,871)
S1	(Adolescen* OR Teen* OR Juvenile* OR Youth* OR Young* OR Child* OR Minor OR Minors)	Search modes - Boolean/Phrase	(948,557)

inclusion and exclusion criteria (see Table 1) and the research questions noted above; we also screened the selected reference titles extracted from the key articles in the citation-searching process.

**Phase 2: Abstract and full-text screening.** We then reassessed all items deemed potentially relevant to the project using the inclusion and exclusion criteria, first by abstract screening and then full-text screening. We double screened all located articles during both Phase 1 and Phase 2

appraisal. Disagreements among our team's raters were discussed until we reached agreement, including consultation with this paper's primary investigator when necessary.

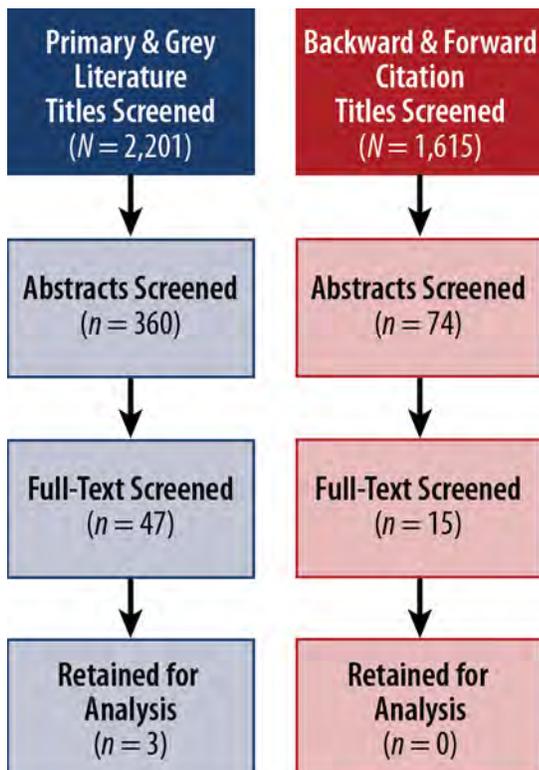
**Phase 3: Data extraction.** We appraised retained articles through data extraction. This phase was carried out via an adapted standardized instrument based on the work of Hasnain and colleagues (2009); Littell, Corcoran, and Pillai (2008); and the Cochrane Collaborative GRADE approach (Balshem et al., 2011). Data included sample

demographics, baseline characteristics, setting, methodology, outcomes, and quality assessment. We performed independent reviews of each other's data collection to ensure extraction consistency among reviewers.

## Results

A total of 1,437 articles were found during the primary database search (759 in 2012 and 678 in 2015). Seven hundred and sixty-four articles were identified during the alternative/grey literature search phase (441 in 2012 and 323 in 2015). The backward citation search process identified 1,601 articles for screening (693 in 2012 and 908 in 2015), and the forward citation search returned 14 articles in total from the key articles, (11 from 2012 and 3 from 2015). Search totals presented are unduplicated using RefWorks where possible. In the case of citation searching, only references uploaded during the abstract screening phase were unduplicated. Of the 3,816 screened articles, 3 reports met all of this review's criteria for inclusion. See Figure 5 for a breakdown of

Figure 5. Search results by phase.



search results by phase of appraisal. Although the studies showed that different service providers, policymakers, and researchers had an awareness of DMC's importance, which was also often the driving force behind their implementation of culturally modified services, we found no studies that directly assessed proportionality of minority representation through the use of extended followups with nonminority comparison groups. Studies tended to focus exclusively on their population of interest.

## Overall Trends in Excluded Studies

To effectively evaluate research on cultural adaptations in isolation, stringent specific inclusion criteria precluded many studies, most often due to research design (e.g., lack of adequate control condition). In addition, a large portion of the located literature implemented interventions that were considered to be culturally appropriate (i.e., suitable for minority groups) as opposed to culturally adapted (i.e., modified to target minority groups), with only the latter meeting criteria for inclusion within this review.

## Description of Included Studies

Three reports met criteria for this review. Each study implemented one or more cultural adaptations to better target minority service recipients and evaluated the isolated impact of the adaptation on recipient outcomes through comparisons with the same service that had not been adapted. See Table 2 for a summary of participant demographics and main findings by study.

**Burrow-Sánchez and Wrona (2012).** This pilot study compared a standard group cognitive behavioral treatment (S-CBT) with its culturally accommodated version (A-CBT) among Latino adolescent substance users, 95% of whom were referred by probation officers (71%) or case managers (24%) from within the juvenile justice system, with the rest referred directly from their parents. The S-CBT condition comprised 12 weekly 1.5 hour sessions to address problem solving, decision making, coping skills, and

Table 2. Description of Included Studies and Main Findings

Study	Population	Interventions	Outcomes
Comparing culturally accommodated and standard group CBT for Latino adolescents with substance use disorders: A pilot study (Burrow-Sánchez & Wrona, 2012)	Latino adolescents meeting diagnostic criteria for alcohol/drug abuse or dependence (N = 35, 94% male, 69% U.S. born) (Ages 13–18 years; M = 15.49, SD = 1.34)	Experimental: Accommodated Cognitive Behavioral Treatment (A-CBT) Control: Standard Cognitive Behavioral Treatment (S-CBT)	Parents in the A-CBT condition were more satisfied with the program (p = .02). No significant difference in adolescent satisfaction, (p = .09). No significant difference in reduction of past-90-day drug use. No significant difference in treatment completion rates (p > .05).
Cultural accommodation of group substance abuse treatment for Latino adolescents: Results of an RCT (Burrow-Sánchez et al., 2015)	Latino adolescents meeting diagnostic criteria for alcohol/drug abuse or dependence (N = 70, 90% male, 61.4% U.S. born) (Ages 13–18 years; M = 15.20, SD = 1.24)	Experimental: Accommodated Cognitive Behavioral Treatment (A-CBT) Control: Standard Cognitive Behavioral Treatment (S-CBT)	No significant difference in reduction of past-90-day drug use between treatment conditions (p = .66).
Efficacy of an HIV/STI sexual risk-reduction intervention for African American adolescent girls in juvenile detention centers: A randomized controlled trial (DiClemente et al., 2014)	African American adolescent girls (N = 188, 100% female) (Ages 13–17 years; M = 15.31, SD = 1.06)	Experimental: Culturally congruent Imara STI intervention, including individual counseling, STI testing and treatment, and expedited partner therapy. Control: Usual care STI testing, treatment, and counseling	Significantly higher condom use self-efficacy at the 6-month assessment (p < 0.001). Significantly higher HIV/STI knowledge at the 6-month assessment (p < 0.001). Significantly higher condom use skills at the 6-month assessment (p < 0.001). No significant difference in bacterial STIs (p = 0.34), 30-day consistent condom use (p = 0.632), sexual communication self-efficacy (p = 0.725), 30-day number of vaginal sex partners (p = 0.896), or attrition (p = 0.71).

problem behaviors such as substance use and delinquency. Outcomes included substance use reduction using the Timeline Followback and client satisfaction of both the adolescents and their parents. Ethnic identity and adolescent identification with family were also measured to inform moderator analyses. The Structured Clinical Interview from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) was used to identify substance abuse or dependence disorders at intake. All materials were offered in Spanish and English, and the staff for both conditions were bilingual.

The A-CBT condition featured several cultural adaptations implemented with the intention of improving treatment response among the Latino sample. It was designed to maintain the same core theoretical and structural components as S-CBT, but it also featured revised treatment content to better reflect the experience of Latino

adolescents. Other revisions included the addition of an “Ethnic Identity and Adjustment” module and an increase in parent-therapist contact. The last adaptation was the result of previous research by the team indicating Latino parents perceived barriers that limited their involvement in the treatment program. This adapted treatment also arose within the context of a cultural accommodation model for substance abuse treatment (CAM-SAT), which included a series of focus groups with stakeholders in the Latino community (see Burrow-Sánchez, Martinez, Hops, & Wrona, 2011 for further information).

**Assessment of quality and bias.** Collaborative efforts with community stakeholders in the development of the accommodated condition represented a major strength of this study. Further, the fidelity of the program appears to have been rigorously maintained through therapist training, detailed treatment manuals,

adherence checklists, videotaped sessions, and weekly supervision meetings. Notably, Dr. Burrow-Sánchez described one lesson on drug education featured in the A-CBT as an additional component, admitting that although it is not a cultural element, it was requested by Latino community stakeholders (personal communication, April 10, 2013). The findings may not generalize to females due to the predominantly male representation.

**Reported findings.** There was a significant difference in parent treatment satisfaction between groups,  $F(1, 28) = 5.80, p = .023$ . There was no significant difference between groups for adolescent satisfaction,  $F(1, 26) = 3.107, p = .09$ . Moderator variables evaluated for adolescents indicated that endorsement of familism and ethnic identity appeared to have moderating effects that served as protective factors against substance use. Overall, however, there was no significant difference found between S-CBT and A-CBT on substance use reduction.

**Burrow-Sánchez, Minami, and Hops (2015).** This study was a replication of Burrow-Sánchez and Wrona's pilot study (2012), comparing the effectiveness of S-CBT to a culturally A-CBT among Latino/Hispanic adolescents. Participants all met criteria for alcohol or drug abuse according to the DSM IV Structured Clinical Interview. Sixty-three percent of participants were referred by the probation officers, 33% from the case managers, and the remaining 4% were referred by the treatment providers or parents. The participants were assessed pretreatment, posttreatment, and at 3-month follow up.

**Assessment of quality and bias.** One reported strength of this study was that very few participants dropped out of the treatment. One limitation was that males comprised most of the study sample, so the findings of this sample may not generalize to female service recipients. Another reported limit to generalizability was that during the recruitment process, the researchers did not obtain information on the comorbidity of the

disorders as well as the different types of drugs typically used by adolescents in this population.

**Reported findings.** There were no significant differences between the two groups on substance use reduction. Moderator analyses likewise showed no significant difference between treatment groups. However, findings from these analyses suggest that participants with higher levels of affiliation with Latino ethnic identity and higher parental familism may receive more benefit from the adapted intervention.

**DiClemente et al., 2014.** This study conducted a randomized controlled trial among African American adolescent girls in juvenile detention to assess the effectiveness of the Imara intervention, a sexually transmitted infection (STI) risk-reduction intervention. The outcomes were measured using audio computer-assisted self-interview, condom skills assessment, and self-collected vaginal swabs to detect chlamydia and gonorrhea at baseline, and at 3- and 6-months post-randomization.

The Imara condition featured several cultural adaptations implemented with the intention of addressing the unique needs of African American adolescent girls. The research team used the ADAPT-ITT model to systematically tailor the standard intervention (Wingood & DiClemente, 2008). The ADAPT-ITT model is a framework consisting of eight sequential phases that aid in informing the modifications in existing Evidence Based Interventions (EBIs). The participants in the Imara condition were treated with three individual-level sessions and four phone sessions by a trained African American female health educator. Also, STI-positive adolescents in the Imara condition were offered expedited partner therapy (EPT), which consisted of providing the girls with additional oral medications and related instructional materials to give to their partners. Participants in the Usual Care condition were provided with STI testing, treatment, and counseling delivered usually by staff at the detention center. EPT was not offered to participants in the Usual Care condition.

**Assessment of quality and bias.** This study appeared to only partially meet this paper's criteria, because the inclusion of EPT in only the Imara condition did not appear to have a cultural purpose. EPT was offered to the partners of adolescents to address male partner risk, STI re-infection, and sexual network risk for STI. However, none of the outcomes that showed significant improvements between groups were deemed likely to be influenced by the inclusion of EPT.

One strength of this study was its use of diverse biological, behavioral, and psychosocial measures to assess outcomes. There was also a high retention rate among the participants in both conditions at the 3-month follow up (91%) and 6-month follow up (91%). Reported limitations included limited statistical power and a relatively short follow-up period that may have limited the ability to understand the Imara intervention's full effects.

**Reported findings.** The results revealed no significant differences between the two groups through the 6-month assessment in behavioral outcomes that included condom use, unprotected vaginal sex, the proportion of condom-protected sex acts, number of vaginal sex partners, or incidence of chlamydial or gonorrheal infections. However, significant differences were observed between the two conditions at the 6-month assessment for the psychosocial outcomes—condom use self-efficacy,  $p < 0.001$  and HIV/STI knowledge,  $p < 0.001$ —as well as behavioral measure outcome that includes condom use skills,  $p < 0.001$ . DiClemente and colleagues (2014) also noted that the overall high retention rate suggested strong levels of engagement and motivation in both conditions.

#### Additional Studies of Interest

In the literature search, three other studies stood out as being worthy of note even though they did not meet the criteria for inclusion. These studies either implemented possibly promising adaptations or focused on specific groups of interest.

Study information, reported findings, and their relevance to this review and providing competent care are discussed below.

**Banks, Hogue, Timberlake, & Liddle (1996).** This study investigated the social skills training (SST) curriculum programs among African American adolescents, comparing a standard culturally relevant program, Positive Adolescent Alternative Training (PAAT), to another similarly culturally relevant condition presented based on an African cultural value system. Each curriculum was carried out in nine 1.5 hour sessions over a 6-week period. Assessments of social skills and anger were used as outcomes. Although social and anger management skills could be thought of as a preventive intervention for delinquency, that was not explicitly noted as the intent of the study.

No significant differences were found between the PAAT and the Afrocentric SST conditions for social skills and anger management or when evaluating mediating effects of Afrocentric beliefs for African American adolescents. However, social skills training overall was effective in decreasing trait anger and increasing skills related to assertiveness and self-control. This study also was noteworthy in that it demonstrated the use of more rigorous research in evaluating culturally adapted preventive efforts to avert contact with the justice system resulting in DMC.

**Hanlon, Bateman, Simon, O'Grady, & Carswell (2002).** This study was conducted to evaluate an early intervention approach among youth who were at risk of developing a deviant lifestyle. Four-hundred-seventeen African American and 11 White participants identified as at risk of developing a deviant lifestyle were assigned to either a risk-reduction strategy condition or a standard intervention condition and were assessed 1 year later for substance abuse, sexual activity, contact with juvenile authorities, and delinquent activities. This study did not meet criteria for full inclusion in this review, as the intervention was designed to target adolescents in general and not African American youth in general.

In the analyses, results favored the experimental condition at 1 year follow up with respect to reported alcohol abuse, frequency of delinquent activity, and number of different types of delinquent activity reported. However, there were notable differences at baseline between groups. The participants in the control condition were relatively older than those in the experimental condition and reported higher risk scores for delinquency, substance use, and being more sexually active, among other differences.

This study illustrates the importance of a community mentoring approach in risk reduction, supporting the social needs of disadvantaged youth by boosting their positive behaviors and attitudes. Existing clinical personnel provided the individual counseling; they were trained in the case management approach that included needs assessment and planning and reviewing of mutually agreed upon treatment goals as well as advocacy and community referral procedures. Prevention services, including mentoring and remedial education, were also provided. Mentors hired from the community included young African American college students who conducted group sessions aimed at refining social and life coping skills, resolving conflicts, strengthening self-esteem, avoiding substance abuse, and becoming aware of HIV/AIDS. Furthermore, the intervention also included regular meetings with parents and caretakers to help support their children.

**Zahn, Day, Mihalic, & Tichavsky (2009).** This review highlighted and compared the efficacy of nine gender-specific (only girls) and six gender nonspecific programs (both boys and girls) for youth involved in the juvenile justice system. The findings of these programs revealed challenges with respect to the research design's evaluations. Only two programs, Reaffirming Young Sisters' Excellence (RYSE) and Working to Insure and Nurture Girls Success (WINGS), utilized randomized controlled research design. The RYSE study was of particular interest to this review, for although the intervention included multiple

racial groups, the intervention was only effective for African Americans. Two other programs were identified that used pretest–posttest designs with in-house control groups, with five more with pretest–posttest designs without control groups.

This study's importance arises from the reminder that gender-specific effects are not always analyzed or reported in the literature. The report used the Blueprints for Violence Prevention database to identify 392 programs, only 29 of which had conducted analyses by gender, and only 6 of those programs involved youth in the criminal justice system. Overall, the authors concluded that established gender-nonspecific programs could be effective in reducing recidivism in both male and female populations. However, the authors also noted that gender-specific programs were relatively new and thus required attention. Specifically, they drew attention to the potential efficacy of gender-specific programs on other relevant outcomes beyond recidivism, such as education, employment, relationships with family and friends, self-esteem, self-efficacy, and other social-psychological outcomes. These represent important target outcomes that remain linked to, and important for, the reduction of DMC for both males and females. Equally importantly, this work highlights the importance of remembering potential gender effects in the search for culturally appropriate interventions.

## Discussion

The strength of this review lies in its focus on research designs that allowed for isolation and analysis of cultural adaptations. We sought to determine whether cultural adaptations resulted in changes in provider behavior or in better outcomes for clients (e.g., more effective engagement in service delivery or reduced arrest rates). Although change in minority representation within services was not directly assessed, each of the studies sought improvement in client outcomes plausibly related to re-entry into juvenile justice services. If effective, these services not only improved client well-being but also

decreased the representation of these minority groups within these services and within the overall justice system in the long term.

### Observations and Themes from the Literature

An important theme observed within the literature was that culturally competent services must meet the target populations' specific needs. Confirmation and measurement of both service representation and outcomes for minorities in contact with juvenile justice systems was a necessary precondition to the development of any service intended to target their needs. This conclusion may seem self-apparent; however, correct assessment of a community's needs stems from a clear and deep understanding of, and collaboration with, the community and community members in question. This in part includes a full understanding of the ethnic identities of target adolescent groups. A pretreatment cultural assessment might be an important step in administering the appropriate interventions for adolescents to be able to match clients with interventions congruent with their social/cultural beliefs (Benish, Quintana, & Wampold, 2011). Huey and Polo (2008) alternatively suggested that individualizing treatment for ethnic minorities as needed may be more effective in addressing the diverse cultural experiences. The questions guiding treatment decisions can therefore be, "Does the intervention suit the client?" and "Is the client suitable for the intervention?" An awareness of both intervention and client characteristics may be helpful for providing effective programming to reach ethnically diverse youth as a group and as individuals.

It is also worth noting that investigation into which client, provider, or program characteristics make a treatment culturally competent is essential in reproducing effective treatments, even if the treatment in question appears to benefit all recipients. Interventions shown to be effective in benefiting communities overall may not actually be equally effective for all service recipients.

Differential impacts may not be evident due to the minority status of a group in question. Knowledge of the mechanisms by which efficacy is achieved is helpful for research and also helpful for policy and practice. For example, Burrow-Sánchez, Minami, and Hops (2015) suggested that cultural moderators can affect the outcomes in treatment. As a result, these researchers call for studies investigating ethnic/cultural factors as treatment moderators and provide direction for conducting these analyses appropriately.

Beyond culturally competent treatment, the need for evidence-based crime prevention treatments has been highlighted among researchers and policymakers (Zahn et al., 2009). Hanlon and colleagues (2002) described an intervention with children that reduced the odds of involvement in delinquent activities at the 1 year follow up. Preventive measures taken earlier in life can have a greater impact later in life, such as preventing the consequences of contact with the justice system altogether as opposed to minimizing harm after the fact through treatment. Many factors can plausibly be considered to affect DMC, either in initial contact with the juvenile justice system and/or recidivism thereafter, including community and social factors, financial barriers, and personality, among others. Accordingly, many factors are available as targets for potential interventions. Services such as the social skills training implemented by Banks et al. (1996) could go beyond theoretical impacts and implement an extended followup to study direct program effects on delinquency and other justice-related outcomes later in life.

Lastly, there appears to be a paucity of randomized clinical trials (RCT) for ethnic minorities in general. Burrow-Sánchez et al. (2015) mentioned the evaluation of meta-analytic studies (Benish et al., 2011; Griner & Smith, 2006) that revealed a focus on the non-RCT study designs in most of the culturally adapted treatments. Although these studies without the RCT study designs might be helpful in informing the overall usefulness of a

culturally accommodated treatment without subjecting potentially vulnerable groups to control conditions, they cannot reveal the direct gains of including cultural elements in the treatment (Burrow-Sánchez et al., 2015). This was further evidenced by this review in that only three studies appeared to incorporate RCT study design for the culturally adapted treatments. Additionally, the literature revealed the evaluation of cultural adaptations only for the service recipients; we did not locate any studies regarding training/programming offered to service providers (e.g., police or judicial officers) to augment cultural competence.

### **Implications for Service Providers and Policymakers**

Service providers and policymakers continue to strive to make services as effective as possible for all clients. This includes an increase in community-based alternatives to detention, multidisciplinary interventions to prevent any contact from ever occurring, and intervention in early stages of contact to prevent deeper system involvement (e.g., Umemoto et al., 2012). Efforts should feature both the reduction of risk factors as well as the increase of protective factors, either culture specific and/or general (see Kim, Gilman, & Hawkins, 2015 for examples of general preventive efforts). New efforts must also build upon previous knowledge, including previously identified client differences resulting from gender, culture, race, ethnicity, environment, and so on. Additionally, some of the aforementioned state reports indicate some signs of progress toward competent treatment and proportional representation within justice systems. However, many cultural adaptations in juvenile justice appear to be implemented by individual providers and institutions based on face validity and consultation with experts. Reactive adaptations may lead to poor implementation quality and less than optimal outcomes (Howell, Lipsey, & Wilson, 2014). Providers and policymakers should work hand in hand with researchers to implement effective modifications to improve cultural competency throughout the justice system and treatment

services based on the results of rigorous experimental research.

Beyond that, providers and policymakers must be aware of both the unique needs and unique strengths of their individual communities. State-wide outcome changes may disregard key information related to the nuanced effects of policies and interventions on distinct, local populations. This includes an understanding of the complex interactions of social and environmental factors that result in disproportionate representation and in differential response to treatment. Often this information is best gathered through direct partnership with local stakeholders, experts, and service users, each of whom can offer valuable understanding regarding the most pressing issues and most plausible mechanisms of initiating solutions. Efforts such as Motes, Nurse, Kimbrough-Melton, McDonell, and Waters's 2012 qualitative survey of community informants demonstrate that attempts to remediate DMC in South Carolina had not met all of the locally identified problems. Furthermore, community members had specific recommendations for reducing local DMC based on their personal community experience and knowledge (Motes et al., 2012). A more nuanced understanding of context and individual backgrounds can provide vital insights into the wider experience of service recipients and inform the development of interventions that target appropriate and efficient mechanisms of change.

### **Future Recommendations for Research**

This article has identified a substantial gap in the juvenile justice literature. Although there are culturally adapted interventions being evaluated, the cultural components themselves are not evaluated in isolation but rather through state-level changes in recidivism after large-scale policy modifications/introductions. As a result, although most systems are aware of the need for cultural competence, limited research is being produced using methods with experimental control over confounds. It is important for future research to begin structuring program evaluations intended

to reduce DMC in a manner that reflects the comparison criteria put forth in this study (i.e., standard condition compared with culturally adapted standard condition). This will allow a more rigorous assessment of the cultural effectiveness of the program while permitting an appraisal of the adaptations used. Furthermore, a need for follow-up programs is highlighted to understand the long-term effects of the interventions. Extended follow-up and attention to overall trends in service use and service outcomes within the service population at large is the more effective method of directly studying DMC. Lastly, implementation of adaptations must be feasible, using resources currently available through the justice system.

Research can also be broadened with regard to targeted mechanisms of change as well as measured indicators of client experience. If practice and policy are to be effectively informed by stringent research, the literature must reflect the full state of the ongoing problems and the breadth of effects related to relevant reactive and proactive interventions. For instance, Mears et al. (2016) offer a guide for the future inquiry into minority representation, identifying differences (“unequal absolute amounts of racial or ethnic offending, arrests, convictions . . .,” p. 85), disproportionality (“racial or ethnic differences that are greater than what would be expected given the group population sizes . . .,” p. 85), and disparities (“any disproportionality attributable to overt or covert, or intended or unintended, discrimination against minorities,” p. 87) as distinct sources of information with distinct implications for practice and policy that should be measured at varying stages of justice contact, from offending to processing to sanctioning. The dynamics of DMC begin before engagement in juvenile justice services and continue through service delivery and sentencing. These preventive services play an important role in controlling DMC by preventing initial contact for those at risk and/or reducing the chance of recidivism. All attempts to systematically and continuously increase the quality and quantity of research inquiries will help support service

providers, policymakers, and other administrators in understanding and implementing programs that are competent for all populations and produce sustained benefits for all recipients, such as reduced DMC.

### Limitations

This study has some potential limitations. First, with respect to the research and reporting procedures, there is the ever-present possibility of publication bias that may occur with any review of published literature. Attempts have been made in this study to reduce such bias by collecting studies from popular published databases and grey literature/alternative resources as recommended by Littell and colleagues (2008). However, future studies can be strengthened by incorporating more databases, particularly grey literature sources, if resources allow. Second, due to the scarce number of articles found meeting the criteria required, evaluations of the individual cultural adaptations were not possible. And third, although the study criteria were aimed at identifying cultural adaptations on a global scale, only studies published in English were included, possibly limiting generalizations from this study to cultural efforts in English-speaking societies.

### Conclusion

Factors contributing to DMC are many and varied. In addition to systemic changes in policies and procedures, there is growing evidence of an increasing focus on culturally adapted prevention and intervention programs in both research and practice. Adapted programs in juvenile justice have been largely implemented two ways: through prevention of contact with authorities and through treatment programs to reduce recidivism. It can be argued both of these reduce DMC, though direct, rigorous testing remains sparse. Intervention programs specifically adapted for the populations at increased risk, particularly due to the compounding effects of ethnic status, the justice system, and recidivism, have attempted

to address these risk factors, but they have not been demonstrated to achieve more successful outcomes than mainstream treatment. Future endeavors in understanding and treating the ongoing disparities present in the juvenile justice system must be undertaken with a level of analytical depth, community engagement, and methodological rigor such that research, practice, and policy all produce knowledge, interventions, and overall justice systems that best meet the needs of minority populations.

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# Gender Differences in Prevalence of Internalizing and Externalizing Symptoms in a Justice-Referred Sample of Youth

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## Abstract

This study analyzed the mental and behavioral health profiles of male and female adolescents referred by justice authorities for intensive, home-based treatment. This study characterized the internalizing and externalizing symptoms reported in the sample by gender and examined correlations among symptoms. A sample of 421 youth completed a questionnaire about their mental and behavioral health, and their parents/caregivers completed a corresponding questionnaire about their child's mental and behavioral health. Females experienced more internalizing and externalizing symptoms compared to males, and according to both youth and caregiver reports, were more likely to experience clinical levels of these symptoms. Although adolescent females may receive referrals and treatment at

lower rates, they often experience elevated levels of depression, conduct problems, and other mental health difficulties compared to similarly high-risk males.

## Introduction

Adolescence can be a difficult time for young people because of significant biological, social, emotional, and cognitive development during this period (Giedd et al., 1999; Sisk & Foster, 2004; Steinberg, 2005). Many psychiatric disorders either begin or worsen during adolescence (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Paus, Keshavan, & Giedd, 2008), and evidence suggests that the development of these disorders might be different for females compared to males. For example, in normative samples, females tend to experience greater internalizing symptoms (such as anxiety or depression), compared to their

male counterparts, who instead exhibit greater externalizing symptoms (such as oppositional defiance and aggression, Costello et al., 2003; Ormel et al., 2005; Romano, Tremblay, Vitaro, Zoccolillo, & Pagani, 2001). Further, treatment rates in community samples tend to mirror these differences for females and males in adolescence and adulthood, as females are more likely to receive treatment for an experienced internalizing disorder, such as panic disorder, whereas males are more likely to receive treatment for an experienced externalizing disorder, such as attention deficit hyperactivity disorder (ADHD) (Mackenzie, Reynolds, Cairney, Streiner, & Sareen, 2012; Merikangas et al., 2011).

Within higher-risk samples of adolescents—for example, those in juvenile detention centers or in gangs—where levels of psychiatric symptoms are greater (National Center for Mental Health and Juvenile Justice, 2006; Pilowsky & Wu, 2006), there are fewer females, but they tend to surpass males in the severity of their symptomatology (Cauffman, Lexcen, Goldweber, Shulman, & Grisso, 2007; National Center for Mental Health and Juvenile Justice, 2006). For example, one study of youth detained in Cook County, IL, found that females had higher rates of internalizing disorders compared to males and similar rates of externalizing disorders (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002). These gender differences are particularly troublesome given studies of service utilization rates that show that females' internalizing and externalizing problems often go under-treated compared to those of their male counterparts (Burns et al., 2001; Chesney-Lind & Brown, 1999; Costello, Jian-ping, Sampson, Kessler, & Merikangas, 2014; Visser, Blumberg, Danielson, Bitsko, & Kogan, 2013). One study found that females have a greater willingness to use mental health services, whereas males report more stigma surrounding mental health treatment (Chandra & Minkovitz, 2006); other studies found no gender differences in service use (Burke, Mulvey, & Schubert, 2015; Kates, Gerber, & Casey, 2014; Leslie et al., 2005); and two studies found

that female offenders were more likely to report previous service use than male offenders (Abram, Paskar, Washburn, & Teplin, 2008; Lopez-Williams, Stoep, Kuo, & Stewart, 2006). There may even be different correlates to help-seeking behaviors in males and females, as one study found that aggression was positively correlated with service use for females, but being withdrawn was negatively correlated with service use for males (Kim, Lim, Chung, Noh, & Shin, 2014).

In normative samples, females are more likely to experience internalizing symptoms, such as anxiety and depression, than males (Costello et al., 2003; Dodge, Coie, & Lynam, 2006; Ormel et al., 2005; Romano et al., 2001). In addition, females often have higher rates of concurrent comorbidity, or the presence of more than one disorder, as well as greater temporal stability in their diagnoses compared to males (Costello et al., 2003). Some research suggests that differences in internalizing and externalizing symptoms between female and male adolescents are the outcomes of different risk factors and vulnerabilities for each gender (Hipwell & Loeber, 2006; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). Other studies show that, compared to men, women's mental health symptoms and disorders are more closely linked to experiences of trauma and abuse (Alisic et al., 2014; MacMillan et al., 2001). Even the consequences of these symptoms and behaviors might be different for men and women, given some research showing that conduct problems in adolescence predict different causes of mortality at age 65 for men and women (Maughan, Stafford, Shah, & Kuh, 2014). It is clear from this line of research that females and males differ in the types of mental health symptoms they experience as well as in their risk factors for various mental health issues and the consequences of these symptoms.

Beyond normative samples, there is evidence that female and male adolescents in higher-risk samples, such as foster care or detention centers, exhibit different patterns of mental health symptoms. In these higher-risk samples, there

tend to be fewer females than males. However, the females in these smaller groups tend to have greater levels of co-occurring internalizing and externalizing symptoms (Adams et al., 2013; Diamantopoulou, Verhulst, & van der Ende, 2011; Fazel, Doll, & Langstrom, 2008; Van Damme, Colins, & Vanderplasschen, 2014; Wasserman, McReynolds, Ko, Katz, & Carpenter, 2005) compared to the males in the larger groups in a phenomenon known as the “gender paradox” (Keenan, Loeber, & Green, 2000; Tiet, Wasserman, Loeber, McReynolds, & Miller, 2001). Overall, much of the work on mental health in juvenile justice samples comes from general detained samples (Fazel et al., 2008; Teplin et al., 2002). Less is known about the mental health profiles of youth whom the justice system identifies as having a need for mental health treatment, as no previous study has examined this issue. This gap is problematic and needs to be addressed because there is an increasing trend to serve youth—particularly those with mental health disorders (Cocozza & Skowrya, 2000)—in their communities rather than in detention centers (Mendel, 2007, 2011; The Annie E. Casey Foundation, 2013). Further, a better understanding of the mental health needs of these youth, who are diverted to evidence-based best practices interventions, can help treatment providers refine programs to target their needs (Howell, Lipsey, Wilson, & Howell, 2014; Lipsey, Howell, Kelly, Chapman, & Carver, 2010).

Because delinquent behavior is also less common in females (Mears, Ploeger, & Warr, 1998; Zheng & Cleveland, 2013), it might be that externalizing behaviors in females are simply linked to greater overall levels of individual and contextual risk factors, such as internalizing symptoms and exposure to violence and trauma (Flannery, Singer, & Wester, 2001; McCabe, Lansing, Garland, & Hough, 2002), or that female youth who enter the justice system are most likely to be those with more severe and pervasive problems that are more difficult to treat (Lederman, Dakof, Larrea, & Li, 2004). Females may also need to show more severe or frequent displays of externalizing

behavior before their behavior is addressed, leading to underestimates of aggression and delinquency in females (Delligatti, Akin-Little, & Little, 2003). For example, females in the juvenile court system are less likely to be formally processed compared to males (Poe-Yamagata & Butts, 1996) and are more likely to obtain pretrial release (Demuth & Steffensmeier, 2004). And although females are more likely to be detained for minor or status offenses, males are more likely to be detained for property and violent offenses (Espinosa & Sorensen, 2016; MacDonald & Chesney-Lind, 2001).

These explanations address potential gender variations that can account for the differences in how females and males come to the attention of the juvenile justice or child welfare systems. To be sure, it is also possible that females and males respond differently to system entry. Coming into contact with child welfare and justice systems might lead females and males to react with varying patterns of psychopathology symptoms and problem behaviors (Acoca, 1998; Hennessy, Ford, Majoney, Ko, & Siegfried, 2004). Still, despite significant effort in recent years (Zahn et al., 2010; Zahn, Hawkins, Chiancone, & Whitworth, 2008), the study of females’ delinquency and their associated externalizing behavior lags far behind the research on the same issues among males (Hoyt & Scherer, 1998; Pajer, 1998; Vermeiren, 2003; Viale-Val & Sylvester, 2014).

Although it is important for researchers and practitioners to understand the gender differences in psychopathology and behavior in these high-risk samples when determining the risk factors and treatment needs for adolescent females and males, it is also important to understand the relative severity of internalizing and externalizing symptoms *within* each gender. For example, one study of 18,607 juvenile detention center admissions found that females were more angry/irritable and anxious/depressed compared to males, and that females’ levels of anger/irritability and anxiety/depression were equally elevated to males’ levels of the same symptoms (Cauffman,

2004). One meta-analysis of studies with detained adolescents found that about a third of detained females had major depression, but half had conduct disorder (Fazel et al., 2008). It is also important to look at the specific symptoms females and males may be experiencing that could be categorized under the larger umbrella of internalizing or externalizing symptoms, as each of these dimensions encompass distinct pathologies. This type of fine-grained analysis will help inform researchers' understanding of the mental and behavioral health of female adolescents in a medium-risk sample with high mental health needs, which might in turn help clinicians and justice authorities to better target intervention efforts.

## Methods

### Participants

Four hundred and twenty-one adolescents (31% female;  $M$  age = 15.08 years,  $SD$  = 1.32, range = 11–18 years; 38% Black/African American, 18% Latino/Latina, 34% White, 10% other) participated in this study. All were referred for treatment with a nonprofit clinical services provider for intervention targeted to address serious problem behavior (i.e., Multisystemic Therapy [MST]; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). The adolescents resided in seven Eastern states and were referred for services by their local justice authorities (e.g., within specific counties or municipalities). Typically, intervention services were funded by local government contracts or Medicaid reimbursements. All youth were enrolled consecutively in treatment over a 13-month study period spanning from 2012 to 2013. Each adolescent's caregiver (92% of whom were parents) participated in his or her treatment. Sixty-eight percent of the adolescents belonged to single-parent headed families. Median family income was between \$20,000 and \$30,000, with a range of "under \$10,000" to "over \$100,000." Median highest caregiver education level was a high school diploma/general equivalency diploma (GED), with a range of "less than high

school" to "graduate degree, doctoral."

Demographic variables did not appear to differ significantly by the adolescents' gender. Females ( $M$  = 15.02) and males ( $M$  = 15.10) did not differ by age,  $t(419) = -0.53$ ,  $p = .599$ ,  $d = 0.05$ . They did not differ by race/ethnicity,  $\chi^2(3) = 3.62$ ,  $p = .306$ ,  $V = .09$ ; females were 38% White, 32% Black/African American, 18% Latina, and 12% other; males were 32% White, 38% Black/African American, 17% Latino, and 13% other. Females (65%) and males (69%) were equally likely to come from a single parent household,  $\chi^2(1) = 0.77$ ,  $p = .380$ ,  $V = .04$ . Their caregivers did not differ in age,  $t(397) = 1.06$ ,  $p = .288$ ,  $d = 0.11$  ( $M$  age = 42.36 for females' and 41.72 for males' caregivers); income,  $\chi^2(10) = 7.49$ ,  $p = .678$ ,  $V = .14$  (52% of females' and 46% of males' caregivers had a household income of \$20,000 or less); or education,  $\chi^2(7) = 7.62$ ,  $p = .367$ ,  $V = .14$  (52% of females' and 45% of males' caregivers had at least some college education).

### Measures

**Internalizing Symptoms.** The adolescents completed the Youth Self Report (YSR) to assess their internalizing symptoms; caregivers completed the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) to assess their perceptions of the youth in their care. These are rater-specific versions of a well-established standardized clinical scale that rates and measures emotional and behavioral symptoms; the scales discriminate clinical from nonclinical samples and are normed for use with youth in our sample's age range. In addition to providing an overall assessment of internalizing symptoms, the YSR and CBCL also include three scales oriented to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) to assess internalizing symptoms: the 13-item Affective Problems scale (e.g., "There is very little that I enjoy"; Cronbach's  $\alpha = 0.84$  for YSR and CBCL); the 6-item Anxiety Problems scale (e.g., "I'm too dependent on adults";  $\alpha = 0.67$  for YSR and 0.72 for CBCL); and the 7-item Somatic Problems scale (e.g., headaches without known medical cause;  $\alpha = 0.75$  for YSR and CBCL). All

items refer to a timeframe of “now or within the past 6 months,” and participants respond on a 3-point scale from 0 (“Not true”) to 2 (“Very true or often true”). The only difference between the YSR and the CBCL is the item wording (e.g., “I act too young for my age” on the YSR, compared to “Acts too young for his/her age” on the CBCL).

**Externalizing symptoms.** The YSR and CBCL also measured the adolescents’ externalizing problems. In addition to providing an overall assessment of externalizing symptoms, the YSR and CBCL include the following three DSM-oriented scales: the 7-item Attention Deficit/Hyperactivity Problems scale (e.g., “I fail to finish things that I start”;  $\alpha = 0.77$  for YSR and 0.84 for CBCL); the 5-item Oppositional Defiant Problems scale (e.g., “I argue a lot”;  $\alpha = 0.70$  for YSR and 0.86 for CBCL); and the 15-item Conduct Problems scale (e.g., “I am mean to others”;  $\alpha = 0.83$  for YSR and 0.91 for CBCL). The timeframe and item responses are identical to those for the internalizing DSM scales.

### Procedure

The host agency and the university institutional review board overseeing the project reviewed and approved all procedures. Data on program participation and completion rates can be found in Boxer, Veysey, Ostermann, and Kubik (2015). Caregivers provided informed consent to program participation for underage children and themselves, and youth who were 18 provided informed consent. Both youth and their caregivers completed survey measures (including the YSR and CBCL) with the clinician during intake. The treatment agency then transmitted the data anonymously to us via scanned and e-mailed or faxed survey images. We then extracted clinical record data and coded them anonymously prior to inclusion in analysis data sets.

### Analysis Plan

To understand how various symptoms differ both between and within genders, we conducted a profile analysis (Tabachnick & Fidell, 2012). The

profile analysis allowed us to test whether adolescent males and females experienced different levels of symptoms overall. We were also able to explore whether symptomatology patterns (e.g., greater externalizing than internalizing symptoms) were different for adolescent males and adolescent females. In this case, a profile consisted of the pattern of symptoms across three internalizing and three externalizing disorder scales; the corresponding profile plot had the different scales along the x-axis and scale scores on the y-axis.

As part of the profile analysis, we tested three hypotheses: (a) Were the profiles parallel? (b) If they were parallel, were they flat? and (c) Were the profiles’ levels different? The parallel test essentially asked whether the difference in slopes was equal to zero, and confirmed that adolescent males and females in our sample experienced a similar pattern of symptoms. The flatness test was only relevant if the parallel test was confirmed (if the slopes were not equal, then they couldn’t both be flat) and essentially asked whether the slopes themselves were both equal to zero. The flatness test informed us whether males and females were experiencing similar levels of symptoms across different syndrome scales (e.g., they were just as likely to experience high levels of internalizing symptoms as externalizing symptoms). Finally, the levels or difference test essentially collapsed mean scores across all six scales and asked whether the total means were different, which would tell us whether males and females were experiencing different levels of overall symptoms. The benefit of using profile analysis to test for six simultaneous outcomes across groups was that it allowed for the examination of group profiles over a variety of symptoms and disorders rather than an examination of each outcome piecemeal. In addition, the tests of parallelism, flatness, and levels were designed to reveal meaningful patterns in the data.

Table 1. Descriptive Statistics and Bivariate Correlations between Continuous Study Variables with Pairwise Deletion

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age		-.08	-.04	-.06	-.07	-.03	.03	.08	-.02	.09	-.11	-.11	-.06
2. YR Affective	-.07		.64***	.52***	.54***	.49***	.54***	.34***	.15*	.25***	.21***	.16*	.17**
3. YR Anxiety	-.01	.66***		.40***	.47***	.40***	.42***	.18**	.18**	.16*	.16**	.05	.05
4. YR Somatic	-.17	.50***	.25***		.30***	.24***	.30***	.16*	.03	.33***	.13*	.09	.08
5. YR ADHD	-.09	.57***	.56***	.35***		.63***	.65***	.27***	.19**	.13*	.38***	.20***	.21***
6. YR ODD	-.01	.45***	.36***	.17	.53***		.73***	.32***	.19**	.09	.32***	.41***	.35***
7. YR CD	-.16	.49***	.35***	.20*	.53***	.70***		.28***	.15*	.17**	.30***	.29***	.33***
8. PR Affective	-.12	.46***	.31**	.37***	.37***	.36***	.35***		.59***	.46***	.50***	.48***	.49***
9. PR Anxiety	-.26**	.34***	.25*	.24*	.23*	.23*	.23*	.65***		.45***	.48***	.38***	.36***
10. PR Somatic	-.11	.24*	.20*	.44***	.17	-.07	-.10	.41***	.39***		.24***	.15*	.17***
11. PR ADHD	-.26**	.11	.06**	.14	.31**	.23*	.31**	.38***	.48***	.24**		.65***	.67***
12. PR ODD	-.31***	.13	.01	.12	.13	.21*	.27**	.40***	.36***	.17	.62***		.77***
13. PR CD	-.10	.13	-.04	.12	.11	.24*	.41***	.43***	.38***	.18	.59***	.74***	
Mean	15.07	4.86	2.25	1.82	4.45	4.37	7.11	4.40	2.07	1.60	6.19	5.57	10.86
SD	1.34	4.36	2.31	2.38	3.57	2.63	5.27	4.28	2.16	2.21	3.78	2.87	7.05
Min	11	0	0	0	0	0	0	0	0	0	0	0	0
Max	18	19	11	12	14	10	25	20	10	12	14	10	31

Note. \* $p < 0.5$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . YR = youth report; PR = parent or caregiver report; ADHD = attention deficit hyperactivity disorder; ODD = oppositional defiant disorder; CD = conduct disorder. Correlations among female participants ( $n_s = 103-125$ ) are below the diagonal; correlations among male participants ( $n_s = 251-274$ ) are above the diagonal.

## Results

### Descriptive Data and Correlations

Table 1 displays bivariate correlations by gender; means; standard deviations; and minimum and maximum values of raw, unstandardized, continuous study variables to display relationships between study variables and how they varied by gender. Correlations ranged in effect size from weak to strong and appeared to be stronger within each informant (e.g., self-reported outcomes were correlated more strongly to each other than to caregiver-reported outcomes) and within the internalizing or externalizing syndromes (e.g., the affective disorder scale generally correlated more strongly to the anxiety disorder scale than to the conduct disorder scale). Age was uncorrelated with most outcome variables.

For more information on symptoms by gender, Figure 1 presents means of internalizing and

Figure 1. Means of internalizing and externalizing scales by gender and informant.

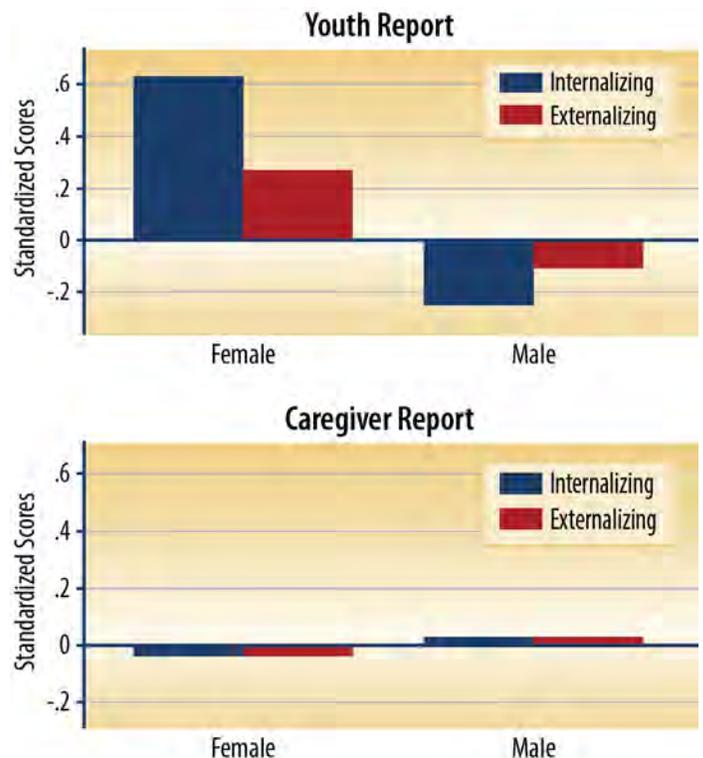


Table 2. Rates of Borderline or Clinical Symptoms by Gender

	Male	Female
<b>YSR (youth report)</b>		
% on any internalizing scale	9.00%	18.18%**
% on all three internalizing scales	0.69%	0.00%
% on any externalizing scale	28.03%	33.33%
% on all three externalizing scales	0.00%	0.00%
<b>CBCL (caregiver report)</b>		
% on any internalizing scale	19.03%	36.36%***
% on all three internalizing scales	2.77%	3.79%
% on any externalizing scale	39.45%	61.36%***
% on all three externalizing scales	9.69%	16.67%*

Note. YSR = Youth Self Report; CBCL = Child Behavior Checklist. Significance for z-tests testing the proportion of each variable across genders is reported. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Borderline or clinical scores are defined as a T score of 63 or greater on any scale.

externalizing symptoms by gender and report. Gender differences were much more pronounced for youth reports than for caregiver reports. Further, females self-reported significantly more internalizing,  $t(163.63) = 7.63, p < .001, d = 0.96$ , and externalizing,  $t(383) = 3.45, p < .001, d = 0.39$ , symptoms than their male counterparts, whereas no significant differences by gender existed for caregiver report. Table 2 presents rates of borderline or clinical symptom levels by gender along with z-test results. When assessing clinical levels of symptoms, a T score of 63 or above on the YSR or CBCL scales denoted a borderline level, whereas a T score of 70 or above indicated a clinical level, based on empirical evidence that these levels were associated with elevated levels of symptoms (Achenbach & Rescorla, 2001). Therefore, youth with a T score of 63 or higher on these measures were experiencing either borderline ( $63 < T < 70$ ) or clinical ( $T > 70$ ) symptoms. Based on that measure, females were disproportionately experiencing borderline or clinical levels of internalizing symptoms on both the youth ( $z = 2.70, p = .007, d = 0.29$ ) and caregiver ( $z = 3.84, p < .001, d = 0.41$ ) reports and were more likely to have borderline or clinical levels of externalizing symptoms according to caregiver report only ( $z = 4.18, p < 0.001, d = 0.45$ ). In addition, females were more likely than males to

be experiencing elevated symptom levels across both internalizing and externalizing symptoms. For females, borderline or clinical internalizing symptoms on either report were associated with an odds ratio of 12.83 ( $p = .002$ ) for borderline or clinical externalizing symptoms, and vice versa, compared to males' odds ratio of 4.41 ( $p < .001$ ).

### Cross-Informant Agreement

Paired t-tests indicated that caregivers tended to disagree more with the females' self reports than with the males' self reports when reporting symptoms. Compared to their caregivers, females reported more symptoms of internalizing disorders and fewer symptoms of externalizing disorders. Females reported higher levels of affective disorder symptoms,  $t(103) = 3.00, p = .003, d = 0.29$ , and anxiety symptoms,  $t(103) = 3.95, p < .001, d = 0.39$ , but lower levels of oppositional defiant disorder (ODD) symptoms,  $t(103) = -2.63, p = .010, d = 0.26$ , and conduct disorder (CD) symptoms,  $t(103) = -6.93, p < .001, d = 0.68$ . Females and their caregivers agreed on the somatic and ADHD scales. Males agreed with their caregivers on internalizing syndromes but under-reported externalizing symptoms compared to their caregivers on the ADHD scale,  $t(261) = -4.34, p < .001, d = 0.27$ ; the ODD scale,  $t(261) = -6.96, p < .001, d = -0.43$ ; and the CD scale,  $t(261) = -7.90, p < .001, d = 0.49$ . Therefore, relative to the adolescents, caregivers over-reported externalizing symptoms for both genders but only under-reported internalizing symptoms for females.

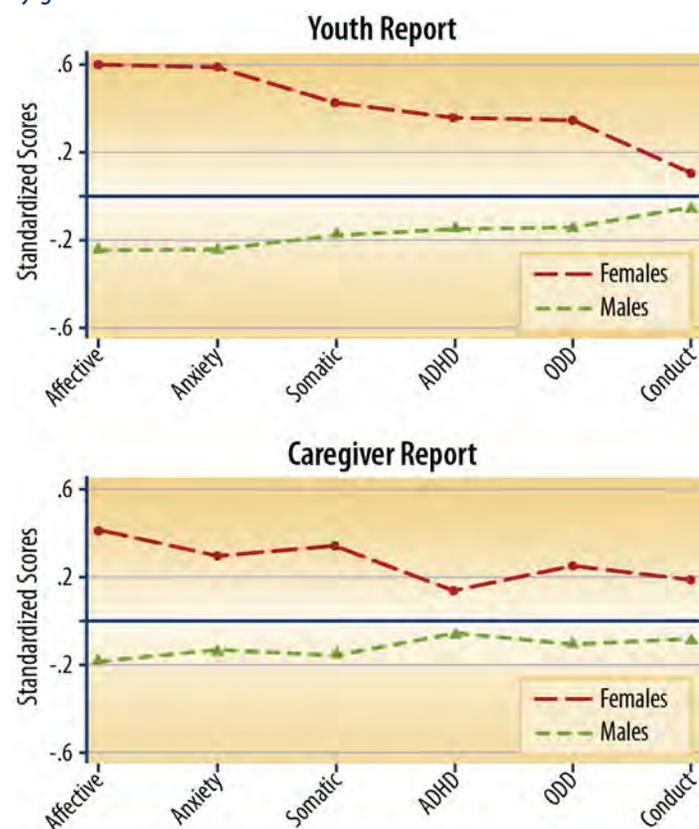
Given that the disagreement between caregivers and youth might be informative, we further analyzed the discrepancy between reports. First we created discrepancy scores by subtracting the caregiver report from the youth report for each scale, so that positive scores indicated under-reporting of symptoms by caregivers, whereas negative scores indicated caregivers' over-reporting of symptoms compared to youth reports. T-tests of each of these scores by gender indicated that caregivers' reports disagreed with

females' self-reports more than males' for affective disorder,  $t(160.28) = 2.50, p = .013, d = 0.32$ ; anxiety disorder,  $t(164.19) = 3.88, p < .001, d = 0.48$ ; and ADHD,  $t(364) = 2.79, p = .006, d = 0.32$ ; but not for somatic disorder, ODD, or CD. Discrepancies were such that caregivers under-reported symptoms compared to females but not males. This difference in cross-informant agreement by gender suggests that profile analyses should be conducted separately by youth and caregiver report rather than trying to combine the two reports or use only one.

### Profile Analyses

Figure 2 depicts the results of the gender profile analyses for both youth and caregiver report, and we outline the youth- and caregiver-reported outcomes separately in the text below. All outcome variables were standardized prior to analysis. Because profile analysis uses listwise deletion to handle missing data, the sample size was reduced

Figure 2. Profile plots of youth- and caregiver-report DSM scales by gender.



to 375 for youth report and 392 for caregiver report. For youth report, the initial multivariate analysis of variance (MANOVA) conducted with the six youth-reported DSM scales as outcome variables and gender as the between-subjects variable was significant,  $F(6, 368) = 17.00, p < .001, \text{partial } \eta^2 = .22$ . Profile analysis indicated that the profiles were not parallel,  $F(5, 369) = 9.75, p < .001, \text{partial } \eta^2 = .12$ , making the test of flatness irrelevant for this analysis. For the levels test, scores computed by averaging over all subscales differed significantly by gender,  $F(1, 373) = 48.85, p < .001, \eta^2 = .11$ .

A series of one-way analyses of variance (ANOVAs) evaluated differences between the genders for each scale, with each scale score as the outcome variable and gender as the between-subjects variable. These ANOVAs indicated that females scored significantly higher than males on the affective disorder scale,  $F(1, 373) = 65.36, p < .001, \eta^2 = .15$ ; the anxiety disorder scale,  $F(1, 373) = 60.61, p < .001, \eta^2 = .14$ ; the somatic disorder scale,  $F(1, 373) = 30.31, p < .001, \eta^2 = .07$ ; the ADHD scale,  $F(1, 373) = 20.84, p < .001, \eta^2 = .05$ ; and the ODD scale,  $F(1, 373) = 19.34, p < .001, \eta^2 = .05$ . However, males and females did not differ on the CD scale,  $F(1, 373) = 1.53, p = .217, \eta^2 = .00$ . Finally, paired  $t$ -tests analyzed differences between internalizing and externalizing symptoms for each gender according to youth report. Based on these analyses, females self-reported more internalizing than externalizing symptoms,  $t(110) = 4.10, p < .001, d = 0.38$ , whereas the opposite pattern held true for males,  $t(273) = -2.98, p = .003, d = 0.22$ .

For caregiver reports, the initial MANOVA with the six caregiver-reported DSM scales as outcome variables and gender as the between-subjects variable was significant,  $F(6, 385) = 6.87, p < .001, \text{partial } \eta^2 = .10$ . Profile analysis indicated that the profiles were not parallel,  $F(5, 386) = 2.64, p = .023, \text{partial } \eta^2 = .03$ , again rendering the test of flatness irrelevant for this analysis. The levels test revealed significant differences between genders in profiles averaged across all subscales,

$F(1, 390) = 25.21, p < .001$ , partial  $\eta^2 = .06$ . One-way ANOVAs indicated that females scored significantly higher than males on the affective disorder scale,  $F(1, 390) = 31.28, p < .001, \eta^2 = .07$ ; the anxiety disorder scale,  $F(1, 390) = 17.92, p < .001, \eta^2 = .04$ ; the somatic disorder scale,  $F(1, 390) = 20.73, p < .001, \eta^2 = .05$ ; the ODD scale,  $F(1, 390) = 11.32, p < .001, \eta^2 = .03$ ; and the CD scale,  $F(1, 390) = 6.65, p = .010, \eta^2 = .02$ . However, females and males did not differ on the ADHD scale. Paired  $t$ -tests indicated that caregivers reported more internalizing than externalizing symptoms for females,  $t(124) = 2.41, p = .018, d = 0.14$ , but they reported similar rates of internalizing and externalizing symptoms for males. Thus, females scored significantly higher on all internalizing and two out of three externalizing scales for both youth and caregiver reports. Effect sizes for the caregiver-reported outcomes appeared to be generally smaller than for the self-reported outcomes, and the externalizing scales tended to have smaller effect sizes than the internalizing scales.

## Discussion

In the current study, we interviewed a sample of 132 female and 289 male adolescents and their caregivers whom justice authorities referred to an evidence-based intervention, MST. Profile analyses by gender indicated that females had significantly greater internalizing and externalizing symptoms than males for both youth and caregiver reports. In addition, a significantly greater proportion of females self-reported clinical levels of internalizing symptoms, and a significantly greater proportion of females' caregivers reported clinical levels of internalizing and externalizing symptoms. Finally, females were more likely than males to have elevated symptoms across both internalizing and externalizing syndromes.

In the current study, we used profile analysis, DSM-oriented scales, and T-score cutoffs to examine the self- and caregiver-reported mental health profiles of male and female adolescents rather than simply looking at mean scores on scale items. Figure 1 indicates that, although females had

more symptoms than males overall, females were relatively lower on externalizing symptoms, whereas males were relatively lower on the internalizing symptoms. Knowing about these within-gender differences in adolescents' mental and behavioral health profiles can help clinicians and other staff members prioritize treatment goals for them.

Based on cutoff T-scores that indicated borderline and clinical levels of symptomatology, females were twice as likely as males to self-report clinical levels on any of the internalizing scales, and females' caregivers were more likely than males' caregivers to report that their child was experiencing clinical levels on any of the internalizing or externalizing scales. This is important because it indicates that although justice authorities might refer smaller numbers of females, given the large male-to-female ratio in the current sample, a greater proportion of referred females may be experiencing severe internalizing and externalizing symptoms, compared to referred males. It also helps provide some context and reference for higher mean scores on the DSM scales; not only do female adolescents score higher on these scales but their scores also are more likely to cross the threshold into clinical severity. Finally, it is significant to note that for females, experiencing elevated internalizing symptoms is associated with increased odds of experiencing elevated externalizing symptoms (roughly 12 times more likely) compared to males (roughly 3 times more likely).

The females in our sample reported not only greater levels of symptoms compared to the males but also greater discrepancies in symptom reports across informants. Specifically, although caregivers over-reported externalizing symptoms compared to the adolescents' self reports for both genders, caregivers tended to only under-report internalizing symptoms for females. This is an interesting discrepancy and one that requires further study, given that (a) male adolescents tend to disagree more with caregivers in community and clinical samples (Salbach-Andrae, Klinkowski, Lenz, & Lehmkuhl, 2009), and (b) adolescents tend to be more accurate in reporting internalizing

symptoms, whereas caregiver reports are more accurate for externalizing symptoms (Frick, Barry, & Kamphaus, 2010). It is possible that females' symptoms of depression and anxiety are less visible than those of males, and therefore less reported. However, caregivers' reports could also be biased because of societal expectations regarding gender and internalizing syndromes such as depression and anxiety or because of different prevalence rates of these syndromes by gender (Chaplin & Aldao, 2013; Hankin et al., 1998). Caregivers might be more likely to attribute females' behavior to such syndromes compared to males' behavior because of widespread beliefs that females are more prone to anxiety and depression.

This study was limited in a few ways. For example, due to the cross-sectional, correlational nature of these data, it is unclear what specific causal mechanisms lead to gender differences in symptoms or how other possible gender differences (e.g., differences in exposure to neighborhood violence, differences in parental monitoring) may influence this relationship. It is also important to note that youth in this sample were of a particular risk level, having been identified by justice authorities as needing mental health services, but they were not necessarily high-level offenders (e.g., they were not detained and not all had violent or felony offenses). Thus, results might not fully generalize to populations of youth in the community, more high-level offender populations, or populations of juvenile offenders who are not identified as needing mental health services. Still, consistent with a general developmental psychopathology approach (e.g., Achenbach, 1982; Boxer, 2007), we believe that inferences about adolescents at this particular risk level can help inform broader conclusions about a fuller spectrum of risk in the adolescent population. Finally, although self- and caregiver-report surveys are often used in similar studies examining internalizing and externalizing symptoms (Cauffman et al., 2007; Conners et al., 1997; Ormel et al., 2005; Pilowsky & Wu, 2006), they might not

be sensitive enough to have as much diagnostic utility as a clinical interview (Eaton, Neufeld, Chen, & Cai, 2000).

## Conclusion

Despite these limitations, the current study adds to the literature base in several ways. It helps to document the gender disparity in youth-caregiver agreement by demonstrating that the caregivers of females but not caregivers of males tend to under-report their charges' mental health symptoms compared to the adolescents' self-report. It is possible that caregivers under-report symptoms for females' internalizing scales because these symptoms (e.g., anxiety, depression) are less visible to others and are therefore more likely to go undetected. It is also possible that caregivers under-report ADHD symptoms for females because ADHD is more commonly diagnosed among males (Willcutt, 2012) and therefore may not be perceived as a disorder to be equally applied to females (Bruchmüller, Margraf, & Schneider, 2012). This study also finds that adolescent females in this sample experienced both more internalizing and externalizing symptoms compared to the males; internalizing symptoms appeared to be particularly heightened for these females, and the relative severity of internalizing symptoms compared to externalizing symptoms was more stark for youth than for caregiver report. These findings, despite a lack of difference in demographic characteristics (e.g., family structure, household income) between males and females in this sample, point to the different nature of adolescent females' experiences and problems compared to those of young males and are in line with research on justice-involved females' mental health needs compared to males' (Adams et al., 2013; Diamantopoulou et al., 2011; Fazel et al., 2008; Van Damme et al., 2014; Wasserman et al., 2005).

This study has some important implications for research and clinical practice regarding female and male adolescents who may be involved in the justice system. One of the ways this information

is helpful is to inform clinicians of possible base rates for different disorders in these types of at-risk populations. For example, although clinicians may be hesitant to apply a diagnosis of conduct disorder to females, given that it is a typically male disorder (Maughan, Rowe, Messer, Goodman, & Meltzer, 2004), knowing that the base rate for females is higher in justice-referred samples compared to community samples (Teplin et al., 2002) might help to inform such diagnoses. It may also help to know that internalizing symptoms often accompany these externalizing problems for females, as youth with comorbid problems likely present a different clinical picture than those with only one type of symptom. Finally, as our study shows that youth and caregiver reports of internalizing and externalizing symptoms differ more for females than they do for males, clinical and empirical work in this area should be wary of relying solely on parent report of symptoms. Future research in this area might help determine the different causes and correlates of females' and males' symptoms and problem behaviors as well as how those factors combine to predict mental and behavioral health.

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# Masculinity Is Not Pathology: An Exploration of Masculinity Among Juvenile Sexual Abusers and General Delinquents

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*Keywords: masculinity, masculine subtypes, juvenile sexual abuser, delinquency, youth violence*

## Abstract

The endorsement of masculine beliefs has long been correlated to sexual and nonsexual violence in adult males (Lisak & Roth, 1990; Malamuth, Linz, Heavey, Barnes, & Acker, 1995), and more recently in male youth (Hunter, Figueredo, & Malamuth, 2010; Knight & Sims-Knight, 2003). However, associations with masculinity in these studies are often confusing insofar as masculinity is not a standalone construct but conflated into subtypes that describe traits commonly observed in personality disorders and psychopathy. In a sample of incarcerated male juvenile sexual abusers and general delinquents, traditional masculine beliefs were examined in absence of indicators for psychopathy and other antisocial traits. The sample was then subdivided into four, theoretically constructed, mutually exclusive groups based on violence type. Masculinity was measured in each of the four groups to assess group differences. As hypothesized, no group differences are observed. Further research is needed to both improve understanding of masculinity among antisocial youth and develop new indicators for predicting antisocial behavior.

## Introduction

The problem of sexual and nonsexual assault committed by youth has elicited great concern from researchers (Haegerich, Gorman-Smith, Wiebe, & Yonas, 2010; Liverso, Bielby, & Hoelter, 2015; Nisbet, Wilson, & Smallbone, 2004). In 2013, youth represented approximately 9% of those arrested for aggravated assault, 15% of rape arrestees, and 18% of those arrested for sexual crimes other than rape and prostitution in the United States (U.S. Department of Justice, 2014). Violent offending is distinct from other types of delinquency in that the youth uses force upon a victim, whether force is the object of the offense (e.g., assault) or the means to an end (e.g., robbery). Sexual assault is a specific behavior that involves touching another person in a sexual way without consent; touching an inappropriately aged person in a sexual way; or touching in a sexual way a person who cannot give consent due to power, age, or other differences in power between the abuser and victim. Violent youth tend to be more versatile and frequent in their offenses than nonviolent delinquents (Loeber & Farrington, 2000; Mulder, Brand, Bullens, Van, & Van Marle, 2010). In a Dutch study of youth sexual abusers and general delinquents, sexual abusers were found to have the highest

levels of both violent and nonviolent criminality among delinquent youths; they began their delinquent behaviors at a younger age and continued them into adolescence and young adulthood (Bullens, van Wijk, & Mali, 2006).

### Background, Significance Violence, and Being Male

More than 80% of youths arrested for violent crime are males. When isolating for sexual crimes other than prostitution and rape, males represent 90% of those arrested. When isolating further for rape, 98% are male (Puzzanchera, 2014). Given these statistics, it should come as no surprise that the Office of Surgeon General (2001) has identified being born male among the top five risk factors for committing a serious criminal offense. However, it remains unclear what it is about being born male that might account for this. Are the factors associated with both being male and the commission of serious crimes purely biological, or is there something about the way males are socialized that contributes to their behaviors?

### Masculinity Among Violent Boys and Men

The concept of masculinity is understood, both biologically and socially, as characteristics that pertain to being male and not female. Biologically, the concept is sometimes clear, as masculine traits among adolescents and adults are often driven by hormones. For example, the presence of a beard is a clear expression of masculinity, as robust facial hair, which is promoted by testosterone, tends to grow on typical adult males and is uncommon among typical adult females. However, gender is on a continuum that shifts as children become adolescents and adults (Brownlie, 2006), making it less clear how the socialization process of being male is operationalized and how masculine beliefs are understood. In the epidemiology of violent male youth, some researchers have found the presence of masculine beliefs by conflating deviant mental health pathology and negative character traits with masculinity but offer little explanation for what this relationship is exactly (Hunter, Figueredo, Malamuth, & Becker, 2003; Knight &

Sims-Knight, 2003; Reilly, Muldoon, & Byrne, 2004; Zakireh, Ronis, & Knight, 2008). The authors of one study reported that a higher score on a traditional masculinity scale had a small but significant impact on the commission of nonsexual violence among youth sexual abusers (Brown & Burton, 2010).

However, the majority of youth in their sample also reported little or no attachment whatsoever to traditional gender roles, making it difficult to interpret this finding. To better understand masculinity's role in violent male youth behavior, it is important to tease apart violent behavior, which is clearly more prevalent among males. Due to the lack of empirical studies that have explored masculinity in the etiology of delinquent and sexually abusive youth, studies from the adult literature are included (and identified) in the following review.

### Masculine Subtypes

The concept of *hypermasculinity* was introduced by Mosher and Sirkin (1984) and is described as a perceived threat to control, respect, and power. Now more than 30 years old, it is a well understood construct and found to correlate with the commission of sexual and nonsexual violence among adult males (Larkin, 2011; Lisak & Beszterczey, 2007; Lisak, Hopper, & Song, 1996; Mosher & Anderson, 1986; Parrott & Zeichner, 2003; Peralta, Tuttle, & Steele, 2010; Schwartz, Waldo, & Daniel, 2005). The prefix *hyper* is derived from the Greek *huper*, meaning "over or beyond." In English, it is used to describe that which is excessive. However, in the context of these studies, it is not clear what is excessively masculine about the perceived threat to control, respect, and power. Does *hypermasculinity* suggest that excessive adherence to traditional masculine mores might result in impulse control problems, thereby making a male more likely to commit an act of violence? Or does excessive adherence to the need for power and control make a male more likely to commit an act of violence, which makes him more traditionally masculine?

Some researchers measuring the concept of masculinity among violent youth and adults

have described several masculine subtypes (e.g., hostile masculinity, negative masculinity, egotistical-antagonistic masculinity), with little or no discussion regarding the exact connection of their chosen modifiers to masculinity as a standalone construct (Hunter et al., 2003; Knight & Sims-Knight, 2003; Malamuth & Malamuth, 1999). Further, Malamuth and Malamuth (1999) have described *hostile masculinity* as a constellation of characteristics containing “two inter-related components: (a) an insecure, defensive, hypersensitive, suspicious and hostile orientation, particularly toward women; and (b) gratification from controlling or dominating women” (p. 175). Given this definition, it is unsurprising that, in their germinal study of a community sample of young adult males, Malamuth et al. (1995) found *hostile masculinity* to predict male sexual aggression toward females. Unclear, however, is how exactly masculinity came to serve as a proxy for this combination of characteristics, when well-known gender-neutral constructs already existed. For example, the hatred, dislike, or mistrust of women is also known as *misogyny*, and the enjoyment in being cruel is a common understanding of *sadism*. The connection of these concepts to maleness or masculinity is not explained. To compare, Hanson and Harris (2000) found that hostility, along with various kinds of negative affects (e.g., anger, anxiety, depression, low self-esteem), contributed to sexual aggression in some adult males. In a subsequent study (2001), these authors found that negative attitudes, intimacy deficits, and problems with self-regulation were also indicators for sexual aggression. Their findings mapped closely with what others (Hunter et al. 2003; Malamuth et al., 1995) also referred to as indicators for sexual aggression but termed *hostile masculinity* (e.g., insecurity, defensiveness, hypersensitivity, and distrustful attitudes). In the Hanson and Harris (2000, 2001) studies, no connection to masculinity was made.

Among adolescent males, Hunter (2004) found no significant relationship between *hostile masculinity* and sexual aggression or general delinquency.

However, in a later path analysis, he and others found a modest mediating effect for *hostile masculinity* on sexual aggression among some adolescent males (Hunter, Figueredo, & Malamuth 2010). Interesting in their analysis, moreover, was that the largest effect-size in the model was that of psychopathic and antagonistic attitudes on *hostile masculinity*, which more than doubled the effect-sizes of nearly all 16 significant relationships found in the analysis. This makes sense, as the relationship between psychopathic traits and sexual aggression has been robustly supported in adult and adolescent male populations (Caldwell, Skeem, Salekin, & Van Rybroek, 2006; Edens & Vincent, 2008; Hall, Benning, & Patrick, 2004; Skeem, Johansson, Andershed, Kerr, & Loudon, 2007; Woodworth & Porter, 2002). Among adolescent male sexual abusers specifically, antisocial traits have been shown as one of the strongest predictors for ongoing sexual aggression (Butler & Seto, 2002; Carpentier, Leclerc, & Proulx, 2011; McCann & Lussier, 2008; Veneziano & Veneziano, 2002). Furthermore, rape-supportive attitudes have long been correlated with both sexual and nonsexual violence in adult males (Lisak & Roth, 1990; Roberts, Doren, & Thornton, 2002; Sullivan & Mosher, 1990). Therefore, when hostility is combined with misogynistic and sadistic attitudes (called *hostile masculinity* by Hunter and colleagues [2010]), its mediating role in the relationship between psychopathic and antagonistic attitudes and adolescent sexual abuse is logical. However, although adding confirmation to previous findings connecting antisocial traits, misogyny, and sadistic attitudes among some youth sexual abusers, it remains unclear how masculinity fits into the discussion.

Another masculinity subtype that has been used to explore adolescent male delinquency and sexual aggression is *egocentric-antagonistic masculinity*. Found to predict general delinquency among some young males (Hunter et al., 2003; Rowe, Vazsonyi, & Figueredo, 1997), it is described as competitive male dominance over other males through aggressively acquiring more female

sexual partners/conquests than one's peers. It is logical that aggressively seeking female sexual partners in competition with other males may be related to antagonism and that objectifying females as sexual trophies can be understood as egocentric. Yet once again, researchers have not sufficiently explained the connection to masculinity, leaving a gap in understanding what it is about gender that informs this behavior. As with other masculine subtypes studied, this suggests that the relationship of masculinity to sexual and nonsexual violence needs further exploration, particularly given that sexually abusive youth have expressed little to no opinion on how they feel about traditional gender stereotypes, regardless of their nonsexually violent behavior (Brown & Burton, 2010).

### Purpose of the Current Study

The purpose of this study was to explore the relationship of traditional masculine beliefs among subgroups of violent and nonviolent youths, including youth sexual abusers and general delinquents. In a sample of male youth sexual abusers and general delinquents (no sexually abusive behaviors), traditional masculine beliefs were examined, including gender assignment as well as attitudes in a more general sense (e.g., status, power, libido), rather than aggression against women, negative and hostile beliefs about women, or psychopathic traits. As previously reviewed, some studies of sexually abusive and nonsexually violent adult and adolescent males have found a relationship between masculine subtypes and the degree of deviant behavior. Therefore, the sample was subdivided into four theoretically constructed groups based on violence type: 1) sexual abusers of peers and/or adults (peer/adult victims), 2) sexual abusers of children only (child victims only), 3) nonsexually abusive violent juvenile delinquents (violent juvenile delinquents), and 4) nonsexually abusive nonviolent juvenile delinquents (nonviolent juvenile delinquents). These groups are not necessarily hierarchical, and no respondent was included

in more than one category. If a person sexually abused both children and peers, he was assigned to Group 1, as he was believed to be more indiscriminate in his offenses. As young males with peer or adult victims have been found to be more violent than young males who chose child victims only, this is consistent with findings among both male youth and adults (Hart-Kerkhoffs, Doreleijers, Jansen, van Wijk, & Bullens, 2009; Hendriks & Bijleveld, 2004). Based on the literature review, there is no evidence that the endorsement of traditional masculine beliefs in absence of antisocial attitudes and/or mental health pathology significantly impacts an adolescent male's propensity for violence. Therefore, it was hypothesized that there would be no group differences.

### Methods

#### Sample

Confidential data were collected from sexually abusive and nonsexually abusive delinquent youth in six residential facilities in a midwestern state. The original sample comprised 331 juvenile sexual abusers (JSAs) and 171 adolescent males incarcerated for other crimes (juvenile delinquents). Youths were age 16.63 years ( $SD = 1.53$ ) and in the 10th grade ( $SD = 1.52$  grades). There were no differences between JSAs and juvenile delinquents based on age or grade. However, JSAs were more likely to be White, whereas the delinquents were more likely to be Black ( $\chi^2 = 39.59$ ,  $df = 4$ ,  $p < .001$ ).

For hypothesis testing, the youth ( $N = 378$ ) were placed into four categories: 1) peer/adult victims (those who sexually abused peers or adults;  $n = 45$ , 11.9%); 2) child victims only (those who sexually abused children only;  $n = 174$ , 46%); 3) violent juvenile delinquents (violent nonsexual crimes;  $n = 79$ , 20.9%); and 4) nonviolent juvenile delinquents (nonviolent nonsexual crimes;  $n = 80$ , 21.2%). The original sample of 502 youth was decreased, as many youth ( $n = 136$ ) did not offer enough specificity about their crimes and therefore could not be classified.

When comparing demographics using an ANOVA ( $F = 4.91, p < .0106$ ), there was a significant age difference between the peer/adult victims and the child victims only ( $p < .01$ ) as well as between the peer/adult victims and the nonviolent juvenile delinquents ( $p < .052$ ) in post hoc Scheffé tests (see Table 1). However, these differences do not correlate with any of the variables in the study for any of the groups and therefore are not included in further analyses. There were no group differences on grade ( $F = 2.6, p = .052$ ).

Table 1. Age by Group

	N	Mean	Std. Deviation	Missing*
Peer/adult victims	44	17.30	1.50	1
Child victims only	169	16.43	1.70	5
Violent Juvenile Delinquents	75	16.49	1.26	4
Nonviolent Juvenile Delinquents	78	16.41	1.26	2
Total	366	16.54	1.53	

\* Did not offer age

## Procedure

All recruitment and data collection followed IRB-approved protocols. Confidential data were collected using pencil and paper surveys from six residential facilities in a midwestern state. The surveys were administered in a small group (8–12 participants) format in classrooms; however, participants were separated to ensure that they could not view each other's responses. The youth were not provided with an incentive to complete the survey.

## Measures

**Socially Desirable Responding.** The Millon Adolescent Clinical Inventory (MACI; Millon, 1993) was designed for youth in treatment or correctional facilities. It was normed on 579 adolescents in treatment facilities, with two smaller cross-validation samples. The scales were derived from the 160 true-false items based on Millon's theory of personality (Millon & Davis, 1996). The entire

MACI was used to determine social desirability, with example questions including, "I would much rather follow someone than be the leader," and "I probably deserve many of the problems I have." Data from eight youth were eliminated from the study using Millon's validity scoring procedures.

**Violence.** The Self-Reported Delinquency (SRD) was used to assess violent behavior (Elliott, Huizinga, & Ageton, 1985). This scale comprised 32 items that asked juveniles to give the best estimate of the number of times they had engaged in the activity listed during the year before entering prison and was scored on a 1–7 scale, in which 1 = Did not do and 7 = 2–3 times per day. The subscale to measure violence used four questions (items 9, 12, 17, and 24). Cronbach's reliability for this created scale showed  $\alpha = .73$ . (See Table 2 for exact questions).

Table 2. Violence Subscale Questions

SRD 9. In the year before I was arrested, I attacked someone with the idea of seriously hurting or killing that person.
SRD 12. In the year before I was arrested, I was involved in gang fights.
SRD 17. In the year before I was arrested, I hit or threatened to hit my supervisor or another employee.
SRD 24. In the year before I was arrested, I used force or strong-arm methods to get money or things from people.

**Masculinity.** The Male Role Norms Inventory (MRNI; Levant & Fischer, 1998; Levant et al., 1992) was developed to assess traditional and nontraditional masculine beliefs across a diverse male population. The MRNI differs from many masculinity scales as it measures male norms without making direct comparisons to women. It has been suggested that gender-specific questions could affect the subject's self-esteem if he senses an idiosyncratic trait in his personality is associated with femininity rather than masculinity. This might result in him giving different answers and therefore affect validity (Garnets & Pleck, 1979; Pleck, 1981).

Respondents answered 52 questions on how they felt before they were arrested. It was scored on

a 1–7 scale, in which 1 = strongly disagree and 7 = strongly agree. Therefore, a youth could score between 52 (strongly disagrees with every question) and 364 (strongly agrees with every question). Examples of MRNI questions included, “One should not be able to tell how a man is feeling by looking at his face,” and “A man shouldn’t have to worry about birth control.” The total traditional MRNI scale showed an acceptable alpha ( $\alpha = .87$ ) for this sample.

## Results

In a 4-way ANOVA ( $F [DF= 343] = 1.7, p = .17$ ), no significant difference was found between the four groups on the MRNI total masculinity score (see Table 3).

Table 3. MRNI Total Traditional Score by Group

	N	Mean	Std. Deviation
Peer/adult victims	42	3.94	.94
Child victims only	162	3.89	.85
Violent Juvenile Delinquents	72	4.13	.71
Nonviolent Juvenile Delinquents	71	4.05	.80

## Discussion

As feminist writers over the past 30 years have been able to successfully combat long-held stereotypes of women as helpless victims of culturally defined roles (Brown & Gilligan, 1992; Brown, 2003; Gilligan, 1982), it seems odd that many studies of violent adolescent males conflate masculinity with hostility, sadism, misogyny, and egocentrism, among other negative indicators, and no researchers have attempted to combat these impressions. In the current study, I measured beliefs about traditional masculinity in a sample of incarcerated youth sexual abusers and general delinquents, separated by index offense (sexual or nonsexual) and the degree of self-reported violence. As hypothesized, I found no significant differences between groups. This seemed to suggest that researchers who had

previously found significant effects between subtypes of masculinity and violent or sexually abusive behaviors in these populations (Hunter et al. 2003; Malamuth et al., 1995) might have been measuring the impact of misogynistic, sadistic, hostile, and/or psychopathic beliefs conflated with masculinity. Notably, my study is the first to measure beliefs about masculinity in a sample of youth sexual abusers and general delinquents that avoided conflating masculinity with problem psychopathology and misogyny.

It is not my intention to contradict other researchers’ findings with regard to content; many of the cited findings here have advanced the field of youth violence in important ways. However, given that males account for more than 80% of all juvenile arrests for violent crime and 98% of juveniles arrested for forcible rape (Puzzanchera, 2014), it seems logical that one explanation for male criminality is the presence of masculine beliefs. That noted, it might be time to reexamine the tradition among some researchers of conflating masculine identity with pathological indicators and misogynistic beliefs. To reiterate, Malamuth and Malamuth’s (1999) *hostile masculinity* describes “an insecure, defensive, hypersensitive, suspicious and hostile orientation, particularly toward women” and “gratification from controlling or dominating women” (p. 175). If *hostile masculinity* is a hostile version of behavior associated with being a normal man, then the implication is that normal masculinity includes attributes that reflect these characteristics in the absence of hostility. Does this mean that males who are secure, assertive, and egalitarian in their relationships and able to accept criticism from women are low in masculinity? How would a gay man who is controlling toward his male partner rate on this scale? Would he be less masculine than equally hostile and controlling heterosexual males? The term *hypermasculinity* presents a similar issue: *Hypermasculinity* describes violent reactivity due to a perceived threat to control, respect, and power (Mosher & Sirkin, 1984). Does this suggest that normal masculinity is simply a toned-down

version of this? Should women who perceive threats to their control, respect, and power also be described this way? What is it about masculinity that makes the term an appropriate fit?

Perhaps overlooked by authors who have used these and other subtypes of masculinity in youth violence literature is that the terms identify traits in males that more closely resemble symptomology associated with psychopathy and Cluster B personality disorders (e.g., grandiosity, lack of empathy, aggressiveness, law-breaking behavior, sexual impulsivity, recurrent fights, entitlement, exploitative behavior, and arrogant attitudes). The direct connection between masculine beliefs and these behaviors and personality traits is unclear. Although it is true that the vast majority of those committing violent crimes are male, it is also true that the vast majority of the world's male population is never arrested for committing acts of violence, suggesting that the majority of males are nonviolent. If so, it might be concluded that the presumed association between masculinity and hostility is inappropriate. In finding that traditional masculinity as a standalone gendered construct does not have a relationship to subtypes of violence among youth incarcerated for a variety of violent, nonviolent, sexual, and non-sexual offenses, I suggest that future researchers in the field be cautious about conflating gender identity and psychopathology.

Gender norms are culturally understood and internalized in ways that are rapidly changing (e.g., the growing acceptance of homosexuality; the presence of women in traditionally male, high-powered jobs; increasing numbers of stay-at-home-dads; the inclusion of transgendered individuals into the national dialog). Further, such changes make it necessary to restructure how society thinks about the meaning of gender and its impact on behavior over time. Furthermore, for many boys, abstract social constructs (such as masculinity) are still forming in the frontal lobes of the brain (Ochsner et al., 2005). Perhaps more mindful efforts to link biology, sociology, and psychology are needed to benefit understanding

for how gendered constructs inform behavior.

## Limitations

Despite using multiple facilities, this study is limited by its use of youth from one state only. Along with a larger sample size, subjects from varying geographic populations will aid future analyses. A control group of nondelinquent juvenile males should be used in the future, as finding standards of measurement for masculinity in adolescents is still in the trial phases. Also, despite controlling for truthfulness with the MACI social desirability scale, the subjects' self-report increases the chance of deception. Questioning the subjects' treatment providers, friends, and families may have provided a clearer understanding of the subjects' beliefs about masculinity.

## Implications and Directions for Future Research

Much remains to be understood in the relationship between traditional masculine beliefs, sexual aggression, and violent behavior. One area receiving increased interdisciplinary attention among researchers is executive functioning: The ability to adapt, modify plans, monitor interpersonal interactions, regulate emotions, and inhibit impulses (Hoaken, Allaby, & Earle, 2007). As this area has been recently found to explain both the severity and frequency of violent behavior in male adults (Hancock, Tapscott, & Hoaken, 2010), one logical possibility is that male youth, who have a more protracted course of brain development than female youth (Asato, Terwilliger, Woo, & Luna, 2010), are more susceptible to problems related to executive functioning. Just as boys tend to struggle with ADHD (Biederman et al., 2005) and impulse control more than girls do (Clark, Prior, & Kinsella, 2002), it makes sense that male brain development might be a more likely indicator for violence than a more abstract construction of gender normativity, such as masculinity.

In an upcoming study, rather than conflating pathological traits with masculinity, I plan to examine hostility, aggression, and markers of

executive functioning separately to see if relationships exist among these factors. In the interest of better understanding how adolescent males might struggle with traditional gender identity, I will also use the adolescent version of the Gender Role Conflict Scale (GRCS-A; Blazina, Pisecco, & O'Neil, 2005). Studying how these factors might influence one another has the potential to broaden the understanding for why some males continue antisocial behaviors into adulthood while most do not (Bullens et al., 2006; Moffitt, Caspi, Harrington, & Milne, 2002).

An increased emphasis is also needed on understanding markers that might act as proxies for biological sex. For example, as noted, ADHD and other deficits in executive functioning are more likely in boys due to their different speed of brain development relative to girls (Asato et al., 2010). Also, boys are also more likely than girls to have the presence of a socially approved male role model who is aggressive and encourages aggressive displays of behavior (e.g., professional wrestlers, hard-hitting football players, and Ultimate Fighting Champions; (Lopez & Emmer, 2002). Does this suggest a dulling effect to violence for some boys due to socially prescribed saturation? Or do boys and girls receive a similar amount of antisocial conditioning, but girls are simply better protected from engaging in violent and sexually abusive behaviors due to the myelination process in the female brain that is responsible for their more rapid mastery over executive functioning? If so, is it possible that a relationship exists between the timing of increased autonomous functioning in the community (the age at which young people are expected to manage themselves more independently), executive functioning, and violent or sexually abusive behaviors? Perhaps girls are developmentally predisposed to manage

their impulses in socially appropriate ways when stressors arise, whereas same-age boys, with more slowly developing frontal lobes, are more likely to act-out antisocially when encountered with similar stressors. These questions warrant further research.

## Conclusion

For many empathic, nonviolent boys, and particularly those without a male primary caregiver to role model prosocial behavior, the conflating of masculine identity with antisocial traits is likely disorienting. Assisting preadolescent and adolescent boys as they establish their identities in becoming men is particularly challenging, with dominant cultural mores sometimes equating "act like a man" with violence, dominance, and control. In talk therapy, exploring triggers for aggression and sexual violence might help male juveniles make connections in the expectations they have for themselves. Use of therapeutic tools designed to help male youth renegotiate distorted views of power and control (e.g., The Duluth Model, 2008) can be used in individual and group settings. Also, increased community exposure to prosocial men (e.g., coaches, activity leaders, mentor organizations) might also decrease the likelihood of male youth acting-out aggressively.

## About the Author

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