

AN EVALUATION OF THE YOUTH ASSESSMENT AND SCREENING  
INSTRUMENT (YASI): EXAMINING ALIGNMENT BETWEEN YASI-BASED  
SENTENCING RECOMMENDATIONS AND SENTENCING, AS WELL AS THE  
OCCURRENCE OF RACIAL DISPROPORTIONALITIES

by

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An Evaluation of the Youth Assessment and Screening Instrument (YASI): Examining  
Alignment between YASI-Based Sentencing Recommendations and Sentencing, As Well  
As the Occurrence of Racial Disproportionalities

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**LIST OF ABBREVIATIONS**

Disproportionate Minority Contact..... DMC  
Evidence-Based Practice..... EBP  
Adult Probation Officer ..... PO  
Risk and Needs Assessment..... RNA  
Risk-Needs-Responsivity..... RNR  
Youth Assessment and Screening Instrument..... YASI  
Youth Probation Officer ..... YPO

## **ABSTRACT**

**AN EVALUATION OF THE YOUTH ASSESSMENT AND SCREENING INSTRUMENT (YASI): EXAMINING ALIGNMENT BETWEEN YASI-BASED SENTENCING RECOMMENDATIONS AND SENTENCING, AS WELL AS THE OCCURRENCE OF RACIAL DISPROPORTIONALITIES**

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George Mason University, 2021

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Many criminal legal agencies consider the use of validated risk and needs assessments (RNAs) best practice (Latessa & Lovins, 2010). Over the last few years, youth court agencies across the country began to adopt pre-sentence RNAs. Probation officers (POs) typically conduct pre-sentence RNAs in between adjudication and sentencing. POs present judges with sentencing recommendations for youths based on their YASI scores. However, judges have discretion in deciding whether to order exactly what was recommended or not to. Despite the widespread use of pre-sentence RNAs, little research examines how judges use pre-sentence reports. The primary goal of this thesis is to examine how judges' sentencing decisions align with the sentencing recommendations arising from pre-sentence RNAs, as well as whether factors such as race influence judges' decisions to order less punishment, more punishment, or the exact sentence(s)

recommended. This project uses two years of data from a youth court agency located in Northern Virginia that uses a pre-sentence RNA to inform sentencing decisions. Results suggest that the judges strictly adhered to sentencing recommendations most of the time. However, when judges deviated from sentencing recommendations, they tended to order more punishment rather than less punishment. No significant race differences in alignment between recommendations and sentencing were found. Implications and directions for future research are discussed.

## INTRODUCTION

Alarming racial disparities exist in the United States' corrections system, especially regarding the overrepresentation of Black males. As a result, an abundance of literature examines racial disparities in sentencing outcomes (i.e., Bishop et al., 2010; Davis & Sorenson, 2013; Rodriguez, 2013; Steffensmeier et al., 1998). In addition to racial disparities in the type of sentence(s) received, research has found Black and Hispanic youth<sup>1</sup> receive longer sentences relative to white youth (Guevara et al., 2004; Jordan, 2014). Two potential explanations for minority overrepresentation in the criminal and youth legal systems exist. The first is differential involvement. The differential involvement hypothesis contends that disproportionate incarceration rates result from disproportionate violent offending rates (Freiburger & Jordan, 2016). However, research found that the disproportionality persists even after controlling for legal factors (Guevara et al., 2004; Jordan, 2014). The second explanation is the differential selection hypothesis. This hypothesis posits that minorities are overrepresented because police officers, prosecutors, and judges disproportionately select harsher sanctions for minorities compared to white individuals (Freiburger & Jordan, 2016). Given that disparities exist

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<sup>1</sup> Throughout this paper, the term *youth(s)* is used instead of *juvenile(s)*. There is an ongoing movement away from the use of potentially stigmatizing language to describe youth involved in the legal system, and the author sees *youth(s)* as less stigmatizing language than *juvenile(s)*.

even after controlling for relevant legal and extra-legal factors, the differential selection explanation is likely true at least some of the time.

Racial disproportionality extends beyond the adult criminal legal system and into the youth legal system<sup>2</sup>. In the youth court, judges frequently receive input from youth probation officers (YPOs)<sup>3</sup> on sentence recommendations. Therefore, YPOs may play a unique contributory role in producing racial disparities in sentencing outcomes. One study found that because YPOs attributed minority delinquency to internal causes such as personality traits, they were more likely to recommend harsher sentences for minority youth compared to white youth. For white youth, YPOs attributed delinquency to external forces and recommended more lenient sentences as compared to recommendations for Black youth (Bridges & Steen, 1998). The study cited this as an example of implicit bias, a type of unconscious bias based on stereotypes and prejudice (in this case, stereotypes about and prejudice towards young Black men) which manifest automatically when primed (Anderson, 2000; Devine, 1989). One potential way to reduce the occurrence of implicit bias and increase fairness in sentencing recommendations includes incorporating a standardized risk/needs assessment.

Research has suggested that pre-sentence risk/needs screenings may be a promising tool for reducing disparities in sentencing outcomes (Wang et al., 2013). One instrument, the

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<sup>2</sup> Throughout this paper, the *criminal legal system* is used to describe the criminal justice system and *youth legal system* is used to describe the juvenile justice system, given that one's definition of *justice* is subject to interpretation, and many peoples' conception of justice is often not achieved by the so-called justice system.

<sup>3</sup> When the author uses *PO*, she is referring to an adult probation officer. When the author uses the plural form, *POs*, she is referring to multiple adult probation officers or a combination of adult and youth probation officers. When the author uses *YPO(s)* the author is referring only to a youth probation officer (or in the plural case, youth probation officers).

Youth Assessment and Screening Instrument (YASI) is part of a pre-sentence report that YPOs<sup>4</sup> use to assess youth needs and risk and provide judges with sentencing and/or program recommendations (Jones et al., 2016). Early evaluations of the YASI have suggested that it may be helpful for reducing youth risk of reoffending and for reducing/limiting disproportionality in youth supervision (Jones et al., 2016).

However (assuming YASI risk scores are not correlated with race or ethnicity), the sentencing recommendations suggested by the YASI and the subsequent sentences that YPOs recommend to judges may only limit race/ethnic disproportionality to the extent judges follow the sentencing recommendations. Judges may exercise discretion in deciding whether to adhere to sentencing recommendations from YPOs. As long as judges meet sentencing requirements, they may choose to strictly adhere to what YPOs recommend based on YASI results or they may choose to exercise discretion and recommend harsher or more lenient sentences than recommended. As such, it is important to examine judges' adherence to YASI-based YPO sentence recommendations and whether any racial disproportionality exists in judges' decisions to adhere.

The current study seeks to examine the alignment between sentencing and YPO recommendations and whether any racial disparities exist in/between the two.

Specifically, I want to know which variables, if any, predict alignment and whether white youths' sentences are more likely to match sentence recommendations compared to minority youth. Additionally, I examine whether race is a significant predictor of YASI-

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<sup>4</sup> For the agency used in this study, the YASI was completed by an assessment officer, not the officer that would be supervising them on probation (if ordered). Although their working title are different, they are all considered probation officers.

produced risk level. I evaluate these questions using data from a youth court agency located in Northern Virginia that adopted the YASI in 2008 to increase their use of evidence-based practices (EBPs) and reduce disproportionate minority contact (DMC).

## LITERATURE REVIEW

### **The Differential Treatment of Black Youth in the Youth Legal System**

Given America's racially charged history, there is an abundance of research on the disproportionate treatment of Black individuals by the criminal legal system. The main purpose of this section is to consider the findings of existing empirical research on the role of race in decision outcomes at three legal system stages with a focus on youths. The findings from extant literature discussed hereafter will be applied to formulate the thesis hypotheses. Before getting into the current state of racial disparities in the youth legal system, it is important detail some of the historical background and context. As such, I will begin with the origin of the youth legal system.

### **Racial Discrimination from the Origins of the Youth Legal System**

The origin of the youth legal system traces back to the creation of the first youth court in 1899. With a renewed interest in saving/caring for children, youth courts across the United States emerged (Platt, 1977; Freiburger & Jordan, 2016). However, that renewed interest only applied to children who were born a certain race. At that time, segregation was still legal. Black individuals were not considered full people nor given equal protection under the law (Ward, 2012; Freiburger & Jordan, 2016). As such, the doctrine of *parens patriae*, under which the state has the legal right to act in the best interest of the child (Legal Dictionary), was not intended to serve Black youth. This is visible via the exclusion of Black youth from the original Houses of Refuge. Houses of Refuge were created to offer young white boys an alternative to



penitentiaries/incarceration and served as reformatory schools. Eventually, Black youths were gradually accepted by some Houses of Refuge. However, even after Black youth were included in Houses of Refuge, they were not provided with the same quality of education or training opportunities as white youth. Furthermore, it was common for Black youth to remain committed in Houses of Refuge for twice as long as their White counterparts (Ward, 2012; Freiburger & Jordan, 2016). Clearly, racial disparities were evident in the early youth legal system. In fact, the system automatically assumed racial segregation.

The youth system was born in the middle of the Jim Crow era, a time when racial segregation was legally accepted. In 1954, the “Separate but Equal” foundation of the Jim Crow Era was declared unconstitutional in the landmark *Brown v. Board of Education* Supreme Court case. Despite its declared unconstitutionality, segregation and discrimination persisted, especially in Southern America. During the 1960s and into the 1970s, the legality of the criminal legal system’s differential treatment of Blacks (e.g., the court system denying them due process) began to unravel (Freiburger & Jordan, 2016). With the abolition of racial segregation and the movement toward due process for all, racial inequality in America lessened. However, differential treatment based on race still occurs in the United States. Whether intentional or not, Black youth were, and still are, treated more harshly by the youth legal system compared to white youth (e.g., Bridges & Steen, 1998; Tapia, 2010; Freiburger & Jordan, 2016).

## **Implicit Bias and Evidence of Racial Bias in the Criminal Legal System**

Today, over a century after the origin of the youth legal system and decades after the end of the Jim Crow Era, racial discrimination persists. Worth noting, the media may be at least partially responsible for the continued unequal treatment of young Black Americans. The overrepresentation and depiction of Black crime by the media (Dixon & Linz, 2000) concretized the belief that young Black males are especially dangerous, cold, monstrous criminals beyond fixing (Fader et al., 2014). This idea seems so engrained in American culture that it unconsciously impacts decisions made by employees of the criminal legal system through implicit bias (Epp et al., 2014).

As a result of such pervasive stereotypes, “get tough” practices disparately targeted Black youth. A classic example is the sentencing disparities between crack and cocaine. Crack, “known as ‘the poor man’s drug,’ ... was predominantly used by Blacks, while powder cocaine was used mainly by whites” (Shein, 1993, p. 29). According to experts, crack and cocaine are essentially identical drugs (Kautt & Spohn, 2002; McDonald & Carlson, 1993) in different forms. However, criminal charges for possession/use of crack results in much harsher sentencing compared to cocaine. Specifically, the sentencing disparity between crack and cocaine was 100:1, respectively (Grassley, 1997; Reinerman & Levine, 1997; Sacher, 1997; U.S. Sentencing Commission, 1991). Since 2010, this disparity has reduced to 18:1, which is still an alarmingly significant disparity between two drugs that are essentially same. However, this disparity was no accident. Again, crack was known for being a popular drug in poor minority communities due to its inexpensiveness (Boggess & Bound, 1997). Cocaine was

better known to be a drug for more middle-class, white men (Chappell & Maggard, 2007; Kautt & Spohn, 2002; McDonald & Carlson, 1993). Whether a result of stereotypes, racism, or a combination of the two, the harsher penalization of crack compared to cocaine resulted in efforts targeting poor minority communities and contributing to minority overrepresentation in incarceration.

Another, more recent example of the differential treatment of Black Americans exists with Black drivers who are disproportionately targeted by police officers in investigatory stops (Epp et al., 2014). Investigatory stops are a widely accepted, professional police practice. They are used to proactively prevent crime by pulling over drivers for minor violations and then pry for evidence of additional crimes. Once pulled over, the officer will ask the driver investigatory and intrusive questions, hoping that the driver complies and allows an otherwise unwarranted search of the vehicle. Epp, Maynard-Moody, and Haider-Markel (2014) found Black drivers are disproportionately targeted in these stops. For instance, they found the likelihood of a police officer making a stop for an investigatory reason was 28% for Black men under the age of 25 compared to 12% to 13% for white men under the age of 25 (Epp et al., 2014). Thus, Epp and colleagues (2014) argued that the very practice of the investigatory stop relies on implicit bias. The ever-enduring stereotype that crime has the face of a young, Black male produces unconscious biases that manifest routinely when primed (Anderson, 2000; Devine, 1989). For instance, if the media tends to put out crime stories when the suspect is a Black male, an individual who watches, listens to, and/or reads the media may assume the suspect of a crime is a Black male when they hear about a new crime. This is

implicit bias. It is important to note that most everyone has implicit biases, and even the most culturally and socially aware people unconsciously act on their implicit biases if/when primed (Blair, 2001; Duncan, 1976; Devine, 1989).

### **Theories of Disproportionate Minority Contact**

Empirical findings related to explaining DMC tend to rely on two specific theories. These theories are focal concerns theory (Steffensmeier et al., 1998) and attribution theory. According to focal concerns theory, judges have three focal concerns that influence their decisions: 1) the individual's blameworthiness; 2) the protection of the community, and 3) the practical constraints and consequences of their decisions (Bishop et al., 2010; Steffensmeier et al., 1998). Blameworthiness of the individual refers to evaluations of the culpability of the charged person. The protection of the community involves making decisions that are in the perceived best interest of community-safety. Practical constraints and consequences refer to evaluations of the options available and how the chosen decision will be judged by others (Fader et al., 2014; Ericson & Eckberg, 2016). Focal concerns theory evolved to explain the choices of various decision-makers in the criminal legal system (Bishop et al., 2010).

Given that decision-makers do not have all the information in any specific case, they often develop a perceptual shorthand to assess the three focal concerns as best as possible in the limited time they have (Ericson & Eckberg, 2016; Steffensmeier et al., 1998). This perceptual shorthand may result in decision-makers' reliance on stereotypes and implicit bias. Similarly, Albonetti (1991) wrote that racial disparities in sentencing "may be the product of judicial attempts to achieve a 'bounded rationality' in sentencing

by relying on stereotypical images of which defendant is most likely to recidivate” (p. 250). The concepts of the perceptual shorthand and of bounded rationality fit well together to explain why a decision-maker may resort to using stereotypes when making decisions. When individuals make decisions under time constraints and with limited information and/or bounded rationalities, individuals may automatically rely on stereotypes to reach their decisions (Albonetti, 1991; Steffensmeier et al., 1998). Research found that young Black criminally involved individuals are viewed as more dangerous and threatening, more culpable, less capable of reform, and more likely to reoffend compared to young white criminally involved individuals (Steffensmeier et al., 1998; Ulmer & Kramer, 1996; Dixon & Rosenbaum, 2004). These biased views may lead decision-makers to judge Black individuals as more blameworthy, more dangerous to the community, and more deserving of serious punishment.

Empirical support for focal concerns theory continues to grow. For example, prior research has consistently found that white youths are viewed as less blameworthy for their delinquent behaviors and more capable of reform compared to similar Black youths (Bridges & Steen, 1998; Steen et al., 2005; Graham & Lowery, 2004). Furthermore, decision-makers often assume that Black youths come from economically disadvantaged communities and/or dysfunctional families where parental supervision is lacking and reform is unlikely (Leiber, 2013; Leiber & Johnson, 2008). Permitting such a youth to stay at home rather than remanding them to custody, then, would potentially violate the focal concerns of community protection and practical constraints. As such, a judge may be more likely to order detention for those youths.

Highly compatible with focal concerns theory, attribution theory focuses on what decision-makers attribute an individual's criminality to (Bridges & Steen, 1998; Graham & Lowery, 2004). There are two types of attributions: internal and external. Internal attributions refer to factors within an individual, such as personality, and are viewed as relatively unchangeable or static. External factors on the other hand are factors outside of an individual, such as their environment, peer influence, and so on. External factors are viewed as less static (i.e., changeable) than internal factors (Bridges & Steen, 1998; Graham & Lowery, 2004). These attributions lead to assumptions about reformability. In turn, assumptions about reformability inform the courses of action decision-makers take. Therefore, if decision-makers differentially attribute causes of criminality depending on an individual's race, this may help explain minority overrepresentation in the youth legal system.

Bridges and Steen (1998) conducted a study that provides significant support for attribution theory. They found that YPOs were more likely to attribute crimes committed by Black youth to internal characteristics like personality and more likely to attribute crimes white youth committed to external characteristics like poverty or a lack of effective parenting. Moreover, criminality attributed to internal characteristics was weighed more heavily in assessments of future offending likelihood (Bridges & Steen, 1998). As a result, YPOs regularly recommended harsher sentences for Black youths compared to white youths, "even after adjusting for legally relevant case and offender characteristics" (Bridges & Steen, 1998, p. 554).

Focal concerns theory and attribution theory work together to explain minority overrepresentation across the youth legal system. Focal concerns theory outlines decision-makers' primary concerns within the criminal legal system. Because these decision-makers often make decisions with limited information and time, they may rely on stereotypes and implicit bias when making decisions with their focal concerns in mind. Given the enduring stereotype that young, Black, criminally involved individuals are more dangerous, more culpable, and less capable of reform compared to their young white counterparts, it follows that criminal legal system decision-makers with limited information, limited time, and bounded rationality may treat Black youth more harshly than white youth. Similarly, attribution theory helps explain minority overrepresentation in the youth legal system when decision-makers differentially attribute causes of criminality depending on an individual's race (Bridges & Steen, 1998; Graham & Lowery, 2004).

Although this thesis is primarily interested in YPOs and judges, the remainder of this section reviews the literature on the differential treatment of Black and Hispanic youth compared to white youth at three important decision points within the criminal legal system: arrest, charging, and sentencing. It is important to consider multiple decision points because small disparities in early stages may increase disparities in later stages (Arnold, 1971; Chin, 2016), and because the operation of racial disparities in pre-sentence stages may help explain how racial disparities operate in the sentencing stage.

## **Racial Disparities in Arrests**

Police officers are often the first stage of decision-makers in the youth legal system. Police officers have an incredible amount of discretion at their disposal. In many situations where an arrest may be completely justifiable, police officers have the discretion to not make an arrest. In this way, officers determine whether a youth will formally enter the system. Research and arrest statistics overwhelmingly show that minorities are overrepresented in arrests (Sutphen et al., 1993; Pope & Snyder, 2003; Hirschfield et al., 2006; and Brownfield et al., 2001). The following question then arises: Do police officers differentially apply discretion depending on the race of the potential arrestee?

As previously noted, two conflicting explanations for minority overrepresentation in arrests exist. The first is differential involvement. The differential involvement hypothesis contends that minorities are arrested at disproportionate rates because they engage in crime at disproportionate rates (Freiburger & Jordan, 2016). If this theory is accurate, then offending rates should completely account for the differences in arrest rates. Limited support for this perspective exists. It may be the case that Black youth are more involved than white youth in offenses like fighting and assault (Tapia 2010; McNutty & Bellair, 2003). For such violent offenses, race was not a significant factor in an officer's decision to make an arrest (Tapia, 2010). This is likely because officers have less discretion in terms of how they can respond to an offense when it is serious. Myers' (2004) findings that race did not influence the likelihood of arrest provides further support for the differential involvement perspective. However, just because race was not



a significant factor in one situation does not mean that is the case in others. In other words, the differential involvement hypothesis may hold true in some geographical areas, but not others. Furthermore, even though there is some evidence on differential rates of offending, it is likely that the extent of minority overrepresentation may not be fully accounted for by differential involvement. For example, Pope and Snyder (2003) conclude that minority overrepresentation in arrest statistics is mostly due to differences in offending, but not entirely. Likewise, Bishop, Leiber, & Johnson (2010) found that although legal variables had the strongest influence on officers' intake decisions, race had a significant effect even after controlling for other relevant variables. Therefore, there is merit to the second explanation for minority overrepresentation in arrests.

The second explanation for minority overrepresentation in arrests is the differential selection hypothesis. The differential selection perspective argues that minority overrepresentation in arrests is a product of police racial bias. In other words, supporters of this perspective argue that police apply discretion differently depending on an individual's race. Specifically, police officers are less lenient when dealing with non-white individuals (Freiburger & Jordan, 2016). Sound empirical support for this perspective exists. For instance, Tapia (2010) examined the association between race, class, and arrest among 12- to 16-year-olds in the United States using longitudinal data from the National Longitudinal Survey of Youth (NLSY). He found that minority-youth were more likely to be arrested than white youth for minor offenses, which one might expect given the earlier discussion that police officers have more discretion regarding minor offenses compared to more serious offenses. Thus, Tapia's (2010) finding suggests

that in situations when police have more discretion, an individual's race may be a significant factor. Multiple studies concurred that even after controlling for relevant legal and extra-legal factors, Black youth were more likely to be arrested than white youth (Hirschfield et al., 2006; Brownfield et al., 2001; Lundman et al., 1978; Liederbach, 2007). This suggests that the differential involvement hypothesis may not be a stand-alone theory. In a slightly more recent study, Ericson & Eckberg (2016) examined police officer and prosecutors' youth diversion decisions. The researchers compared diverted youth with youth who were eligible for police diversion but not diverted for all youths arrested in 2011 in eight Midwest police agencies. They concluded that police were significantly less likely to divert non-white than white youth. This results in the funneling of minority youth into the formal criminal legal system at higher rates than white youth. Some consensus among researchers suggests the differential selection hypothesis at least partially explains minority overrepresentation.

It is most likely that some combination of the two hypotheses exists. While there is empirical support for each, a common finding in the literature is that type of crime matters for whether differential treatment based on race exists. To provide some examples, Sutphen, Kurtz, and Giddings (1993) interpreted and reported on a key finding from a larger study by Kurtz and colleagues (1991) and examined hypothetical arrest decisions via vignettes. In that study, 126 male police officers representing eight Georgia police agencies responded to eight randomly ordered vignettes. The vignettes consisted of various potential arrest situations with multiple potential charges in each scenario so that police officers had discretion in how they responded to each one. The researchers

designed the vignettes so that each vignette could be presented with either a Black or a white youth suspect. They used a randomized block design, so each police officer responded to four vignettes where the suspect was white and four where the suspect was Black. Their findings revealed (hypothetical) Black youths received harsher treatment in most cases and the police officers chose to charge them with more offenses compared to when the suspect was presented as a white youth. Moreover, when the vignette presented the suspect as a white youth, the youth was more likely to be released and not charged compared to when the vignette presented the suspect as a Black youth (Sutphen et al., 1993). Furthermore, as discussed earlier, Tapia (2010) found that minority-youth were more likely arrested than white youth for minor offenses, but for serious offenses race was not a significant factor. Therefore, the differential involvement hypothesis may be more explanatory for serious, violent offenses, and the differential selection hypothesis may be more explanatory for minor offenses.

While there is some value in both hypotheses, the differential selection hypothesis requires a less straightforward understanding compared to the differential involvement hypothesis. Focal concerns theory and attribution theory explain why differential selection occurs in arrests. In terms of focal concerns theory, officers may view Black youth as especially dangerous to society, blameworthy, and therefore more in need of serving time in a correctional facility. These views are likely the result of ingrained and enduring stereotypes (Anderson, 2000; Devine, 1989) and of the perceptual shorthand that officers must rely on when making arrest decisions (Ericson & Eckberg, 2016). In terms of attribution theory (Graham & Lowery, 2004), officers may be more likely to

attribute minority criminality to internal factors and therefore be more likely to arrest them, although (to my knowledge) this has not yet been evaluated empirically. When external attributions are assumed, officers may be less likely to make an arrest in minor situations. More research on the applicability of attribution theory to arrests by police is needed.

Both focal concerns and attribution explanations also apply to a study by Armstrong and Rodriguez (2005). Armstrong and Rodriguez (2005) used a sample of pre-adjudicated youths from 65 northeastern counties to examine the link between race and pre-adjudication detention decisions. They found that Black and Hispanic youth were more likely than white youth to be held by police in preventive detention. Their results suggested that as the non-white population increased in a county, Black and Hispanic youth were more at risk for being detained, regardless of crime rates. This crack-down on minorities suggests that as minority population increases, officers see minorities as posing greater threats to public safety. If officers hold biased views toward minorities as a result of deeply entrenched stereotypes, they may judge minorities as less amendable, more culpable, more dangerous, and more in need of detainment relative to white youth.

### **Racial Disparities in Charging Decisions**

The majority consensus in the related literature is that minority youth are formally charged at disproportionate rates. Returning to Ericson and Eckberg's (2016) study, for example, they found that prosecutors chose to formally charge non-white youth significantly more often than they charged white youth. Rather than being charged, white youth were more likely diverted. Similarly, Bishop and Frazier (1996) considered formal

processing decisions among all youths referred for intake processing in Florida from 1985 to 1987. They used youth case records to examine the association between race and formal processing decisions. Bishop and Frazier's (1996) findings echo Ericson and Eckberg's (2016) findings discussed above. The trend between race and formal processing decisions persisted even after controlling for legal and extra-legal factors; Black youth were significantly more likely than white youth to receive formal processing. Additionally, Bishop, Leiber, and Johnson (2010) evaluated whether this relationship differs by crime type. They examined youth processed in a Midwestern County using youth court case files from a period of 21 years (1980 to 2000) to explore factors producing racial inequities at each stage of youth processing. They utilized a disproportionate random sample of Black youth to make comparisons across racial groups. Results from logistic regression analyses found that for felony crimes specifically, prosecutors were more likely to formally charge Black youth compared to white youth (Bishop et al., 2010).

A few studies yielded findings contrary to the above research findings. Tracy (2002) conducted a quantitative study of youth involved in the youth legal system in three Texas counties to examine race and youth legal processing. He found no race effect on the decision to prosecute in the three Texas counties. Furthermore, his findings suggested levels of criminal activity differed based on race and supported the differential involvement hypothesis. Freiburger and Jordan (2011) considered prosecutors' decisions to petition youth cases in a study on West Virginian youth. The researchers documented that race had no effect on the decision to petition a case. However, in areas of high

poverty, a main effect of race did appear. Notably, these studies were limited to specific geographic areas and therefore are not representative beyond those geographic areas. An insignificant race effect in a couple of studies in particular locales does not negate the significant race effects found elsewhere. Although researchers often look for nationally representative trends, it is common to yield mixed findings from different jurisdictions.

As far as the significant race effects, focal concerns and attribution theories help explain prosecutors' disparate treatment. Prosecutors often base charging decisions on the outcome they think they are most likely to achieve. For instance, if a prosecutor does not think a case is strong enough to yield a conviction, they are less likely to formally charge (Frohman, 1997). In weighing whether they will get a conviction, prosecutors think about how the next stage of decision-makers will view the defendant (Frohman, 1997). Since Black youth are more often stereotyped as aggressive and dangerous, prosecutors may expect judges and/or juries to view Black defendants as more culpable, more of a threat to the community's protection, and more deserving of restricted freedom than white defendants (Frohman, 1997). Moreover, prosecutors may anticipate that others will view Black defendants' charges as resulting from internal factors rather than external ones. Given these focal concerns and attributions, prosecutors may think, whether implicitly or blatantly, that they are more likely to win cases when the defendant is Black (Ericson & Eckberg, 2016). This potentially explains the race effect in charging decisions.

### **Racial Disparities and Judicial Discretion in Sentencing Decisions**

Based on the charges prosecuted, judges in youth courts have discretion to choose the sentencing outcome. For example, they may sentence a youth to a detention center, to

a term of probation, to a therapeutic program, to some other outcome, or to a combination of various sentences. An abundance of empirical research examined whether race effects exist in sentencing outcomes.

Fader, Kurlychek, and Morgan (2014) examined the sentencing outcomes of Philadelphia youth. In Philadelphia, judges have over 100 intervention programs to choose from for youth. These programs range from therapeutic to strict, disciplinary programs. Fader, Kurlychek, and Morgan (2014) found that white youth were most likely placed in a therapeutic program while Black youth were most likely placed in a physical regimen program such as a boot camp. The disparity in Black and Hispanic youth sentenced to a physical regimen program or traditional reform school rather than a therapeutic program could not be explained by legal factors. Interestingly, legal, extralegal, and needs-based factors better explained the sentencing decisions for white youth than for either Black or Hispanic youth. These findings suggest decision-makers (in Philadelphia) view minority youth differently than they view white youth. White youths were viewed as less culpable/blameworthy and more amenable to reform. Minority youths were viewed as more culpable/blameworthy and less amenable to reform. Such differential attributions led to significant differences in placement decisions (Fader et al., 2014).

Similarly, Rodriguez (2013) found Black and Hispanic youth received harsher sanctions than similar white youth among all youths receiving their sentencing in Phoenix, Arizona from 2000 through 2002. Black youths were 1.84 times more likely than white youths to receive a sentence to correctional confinement. Various other studies

provide further supporting evidence that race is a significant predictor of sentence outcomes (Bishop et al., 2010; Davis & Sorenson, 2013; Steffensmeier et al., 1998). This exists not only for the type of punishment, but also for the length of punishment. For example, Jordan (2014) used four years of data from the State Court Processing Statistics, resulting in a sample of more than 35,000 adjudicated youths, to examine age, race, and sentencing decisions. Multilevel modeling found Black and Hispanic youths were incarcerated at significantly higher rates and were given longer sentences compared to white youths (Jordan, 2014). Likewise, Guevara, Spohn, and Herz (2004) used data on youth court referrals in two youth courts in the Midwest to examine how race and type of counsel impact youth court outcomes. They found that once adjudicated delinquent, judges ordered harsher sanctions for minority youth compared to white youth in terms of both sanction type and length. These race effects persisted when controlling for legally relevant factors (Guevara et al., 2004). Not only were minority youth more likely to receive harsher sentencing in the youth court, but they also had a higher likelihood of being transferred to adult court compared to white youth (Jordan & Freiburger, 2010).

Like with the arrest findings, one researcher found no race effect for incarceration decisions among a sample of violent youth offenders in Pennsylvania (Myers, 2003). This suggests that just like more serious charges restrict police officers' discretion, judges also possess less discretion with more serious, violent offenses. For instance, mandatory minimums for specified offenses limit the sentencing options available to judges. With minor offenses, judges have more sanctioning options available to choose from.



In the youth court, judges frequently receive input from YPOs on sentence recommendations. Therefore, YPOs may play a unique, contributory role in producing racial disparities in youth sentencing outcomes. As discussed earlier, one study found that because POs attributed minority delinquency to internal causes, they were more likely to recommend harsher sentencing for minority youth compared to white youth (Bridges & Steen, 1998). Bridges and Steen (1998) examined how court officials' perceptions of youths contributed to racial disparities in sentencing outcomes. They used written reports from 233 YPOs to explore the relationship between race, YPOs characterizations of youths, and YPOs perceived causes of the crimes. Bridges and Steen (1998) found that for white youth, YPOs attributed delinquency to external forces and recommended more lenient sentences as compared to recommendations for Black youth (Bridges & Steen, 1998). These findings provide evidence of the operation of attribution theory in the youth legal system.

Focal concerns and attribution theory offer some explanation for racial differences in sentencing outcomes, perhaps even more so than they did for the earlier decision points. In deciding on sentencing outcomes, a judge must balance their three focal concerns as best as they can in a limited amount of time with a limited amount of information. They must evaluate the culpability of the defendant, the protection of the community, and the practical consequences of their decision, all while relying on a perceptual shorthand and with bounded rationality. If they attribute a defendant's criminality to internal factors, judges will likely view the defendant as more culpable/blameworthy and more likely to reoffend, posing a greater risk to community

safety (Fader et al., 2014). Given these theories and the racial disparities that exist in sentencing outcomes, a logical explanation is that judges view minority youth offenders as more personally responsible for their criminality, more likely to reoffend, and more deserving of harsher sanctions compared to white youth offenders.

### **Concluding Statements about Race Discrimination in the Youth Legal System**

Overall, racial discrimination exists to some extent at each of the three decision points discussed above. Focal concerns theory and attribution theory offer explanatory power at all three stages. These theories help to illuminate why racial disparities in the youth legal system exist and how they operate. While the precise extent of discrimination at each stage may never be fully understood, that it exists at least to some extent is undeniable.

It has become common knowledge that Black individuals are widely overrepresented in the United States' corrections system. This is true in 49 out of 50 U.S. states (with Hawaii being the exception), although the disparity is much worse in some states than others. For example, in 2015 New Jersey had the highest Black-white disparity among incarcerated youth. According to The Sentencing Project, for every 30.6 Black youths incarcerated in New Jersey, there is 1 white youth incarcerated. This ratio cannot be explained entirely by the differential involvement hypothesis. Differential selection must then be playing a role in the overrepresentation of Black Americans in correctional detention. Since disparities in incarceration are highly visible and well-documented, judges decision-maker have taken on much of the heat for minority overrepresentation.

One promising way to help limit racial disparities in sentencing outcomes is by using standardized, evidence-based RNAs to inform sentencing decisions. RNAs may reduce sentencing decision-makers' need to rely on subjective assumptions, stereotypes, and implicit biases when making sentencing decisions.

### **The RNR Movement**

The risk-need-responsivity (RNR) model calls for a shift from a primarily retributive approach to criminal justice to a more rehabilitative approach and suggests that emphasizing rehabilitation is the better approach to reduce recidivism (Bonta & Andrews, 2012). As such, the development of the RNR model contributes to the evolution of risk-assessment tools into tools that are meant to aid individuals with rehabilitation. Specifically, risk-needs assessment tools are used to inform individual case plans to yield optimal treatment outcomes. Many criminal legal agencies consider utilizing validated risk-needs assessment tools as a best practice (Latessa & Lovins, 2010). According to Brogan and Colleagues (2015), “since a 1990 meta-analysis by the researchers responsible for articulating the RNR model (Andrews et al., 1990), a number of studies have confirmed the utility of the RNR model as a tool to reduce recidivism” (p. 280). However, most studies of the utility of the RNR model occurred in adult correctional settings. Adoption of the RNR model is well-established in adult criminal legal settings, while adoption and evaluations of the RNR model within the youth legal system is ongoing (Brogan et al., 2015). As such, the origins and research on the RNR model is both important and crucial for understanding their expected and actual effect in criminal legal settings.

## **The RNR Model**

Over the past few decades, the assessment of individuals' recidivism risk has significantly improved. Until the 1970s, the assessment of risk was based primarily on subjective professional judgments (Brogan et al., 2015). Beginning in the 1970s, actuarial risk assessments which primarily relied on static factors for assessing risk became the norm for establishing individual risk. Today, the norm is for criminal legal agencies to assess individual risk based on RNAs which take both static and dynamic risk factors into consideration (Bonta & Andrews, 2007; Brogan et al., 2015; Grove et al., 2000). These improvements in risk assessments were largely driven by the introduction of the RNR model to the criminal legal system (Bonta & Andrews, 2007; Brogan et al., 2015).

In the realm of the criminal legal system, the RNR model refers to assessing individuals' likelihoods of recidivism (the risk component of the RNR model) as well as their specific treatment needs (the need component of the RNR model), and subsequently developing individualized treatment plans that are responsive and based on an individual's recidivism risk and treatment needs (the responsivity component of the RNR model; Bonta & Andrews, 2007).

***The Risk Component.*** The risk component of the RNR model is all about estimating how likely an individual is to commit another crime in the future; that is, how likely they are to recidivate. As mentioned above, static and dynamic factors are used to determine risk levels. Static risk factors are those stable characteristics that cannot be altered through treatment (i.e., criminal history and age). Dynamic risk factors are malleable characteristics (i.e., employment status and peer group). Dynamic risk factors

are especially important to the RNR model because they inform risk assessors about which risks treatment should target since they reveal the areas individuals may be most able to reform. When criminal legal actors address dynamic risk factors, reductions in recidivism are most likely achieved (Dowden & Andrews, 1999). Most risk-needs assessment tools classify individuals into low-, medium-, or high-risk categories. High-risk individuals are considered in need of the most resources while low-risk individuals are considered in need of the least resources (Andrews et al., 1990). In other words, intervention/supervision is prioritized for high-risk individuals (Bonta & Andrews, 2007).

***The Need Component.*** There are eight domains of criminogenic needs: (1) antisocial behavior history, (2) antisocial personality tendencies, (3) antisocial/procriminal attitudes, (4) antisocial/criminal associates, (5) problematic family/marital circumstances, (6) school/work situation, (7) substance abuse, and (8) lack of prosocial recreation/leisure activities (Andrews et al., 2011). Like the risk component, criminogenic needs may be static or dynamic. Treatment/interventions to reduce recidivism and reform individuals should target dynamic needs (Andrews & Bonta, 2010) for optimal intervention benefits.

***The Responsivity Component.*** The responsivity component of the RNR model emphasizes the importance of individualized interventions for reducing recidivism. It “recognizes that different individuals have different strengths and deficits that may impact the effectiveness of particular treatment approaches for that person” (Brogan et al., 2015, p. 279). As Taxman (2014) put it, “Responsivity is not just about recidivism reduction but more directly about increasing the receptivity of offenders to

programming” (p. 32). Taxman (2014) called for a responsive system that offers variable treatment/intervention on a continuum from low to high program intensity (i.e., dosage and duration of a particular intervention) and number and type of targets (i.e., addressing one non-criminogenic need versus multiple criminogenic and non-criminogenic need). The YASI, which is a validated RNA and is the risk assessment used in the current study, operates in accordance with the RNR model as it assesses youths’ static and dynamic risks and needs which assessors then use to gauge individuals’ optimal intervention receptivity and make subsequent intervention recommendations. The YASI is discussed in greater detail in a subsequent section.

***General Support for the RNR Model.*** Research supports the use of the RNR model as an effective approach to reducing recidivism. Findings from meta-analyses by Andrews and colleagues (1990) and Smith and colleagues (2009) have supported the RNR model by showing interventions consistent with the three RNR principles are better at reducing recidivism than interventions that fall short of the RNR model. Additionally, research has garnered support for the notion that more resources should be devoted to high-risk individuals compared to medium- and low-risk individuals. In fact, Bonta and colleagues (2000) found that when low-risk individuals receive intensive programming, it may have a harmful effect on recidivism likelihood. Bonta and colleagues (2000) used a quasi-experimental design to evaluate three groups of individuals involved in the criminal legal system (treated offenders, treated probationers, and formerly incarcerated persons) that are comparable based on risk-needs scores, type of offense, and sentence length. Their results supported the need to match treatment intensity with risk level. Specifically,

they found treatment to reduce recidivism among high-risk individuals, and their findings support the idea that intensive treatment for low-risk individuals may be harmful. Lipsey (2009) conducted a meta-analysis of interventions for youth and concluded programs specifically aimed at serving high-risk youth are one of three distinct factors associated with the greatest recidivism reductions. Another meta-analysis by Andrews and Dowden (2006) found greater recidivism reductions when high-risk individuals are treated compared to when low-risk individuals are treated. Furthermore, they find that greater RNR adherence is associated with greater recidivism reductions (Andrews & Dowden, 2006; Lowenkamp et al., 2006). However, RNR adherence is complicated. Evidence of RNR inadherence and barriers to RNR adherence are discussed in the next section, specifically regarding youth within the youth legal system.

### **Youth Legal System Agencies' Adoption of the RNR Model and RNAs**

With the widespread adoption of the RNR model by criminal legal agencies, youth legal system agencies across the nation adopted assessments and screening tools to identify and address youths' criminogenic risks and needs. Based on the RNR framework, decision-makers within the youth legal system implementing RNAs in their organizations ask assessors (typically YPOs) to use the results of the RNAs to develop individualized treatment and/or sentence recommendations.

*YPO Adherence to the RNR Model.* Given the scope of this thesis, I limit the following discussion to YPOs' RNR adherence, apart from some supporting findings which looked at adult PO RNR adherence. A recent study by Miller and Palmer (2020) examined whether YPO decision-making was consistent with the RNR model.

Approximately 485 YPOs in Pennsylvania participated in an online survey which asked the YPOs to respond to a vignette, capturing how YPOs assessed hypothetical clients as well as the treatment/services and sentence they recommended for the hypothetical client. While Miller and Palmer (2020) found that some of the decisions YPOs made were consistent with the RNR model (e.g., high-risk client was more likely to be recommended for placement and less likely to be diverted compared to lower-risk client), some of the decisions were inconsistent with the RNR model. For example, offense severity was unrelated to placement, diversion, and service probabilities (Miller & Palmer, 2020). Similarly, Singh and colleagues (2014) examined the consistency of individualized case plans for 120 incarcerated youth with the results of their risk assessments. They found significant variation in the match between youths' risk assessment results and number of services received. While their analysis supports the utility of RNR adherence for limiting suboptimal outcomes for the youths in their study, their findings also reveal that we need to achieve greater adherence to the RNR model.

### **RNAs and Racial Disparities**

The rapid, widespread adoption of standardized RNAs by the criminal and youth legal systems may have been fueled by the seemingly race-neutral nature of RNAs (Taxman & Smith, 2020). Pre-sentence RNAs are supposed to help reduce the occurrence of unmerited racial disparities in sentencing since they are standardized assessments meant to gauge individuals' risk and needs irrespective of race (Taxman & Smith, 2020). The existence of a formal tool that compiles information to assesses individuals' reoffending risk and needs, as well as the sentencing recommendations that arise based



on that information, help provide decision-makers with an abundance of information that is digestible (Chanenson & Hyatt, 2016; Metz et al., 2019; Monahan et al., 2018). In other words, they essentially decrease decision-makers' need to rely on a perceptual shorthand, which should reduce decision-makers' need to fall back on their own personal stereotypes and/or biases when making decisions.

### **Potential Problems with RNAs**

Some scholars caution against the utilization of RNAs. While research and logic may suggest pre-sentence risk/need screenings to be promising tools for reducing disparities in sentence outcomes by reducing implicit bias and increasing objectivity in sentencing, some scholars argue the use of such tools may contribute to/produce racial disparities if used incorrectly (Hannah-Moffat, 2013). Harcourt (2015) argued that risk is simply a proxy for race because of the weight of criminal history in predicting future offending. Similarly, Skeem and Lowenkamp (2016) found that criminal history mediates the relationship between race and recidivism. This could be due to racial groups' differential involvement in criminal activity, to police officers' disproportionate targeting and/or treatment of minority youth, to the disproportionate charging and adjudication of minority youth, or some combination of these things. Whatever the cause, whether race significantly predicts risk level has important implications. Schneider (2018) wrote "given the disproportionate representation of minorities in the justice system, a risk assessment instrument that informs placements and services has the ability to exacerbate the disproportionality" (p. 35). As such, regular evaluations of RNAs are needed to ensure racial disproportionality is not being compounded by the tools. At the very least,

however, pre-sentence RNAs should help reduce the occurrence of completely unfounded racial disparities in sentence outcomes. However, this is dependent on the individual filling out the assessment. As long as the individual filling out the RNA does not answer questions differentially because of the race of the individual the assessment is being conducted for, no unfounded racial disparities should be produced by RNAs.

Another noteworthy criticism of RNAs is the fact that we cannot possibly get individuals' risk levels right every time. Even the most reliable and predictively valid RNAs will not be 100% accurate. In fact, the RNAs with the strongest predictive validity are modest at best (). This means it is inevitable that some low-risk individuals will be declared high-risk and vice versa. This is partly because those conducting the RNAs may not optimally respond to RNA results. The responsivity piece of the RNR model is highly important, but easily mishandled, especially if the risk and need components of the RNR model are not properly addressed or given equal attention. Hannah-Moffat (2005) identified "slippage" in POs' handling of risk and needs, which refers to POs' tendency to over-emphasize risk and de-emphasize needs. As Rudes and colleagues (2016) put it, "POs still regularly conflate risk and needs in a way that entangles risk with needs (a.k.a., slippage) ...a considerable disservice to both the need and responsivity principles of the RNR framework" (p. 422).

Rudes and colleagues (2016) used qualitative data (interviews and observations) from seven probation agencies in Virginia to examine how POs understand and use RNAs in case planning/case management decisions and compared adult and youth PO-probationer interactions. While the researchers identified some "slippage," it tended to be

among the adult PO-probationer interactions rather than YPO-probationer interactions. In other words, YPOs emphasized and responded to probationer needs in their interactions more often than adult POs did. Adult POs discussed risk with probationers more than they discussed needs. This suggests YPOs may be more likely to address the full RNR framework compared to adult POs, albeit not perfectly (Rudes et al., 2016). Despite the potential misuse of RNAs, the overwhelming majority of the literature on the utility of the RNR model supports the model as an effective approach for reducing recidivism.

### **The Intersection of the RNR Model and Sentencing Decisions**

The use of pre-sentence RNAs is increasing in youth and adult courts across the country. However, “their role has been contentious, and the extent to which they influence dispositions is unclear” (Jonsson & Viljoen, 2020, p. 3). POs and judges use pre-sentence RNAs to assess individuals’ risks and needs before an offender receives their sentence and to inform judges’ sentencing decisions (DeMatteo et al., 2016; Monahan & Skeem, 2016; Singh et al., 2014; Wachter, 2015). However, there is very little research on how judges actually use these tools in practice (Garrett & Monahan, 2019). One recent study by Jonsson and Viljoen (2020) examined 170 judges’ attitudes toward RNAs and whether the use of a validated risk assessment influenced judges’ sentence recommendations using an experimental vignette. While the judges in the study appreciated the information provided to them by the risk assessment tool, their sentence recommendations were not significantly different when the tool was present compared to when it was not. However, judges’ sentence recommendations for high-risk youths were more uniform when there was a risk assessment.

## **The YASI**

The YASI is a comprehensive pre-sentence RNA for youths. The tool is described in detail in the methods section<sup>5</sup>. Jones and colleagues (2016) evaluated the YASI's ability to accurately predict reoffending among a sample of 464 youth probationers in Alberta, Canada over 18-months. The YASI had a moderate level of accuracy among the sample (AUC=0.79,  $p < 0.001$ , 95% CI [0.74, 0.84]). Furthermore, predictive validity did not differ by racial group although it did perform better for males compared to females (AUCs=0.82 vs. 0.68,  $z=2.09$ ,  $p=0.05$ ). Other research studies find the YASI to have at least a small to moderate level of predictive accuracy across state lines (e.g., Baird et al., 2013; Matz & Martinez, 2019; Scott et al., 2019). The YASI has also demonstrated strong internal consistency as well as a high degree of convergent validity with another well-known youth RNA, the Youth Level of Service /Case Management Inventory (YLS/CMI; Geck, 2012; Jones et al., 2016; Scott et al., 2019). Collectively, the extant research suggests the YASI is a helpful tool for gauging youths' reoffending likelihoods. Judges likely view the ability to gauge reoffending likelihood as highly important and valuable information given their focal concerns.

## **Judges and Pre-Sentence Risk Assessments**

Generally, judges seem to appreciate the information available within pre-sentence risk assessments and their ability to enhance objectivity in sentence decisions and inform which offenders to divert (Chanenson & Hyatt, 2016; Metz et al., 2019;

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<sup>5</sup> Email the author at [Ldavis25@gmu.edu](mailto:Ldavis25@gmu.edu) for a full copy of the YASI (as used for the youths in this sample).

Monahan et al., 2018). As far as tangible impacts, Jung and colleagues (2015) and Vincent and colleagues (2016) found, on average, judges who took pre-sentence risk assessment tools into consideration were more likely to sentence high-risk offenders to restrictive placements and order or recommend more programming compared to low-risk offenders. However, both of those studies lack a control group. One quasi-experiment considered how pre-sentence risk assessments influenced sentencing in the Netherlands. The researchers matched individuals given the risk assessment with similar individuals not given the risk assessment. Interestingly, they found judges were more likely to divert or order less punishment for individuals given the risk assessment compared to individuals not given the risk assessment, regardless of risk level (van Wingerden et al., 2014). While these findings may not be applicable outside of the Netherlands, it suggests that the use of pre-sentence risk assessments may influence judges' perceptions of individuals.

Given the limited research-to-date on how judges' use pre-sentence risk assessments to make sentence decisions, there are important gaps to fill in the literature. Specifically, we do not know how consistent judges' sentencing decisions are with the results of pre-sentence risk assessments for adjudicated youths or whether biases impact judges' likelihoods to adhere to the sentence recommendations that arise from such risk assessments.

### **The Current Study**

The goal of this thesis is to examine how well judges' sentencing decisions align with the sentence recommendations that arise from pre-sentence risk assessments.

Additionally, I examine whether factors such as race and genetic sex predict risk level, as well as whether those factors and others influence judges' decisions to order less punishment, more punishment, or the exact sentence(s) recommended.

The previously mentioned research I summarized above suggests that pre-sentence RNAs may be promising tools for reducing disparities in sentence outcomes (Wang, et al., 2013). One instrument, the YASI, is used as part of a pre-sentence report that YPOs use to assess adjudicated youths' treatment needs and recidivism risk and then provide judges with sentence and/or program recommendations (Jones et al., 2016). Early evaluations of the YASI suggest it may be helpful for reducing youth risk of reoffending and for reducing disproportionality in youth supervision (Jones et al., 2016). However, if race significantly predicts risk level and risk level significantly predicts alignment, the tool may not be able to reduce or avoid racial disproportionality. This thesis uses two years of data from a YASI-using youth justice jurisdiction in Northern Virginia to evaluate the following research questions:

1. Does race significantly predict risk level?
2. How aligned are sentences with YASI-based YPO recommendations?
  - a. Are there race/ethnic and/or genetic sex disparities in the alignment of YASI-based YPO recommendations and sentencing?
  - b. Are there significant differences in alignment across judges?
  - c. Do risk level and offense type affect alignment?

Given the research discussed throughout the literature review, I hypothesize that race will significantly predict risk level. Specifically, I hypothesize Black and Hispanic youth will,

on average, be assigned higher risk levels than white youth. Moreover, I hypothesize alignment between YASI-based YPO recommendations and sentencing will differ based on youths' race and genetic sex, such that minority and male youth will be more likely to receive more punishment than recommended compared to white and female youth, respectively. I also predict that alignment will vary by judge. Furthermore, I hypothesize that as risk level increases, so will the likelihood of receiving more punishment than recommended. Finally, I hypothesize that felony offenses will be associated with greater alignment between YASI-based recommendations and sentencing given that judges likely have less discretion with more serious offenses (Myers, 2003).

## METHODS

### Study Sample

I was provided with data from a youth district court located in Northern Virginia on all youths adjudicated in the court from the start of 2018 to the end of 2020. Cases with incomplete information were dropped from the study (N=267), leaving the final sample to include 358 cases. I use the term cases rather than youths here because it is possible that the same youth was adjudicated more than once for different charges during the two-year period. In fact, three youths in the sample had two separate cases adjudicated over the two-year period. The remaining 352 youth only had one case adjudicated during the two-year period. Each adjudicated case was counted as an independent case, so the final sample is 358 cases.

Table 1 presents a description of the sample. Males made up 79.1% of the 358 cases in the sample (N=283) while females made up 20.9% (N=75). The mean age for the sample was approximately 16 years (SD=1.40) with a minimum age of 12 years and a maximum age of 20 years. 34.4% of the sample were classified<sup>6</sup> as Black (N=123), 35.5% as Hispanic (N=127), 24.0% as white (N=86), and 6.1% as other (N=22). 24.6% of cases in the had a plea indicated<sup>7</sup> (N=88) while 75.1% did not (N=269). Similarly,

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<sup>6</sup> Race was completed by the intake officer when the complaint was filed. Most youth are not in custody at the time of the complaint, so the youth probation officer could discuss it with the youth and change the intake officer's initial race classification made for the youth, but there are no requirements or formal procedures for doing so.

<sup>7</sup> The plea/no plea variable is based on a "plea form" that the clerks of court scan into the system. If a plea is indicated, it mostly likely refers strictly to the youth's charge(s) (or changes in charges) rather than the sentence. That is, what charge(s) the youth plead to, not whether there was a plea deal regarding their sentence.



27.7% of cases had a felony charge (N=99) as the most serious offense and 72.3% had only misdemeanor charges (N=259).

**Table 1.**  
*Sample Characteristics; N=358*

<b>Variable</b>	<b>N</b>	<b>%</b>
<b>Genetic Sex</b>		
<b>Male</b>	283	79
<b>Female</b>	75	21
<b>Race</b>		
<b>Black</b>	123	34
<b>Hispanic</b>	127	36
<b>White</b>	86	24
<b>Other</b>	22	6
<b>Plea</b>		
<b>Yes</b>	88	25
<b>No</b>	269	75
<b>Most Serious Current Charge</b>		
<b>Misdemeanor</b>	259	72
<b>Felony</b>	99	28
<b>Age (Years)</b>		
<b>Mean (SD)</b>	16 (1.40)	

### **Variables and Measures**

#### **The Dependent Variables**

Two models are presented in the findings section. The first model evaluates the first research question, for which the dependent variable is risk level. Risk level was measured via the full-screen YASI. The YASI is used in all stages of Virginia’s youth

legal system (DJJ, 2016; as well as in other U.S. states such as New York and North Dakota and other countries such as Canada) to assess risk and assist in case planning (Schneider, 2018). The full-screen YASI combines over fifty measures and covers the following ten domains to yield a risk score: legal history, family, school, community and peers, alcohol and drugs, mental health, aggression, attitudes, skills, and employment and free time. The legal history domain consists of thirteen measures such as age at first intake, number of intakes, and the number of times youths were committed to a Department of Juvenile Justice (DJJ) facility. The family domain consists of sixteen measures such as runaways, number of times kicked out of the home, and current living arrangements. The school domain consists of thirteen measures such as current enrollment status, academic performance (e.g., grades), and number of suspensions and expulsions. The community and peers domain consists of eight measures such as prosocial community ties and amount of time spent with antisocial peers. The alcohol and drugs domain is made up of thirteen measures capturing youths' alcohol and drug use histories as well as receptiveness to participation in alcohol/drug treatment and whether they received alcohol/drug treatment in the past. The mental health domain consists of twelve measures capturing youths' histories of mental health problems, victimization, suicidal ideation, and more. The aggression domain consists of five measures capturing aggressive behavior tendencies, tolerance for frustration, and more. The attitudes domain consists of eight measures capturing youths' law-abiding attitudes, respect for authority figures, optimism, etc.

All of these measures are combined to yield a risk score. Risk score is a six-category ordinal variable with 1 indicating low risk and 6 indicating very high risk (Low=1, Low Moderate=2, Moderate=3, Moderate High=4, High=5, and Very High=6). However, in the current study risk level is treated as an interval-level variable because the question of interest is whether the independent variables influence risk level along a continuum in a linear way. All 358 youths in the final sample received the YASI post-adjudication, but pre-sentence. The frequency distribution of risk level can be seen in Table 2.

The second model presented in the findings section evaluates the remaining research questions. In this model, the dependent variable is alignment between YPO recommendations and sentencing. Based on the YASI results, YPOs provide judges with sentence recommendations before sentencing. The primary purpose of this thesis to examine alignment between YASI-based YPO sentence recommendations and judges' final sentencing decisions. Alignment is a three-category nominal variable. The three categories are less, match, and extra. Less refers to cases when judges ordered less than what was recommended. Match refers to cases where judges ordered exactly what was recommended. Extra refers to case where judges ordered more than what was recommended. Cases in which what the YPO recommended and what the judge ordered were too nuanced to determine less, match, or extra were removed from the analysis (N=19). For example, if a YPO recommended ten hours of community service, six months of probation, and mental health counseling and the judge ordered ten hours of community service, six months of probation, and drug counseling rather than mental

health counseling, that would have been coded as nuanced and therefore removed from the analysis. Alignment is coded so that match represents the reference group. Two coders coded alignment to ensure interrater reliability. There were no discrepancies in alignment coding.

Table 2 shows the frequency distribution of alignment. Of the cases in the sample, 60.3% had sentences that were perfectly aligned with YPO recommendations (N=216). Judges ordered more than what was recommended in 27.1% of cases (N=97) and less than what was recommended in 12.6% of cases (N=45).

**Table 2.**  
*Frequency Distributions: Risk-Level and YPO Recommendation-Sentencing Alignment*

<b>Variable</b>	<b>Frequency</b>	<b>%</b>
<b>Risk-Level</b>		
1=Low	76	21
2=Low Moderate	27	8
3=Moderate	83	23
4=Moderate High	73	20
5=High	56	16
6=Very High	43	12
<b>Total</b>	<b>358</b>	<b>100</b>
<b>Alignment</b>		
<b>Match</b>	<b>216</b>	<b>60</b>
<b>Less</b>	<b>45</b>	<b>13</b>
<b>Extra</b>	<b>97</b>	<b>27</b>
<b>Total</b>	<b>358</b>	<b>100</b>

## **The Independent Variables**

Race, genetic sex, age, whether the youth accepted a plea, and whether the youths' most serious charge in the case awaiting sentencing was a misdemeanor or felony are included as predictors in the first model. Genetic sex is a dichotomous variable and was dummy coded so that 0=Male and 1=Female. Whether there was a plea agreement is another dichotomous variable which was dummy coded so that 0=No plea and 1=Plea. Three dummy variables were coded for race (Black, Hispanic, and Other) so that white is the reference group for each. Finally, whether the most serious charge in each case is a misdemeanor or felony is a dichotomous variable which was dummy coded so that 0=Felony and 1=Misdemeanor. Age is a continuous variable measured in years. All the preceding independent variables were also used in the second model. In addition to those variables, the courtroom judges are included in the second model, along with risk level (which is the dependent variable in the first model). Courtroom judge was dummy coded into nine variables so that the reference judge is the judge with highest frequency (Judge 3). The number of cases that each judge presided over ranged from 2-67 cases. Risk level is treated as an interval-level variable in the second model as well as the first. In the second model, risk level is treated as interval-level to evaluate whether the likelihood of receiving more punishment than recommended increases as risk level increases.

## **Statistical Methodology**

First, to evaluate whether genetic sex, age, race, whether a plea was accepted, and seriousness of offense (misdemeanor versus felony) predict risk level, I conducted a

multiple linear regression. Next, given that I am interested in examining how well the various independent variables predict alignment between JPO recommendations and sentencing, a three-category nominal variable, I conducted a multinomial logistic regression. I conducted all analyses via IBM SPSS Statistics 26.

## **FINDINGS**

### **Model 1**

A multiple linear regression was conducted via IBM SPSS Statistics 26 to assess whether genetic sex, age, race, whether a plea was accepted, and seriousness of offense (misdemeanor versus felony) predict risk level.

#### **Assumptions**

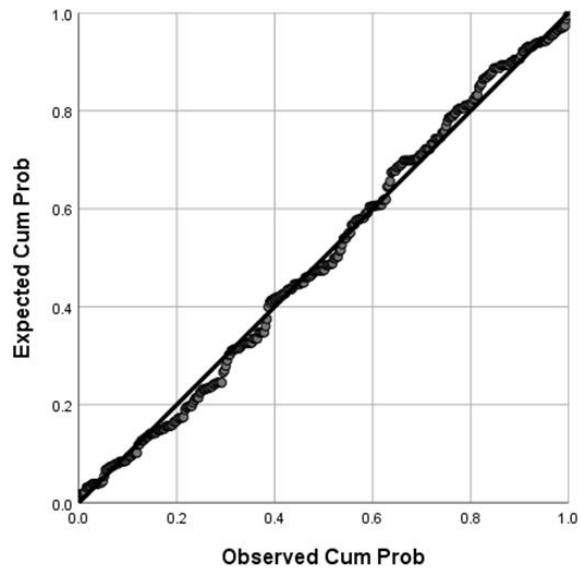
There are five assumptions of multiple linear regressions: independent observations, non-multicollinearity, normality, homoscedasticity, and linearity. 352 observations were completely independent. As mentioned earlier, three youths were adjudicated two separate times over the two-year period, resulting in six additional cases that may not be truly independent of one another. However, each observation does represent an independent court case. Next, multicollinearity is addressed. As seen in Table 3 below, the bivariate correlations were relatively low, and therefore, multicollinearity did not appear to be a problem. Further analysis revealed that the VIF values (see Table 6) were all between 1 and 2. This confirms that the assumption of non-multicollinear independent variables has been met. To assess normality, a normal Predicted Probability plot is shown in Figure 1. The normal Predicted Probability plot is a graphical technique that assesses the normality of a dataset (Chambers et al., 1983). Given the approximately straight line depicted by the normal Predicted Probability plot, the residuals appear to be relatively normally distributed. Therefore, the assumption of normality does not appear to have been violated. In Figure 2, a scatterplot is presented

with the regression's standardized predicted risk levels plotted on the x-axis and the regression's standardized residuals plotted on the y-axis. There does appear to be an obvious pattern in the scatterplot, which is the result of discrete independent variables and an ordinal dependent variable. Six very distinct lines can be seen, representing the six risk levels. The variability in the residuals is roughly the same for each risk level, suggesting homoscedasticity has not been violated. While the dependent variable is not truly continuous, the sample size is large enough that the central limit theorem establishes the robustness of this model (Rosenblatt, 1956). Therefore, the assumptions of homoscedasticity and linearity are not violated.

**Table 3.**  
*Bivariate Correlations for Model 1*

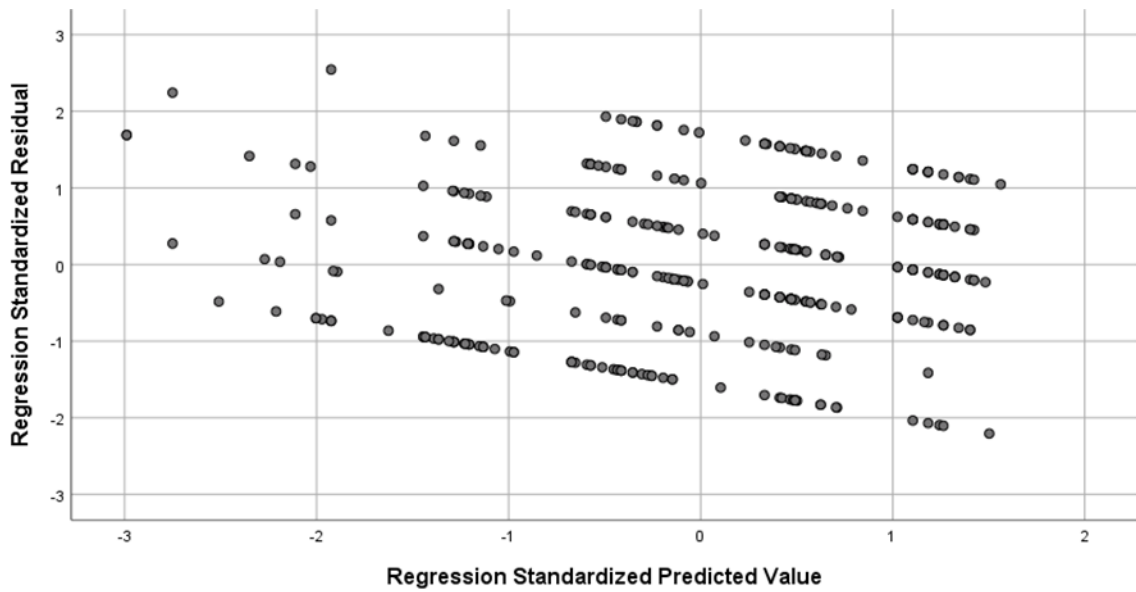
	<b>Risk</b>	<b>Plea</b>	<b>Misdemeanor</b>	<b>Female</b>	<b>Age</b>	<b>Black</b>	<b>Hispanic</b>	<b>Other</b>
<b>Risk</b>	1.000							
<b>Plea</b>	-.120	1.000						
<b>Misdemeanor</b>	-.059	.034	1.000					
<b>Female</b>	-.282	.025	.134	1.000				
<b>Age</b>	.001	-.078	-.016	-.116	1.000			
<b>Black</b>	-.033	.021	-.075	.058	-.012	1.000		
<b>Hispanic</b>	.218	-.027	.050	-.020	.011	-.536	1.000	
<b>Other</b>	-.017	-.011	.054	.040	.013	-.186	-.189	1.000





**Figure 1.**  
*Normal Predicted Probability Plot of Regression (Standardized Residual) for Model 1*

*Note: DV=Risk*



**Figure 2.**  
*Scatterplot of Standardized Predicted Risk and Standardized Residuals for Model 1*

*Note: DV=Risk*

## Model 1 Results

A summary of the model can be seen in Table 4. Based on the R-Square of 0.158, roughly 15.8% of the variation in risk level is explained by the model. Looking at Table 5, we see that the model is significant ( $F=9.400$ ,  $df=7$ ,  $p<.0001$ ), which indicates that the predictor variables collectively contribute to explaining risk level among the youths in the sample. Four independent variables had a significant impact on risk level at the pre-determined alpha level of  $p < .05$ . Those were the dummy variables for female, plea, Black, and Hispanic (see Table 6).

**Table 4.**  
*Summary of Multiple Linear Regression Predicting Risk (Model 1)*

<b>R Square</b>	<b>Std. Error of the Estimate</b>
<b>0.158</b>	1.524

**Table 5.**  
*Fixed-Effects ANOVA Results Using Risk as the Criterion*

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	152.927	7	21.847	9.400	.000
<b>Residual</b>	813.408	350	2.324		
<b>Total</b>	966.335	357			

**Table 6.**  
*Regression Analysis Summary for Predicting Risk*

	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>	<b>Tolerance</b>	<b>VIF</b>
<b>(Constant)</b>	3.982	0.948	-	4.200	0.000	-	-
<b>Plea</b>	-0.418	0.188	-0.110	-2.226	<b>0.027</b>	0.992	1.008
<b>Misdemeanor</b>	-0.091	0.183	-0.025	-0.499	0.618	0.972	1.028
<b>Female</b>	-1.163	0.202	-0.288	-5.760	<b>0.000</b>	0.961	1.040
<b>Age</b>	-0.052	0.058	-0.044	-0.892	0.373	0.980	1.020
<b>Black</b>	0.593	0.215	0.172	2.760	<b>0.006</b>	0.622	1.608
<b>Hispanic</b>	1.098	0.213	0.319	5.145	<b>0.000</b>	0.624	1.601
<b>Other Race</b>	0.600	0.365	0.088	1.642	0.102	0.843	1.186

The impact of race and gender on risk level was in the hypothesized direction. Females received lower risk levels than males, and Black and Hispanic youths received higher risk scores compared to White youths. Specifically, females received risk scores that were, on average, 1.163 levels lower compared to males (B=1.163; t=-5.760; p=.000). Being Black or Hispanic was associated with an increase in risk level of 0.593 and 1.098, respectively, compared to White youths (For Black youth: B=0.593; t=2.760; p=.006; For Hispanic youth: B=1.098; t=5.145; p=.000). Additionally, youths who took a plea received lower risk scores relative to youths who do not take a plea (B=-0.418; t=-2.226; p=.027). The Hispanic variable has the highest Beta among the statistically significant predictors, suggesting that being Hispanic is the strongest predictor of risk level (Beta=0.319) in this model.

Age, misdemeanor, and the “other” race variable were not significant predictors of risk score. This indicates that youths were not given higher risk scores because of their age (t=-0.892, p=0.373) nor because the most serious charge in their case was a

misdemeanor versus a felony ( $t=-0.499$ ,  $p=0.618$ ). Additionally, youths who identified as “other” for race (so not Black, Hispanic, or White) did not receive statistically significant different risk scores compared to white youths ( $t=1.642$ ,  $p=0.102$ ) despite having a reasonably large effect ( $B=0.600$ ). For these three independent variables with non-significant effects, we fail to reject the null hypotheses that there are no statistically significant differences in risk score for youths convicted of misdemeanor offenses compared to felony offenses, for youths who identified their race as “other” compared to white youths, and no significant differences in risk score across age.

Outlier diagnostics were examined using IBM SPSS. No cases stood out as obvious outliers; none of the standardized or studentized residuals were greater than 3, and the maximum Cook’s D was 0.027. Cook's D (or Cook’s distance) is used in regression analyses to identify highly influential data points (or, outliers) (Cook, 1977). That the maximum Cook’s D was 0.027 suggests none of the data points were highly influential (e.g., no data points were significantly pulling the mean in a certain direction).

### **Model 2**

The next model is a multinomial logistic regression examining how well genetic sex, age, race, whether a plea was accepted, whether the most serious conviction in the case is a misdemeanor or felony, risk level, and the judge presiding over the case predict alignment between YASI-based YPO recommendations and sentencing.

## Assumptions

Unlike the multiple linear regression presented above, multinomial logistic regressions do not assume normality, homoscedasticity, or linearity. However, the assumptions of independent observations and no-multicollinearity still apply.

Once again, the observations are independent and the dependent variable categories are mutually exclusive and exhaustive.

## Model 2 Results

The model is statistically significant at the  $p < 0.10$  level, but not at the  $p < 0.05$  level (Chi-square=46.571;  $df=34$ ,  $p=0.074$ ; see Table 7). Based on the Pseudo R-Squares presented in Table 8, it is estimated that between 12.2% and 14.5% of the variation in alignment between recommendations and sentencing is explained by the model. Only two of the independent variables had an overall effect on alignment, Judge 5 and Judge 7 (see Table 9).

**Table 7.**  
*Model Fitting Information for Model 2*

	<u>Model</u>	<u>Likelihood Ratio Tests</u>		
	<u>Fitting</u>			
	<u>Criteria</u>	Chi-Square	df	Sig.
	-2 Log Likelihood			
<b>Intercept Only</b>	639.789			
<b>Final</b>	593.218	46.571	34	0.074

**Table 8.**  
*Pseudo R Squares for Model 2*

<b>Cox and Snell</b>	0.122
<b>Nagelkerke</b>	0.145

**Table 9.**  
*Model 2, Overall Effects with Alignment as the Criterion*

	Model Fitting	Likelihood Ratio Tests		
	Criteria	Chi-Square	df	Sig.
	-2 Log Likelihood			
Intercept	593.218 <sup>a</sup>	0.000	0	
Age	595.130	1.912	2	0.384
Risk	595.823	2.605	2	0.272
Black	596.008	2.790	2	0.248
Hispanic	593.613	0.395	2	0.821
Other	593.560	0.343	2	0.843
Judge 1	594.225	1.007	2	0.604
Judge 2	593.465	0.247	2	0.884
Judge 4	593.681	0.464	2	0.793
Judge 5	603.123	9.906	2	<b>0.007</b>
Judge 6	595.356	2.139	2	0.343
Judge 7	600.079	6.861	2	<b>0.032</b>
Judge 8	593.728	0.510	2	0.775
Judge 9	597.284	4.066	2	0.131
Judge 10	594.271	1.053	2	0.591
Misdemeanor	597.820	4.603	2	0.100
Plea	593.829	0.611	2	0.737
Female	594.223	1.006	2	0.605

Interestingly, when looking at the ability of each independent variable to predict less punishment relative to a match between recommendations and sentencing and to predict extra punishment relative to a match between recommendations and sentencing separately, none of the independent variables were statistically significant for predicting

the former (see Table 10). However, three variables reached statistical significance for predicting extra punishment relative to a match (see Table 10). These variables are misdemeanor, Judge 5, and Judge 9. The coefficients presented in Table 10 represent the multinomial logit estimate for a one unit increase in the predictor for that category of the alignment relative to a perfect match in alignment when all other variables in the model are held constant. The multinomial logit estimates for the three significant predictors bolded and underlined in Table 10 are 0.632 (df=1, p=0.031) for misdemeanor, 1.689 (df=1, p=0.005) for Judge 5, and -16.595 (df=1, p<0.001) for Judge 9. So, we conclude that youths charged with a misdemeanor are more likely than those charged with a felony to receive more punishment than recommended rather than the exact punishment recommended. Similarly, youths whose cases were judged by Judge 5 were more likely to be given extra punishment than recommended rather than the exact punishment recommended. On the other hand, youths whose cases were judged by Judge 9 were significantly less likely to receive extra punishment than recommended rather than the exact punishment recommended. In other words, Judge 9 was more likely to order exactly what was recommended rather than order more than what was recommended relative to the comparison judge. However, Judge 9 only presided over two of the cases in the sample which undermines the reliability of that particular finding. As can be seen in Table 10, none of the independent variables significantly predicted less punishment relative to a match between what was recommended and what the judge ordered. Contrary to my hypotheses, neither race nor genetic sex significantly predicted alignment. While the effects for race did not reach statistical significance, the effect for

Black youths is of a meaningful size ( $B=0.512$ ;  $\text{Exp}(B)=1.668$ ) and is in the expected direction.

Various interaction terms were introduced into the model (e.g., gender \* race). However, none of them reached significance. As such, the reported model is the original model, for which no interaction terms are included.



**Table 10.***Regression Results by Extra and Less Punishment Compared to Perfect Alignment*

Overall Alignment <sup>a</sup>		B	Std. Error	df	Sig.	Exp(B)
EXTRA	Intercept	15.150	3.843	1	0.000	
	Age	-0.127	0.094	1	0.178	0.880
	Risk	-0.136	0.087	1	0.118	0.873
	Black	0.512	0.363	1	0.159	1.668
	Hispanic	-0.217	0.349	1	0.533	0.805
	Other	-0.150	0.568	1	0.792	0.861
	Judge 1	-0.165	0.443	1	0.710	0.848
	Judge 2	0.133	0.418	1	0.750	1.142
	Judge 4	0.103	0.415	1	0.804	1.108
	Judge 5	1.689	0.606	1	<b>0.005</b>	5.417
	Judge 6	0.410	0.537	1	0.445	1.507
	Judge 7	1.013	0.573	1	0.077	2.753
	Judge 8	-0.546	1.466	1	0.709	0.579
	Judge 9	-16.595	1.617	1	<b>0.000</b>	6.204E-08
	Judge 10	0.198	0.595	1	0.739	1.219
	Misdemeanor	0.632	0.294	1	<b>0.031</b>	1.882
	Plea	0.172	0.314	1	0.582	1.188
Female	0.192	0.338	1	0.571	1.211	
LESS	Intercept	5.609	3.892	1	0.149	
	Age	-0.074	0.125	1	0.552	0.928
	Risk	0.002	0.113	1	0.986	1.002
	Black	-0.273	0.464	1	0.557	0.761
	Hispanic	-0.033	0.500	1	0.947	0.967
	Other	-0.452	0.778	1	0.562	0.637
	Judge 1	-0.649	0.649	1	0.317	0.523
	Judge 2	-0.191	0.638	1	0.765	0.826
	Judge 4	0.496	0.753	1	0.511	1.641
	Judge 5	-0.024	0.639	1	0.970	0.976
	Judge 6	-0.708	0.680	1	0.298	0.493
	Judge 7	-0.827	0.610	1	0.175	0.437
	Judge 8	13.731	0.000	1	0.263	919147.82
	Judge 9	-17.165	0.000	1	0.628	3.509E-08
	Judge 10	-0.663	0.764	1	0.986	0.516
Misdemeanor	0.215	0.398	1	0.588	1.240	
Plea	-0.157	0.384	1	0.682	0.854	
Female	0.429	0.476	1	0.367	1.536	

## DISCUSSION

Given the history of racial disproportionalities in the youth legal system, youth justice agencies' increasing reliance on RNAs and the RNR model, and the limited research on how judges' use pre-sentence risk assessments to make sentencing decisions, this thesis examines the relationship between race and YASI produced risk-level and between race and alignment in YASI-based YPO sentencing recommendations and judges' sentencing decisions, among other potential predictor variables. Despite the increased use of pre-sentence risk assessments in youth courts, extant literature has yet to evaluate how aligned judges' sentencing decisions are with the results of such assessments. As such, the primary goal of this thesis is to examine alignment between the sentences judges ordered and the sentencing recommendations they were given based on a pre-sentence RNA. This was done using two years of data on all youths sentenced in a YASI-using youth jurisdiction in Northern Virginia.

Before I examined alignment between sentencing and YASI-based YPO recommendations, I first looked at whether race significantly predicted risk level among the sample of youths. I hypothesized that YPOs would tend to assign Black and Hispanic youths higher risk levels than white youths. This hypothesis is based on attribution theory and literature findings that posit decision-makers tend to attribute criminality differentially depending on the adjudicated person's race. For instance, Bridges and Steen (1998) found POs were more likely to attribute crimes committed by Black youth to static internal characteristics and that POs weighed criminality attributed to internal

characteristics most heavily in assessments of recidivism risk (Bridges & Steen, 1998). Moreover, people tend to view young, Black individuals as more dangerous and threatening, more culpable, and less capable of reform compared to young white individuals (Steffensmeier et al., 1998; Ulmer & Kramer, 1996; Dixon & Rosenbaum, 2004). As such, I suspected that YPOs might score minority youth more harshly on RNAs than white youth. I conducted a multiple linear regression to determine whether race, among other independent variables, significantly predicted YASI produced risk score among my sample. However, even if race does significantly predict risk score, it could be a result of youths from minority racial groups truly being at a higher risk to reoffend. The data used for this study cannot differentiate between the two; as such, I cannot determine the cause of any significant race effects. Risk assessments were conducted by YPOs in-between adjudication and sentencing. The results of the multiple linear regression support the hypothesis that minority youths received higher risk-levels compared to white youth. Again, however, I cannot determine whether this difference is the result of YPO biases and/or prejudice, group differences in the types, seriousness, and/or criminal histories of the youths in the sample, some combination of the two, or some other explanation.

For example, it may be that questions within the tool itself are biased towards certain racial groups. As discussed earlier, Harcourt (2015) argued that risk acts as a proxy for race via criminal history, and Skeem and Lowenkamp (2016) found that the association between race and recidivism was mediated by criminal history. On the other hand, the significant race effect found in the first model of this thesis may be consistent

with attribution theory. Just as Bridges and Steen (1998) found that YPOs attributed criminality to different causes depending on youths' race, it may be that some YPOs differentially scored similar youth because of attributions, assumptions, stereotypes, biases, etc. For instance, imagine a YPO must conduct a YASI for a Black youth and a white youth, and the two youths describe nearly identical family support networks. It is possible that the YPO holds preconceived notions and stereotypes about Black youths' family networks compared to white youths' family networks that may lead the YPO to select "some family support network" for the Black youth and "strong family support network" for the white youth, even though they described identical levels of family support networks. While one or two such nuances may not influence overall risk scores, enough nuances throughout the assessment might by accumulating and ultimately pushing an individual into the next risk category (i.e., from moderate-high risk to high risk).

Again, although the model did yield a significant association between race and risk level, we cannot make a definitive statement about causality. Future research should utilize more rigorous research methods by matching white youth with comparable minority youth to determine more precisely why the YPOs using the YASI ranked minority youths higher on risk relative to white youths in the sample.

The remaining research questions under evaluation were all related to alignment between YASI-based YPO recommendations and sentencing. Specifically, I wanted to know whether any race or genetic sex disparities in the alignment of YASI-based YPO recommendations and sentencing existed. I also wanted to know whether there were

significant differences in alignment across judges and whether risk level and offense type (misdemeanor versus felony) affected alignment. I predicted being a minority or male youth would be associated with an increased likelihood of receiving more punishment than recommended relative to white and female youth, respectively. I also predicted that alignment would vary by judge, that the likelihood of receiving more punishment than recommended would increase with risk level, and that being convicted of felony offenses would be associated with greater alignment between YASI-based recommendations and sentencing. To test these hypotheses, I conducted a multinomial logistic regression where the dependent variable was alignment between YASI-based YPO recommendations and sentencing. None of the predictor variables had an overall effect on alignment. Similarly, none of the independent variables reached statistical significance when predicting less punishment relative to exact matches between YPO recommendations and sentencing. Just three variables (misdemeanor and two of the judges) reached statistical significance for predicting extra punishment relative to a match.

That the hypothesized relationship between race and alignment and between genetic sex and alignment was not supported by the model is a positive finding; it tells us that judges' decisions to order exactly what was recommended versus more or less than what was recommended were not likely based on adjudicated youths' race or genetic sex. While these findings may support the use of the YASI for avoiding race and sex disparities in sentencing, the lack of a control/comparison group prohibits us from making a declaration about whether race and/or sex disparities in sentencing were reduced. This is because we do not know whether race and/or sex disparities in

sentencing outcomes existed prior to the agency's adoption of the YASI. It also suggests, together with the descriptive statistic showing that judges ordered exactly what was recommended 60.3% of the time, that judges tend to go along with YASI-based recommendations. This may be because judges view the YASI as high-quality and reliable, or perhaps they are simply willing to use the YASI regardless of how reliable they think the tool is. Either way, strong alignment between YASI-based recommendations and sentencing may or may not be problematic depending on YPOs' use of the tool and whether the tool is truly race-neutral. Future research should employ research methods that allow researchers to make pre/post comparisons in alignment between YASI-based YPO recommendations and sentencing.

Two hypotheses were partially supported by the model: that youths convicted of felony offenses would be associated with greater alignment between YASI-based recommendations and sentencing and that alignment would vary across judges. Alignment was greater for youths whose most serious charge subject to sentencing was a felony and not a misdemeanor, but only when looking at extra punishment versus a perfect match between YPO recommendations and sentencing. In other words, judges were more likely to order extra punishment rather than the exact punishment recommended for youths whose most serious charge in the case being sentenced was a misdemeanor. However, there was no significant relationship between misdemeanor versus felony in predicting less punishment compared to a perfect match in YPO recommendations and sentencing. Myers (2003) finding, discussed earlier, that judges have less discretion with more serious offenses helps explain the present finding that

judges were more likely to order exactly what was recommended by YPOs for youths charged with felonies compared to youths charged with misdemeanors when looking at exact matches compared to extra punishment. Moreover, that the misdemeanor variable is only significant when considering extra punishment relative to a match between recommendations and sentencing, but not between less punishment relative to a match between recommendations and sentencing, suggests that when judges have the ability to exercise discretion, they tend to use it to order more punishment. This suggests a potential trend among judges to over-sanction low-level crimes, which could be harmful (e.g., Bonta and colleagues (2000) finding that when low-risk individuals receive intensive programming, it may have a harmful effect on recidivism likelihood, which was discussed earlier). More research is needed to examine why judges may over-sanction youths adjudicated for low-level offenses. It may be in the agency's best interest to discuss the potential harms of over-sanctioning low-risk youths with the judges to reduce the occurrence of judges ordering more than what was recommended rather than exactly what was recommended for misdemeanor offenses compared to felony offenses.

Finally, the hypothesis that alignment would vary across judges was partially supported by the model. Relative to the comparison judge, two judges were significantly more likely to recommend extra punishment relative to the exact punishment recommended. As mentioned in the findings, one of the judges for which there was a significant effect only presided over two of the cases in the sample. Therefore, that effect is likely unreliable and should be interpreted with caution. Nonetheless, the significant effects suggest that these two judges may be particularly punitive compared to the other

judges in the sample. One potential recommendation based on this finding is for the agency to conduct more research to confirm or deny whether these judges are in fact more punitive compared to other judges. If they are found to be more punitive, the agency may conduct workshops/trainings with these judges to reduce any unnecessary punitiveness and increase uniformity in alignment between judges.

### **Implications**

The utilization of race-neutral pre-sentence RNAs may help YPOs and judges make decisions that are consistent with their focal concerns while simultaneously reducing their perceptual shorthand. As discussed in the literature review, decision-makers rarely have all the information in any specific case. These gaps in knowledge force decision-makers to develop a perceptual shorthand to determine what the optimal decision is in the limited time they have (Ericson & Eckberg, 2016; Steffensmeier et al., 1998). Decision-makers' development of a perceptual shorthand may bring them to an automatic reliance on stereotypes, assumptions, and implicit bias. Because young, Black individuals are typically viewed as more dangerous, more threatening, more blameworthy, and less likely to rehabilitate compared to young white individuals (Steffensmeier et al., 1998; Ulmer & Kramer, 1996; Dixon & Rosenbaum, 2004), Black youth may be especially disadvantaged when decision-makers act using a perceptual shorthand. For example, judges who hold implicit biases that Black individuals are more blameworthy and more dangerous to the community compared to white individuals may act on those biases, perhaps unknowingly, when they are pressed for time and missing information. In such a situation, a judge may think the Black individual is deserving of



more serious punishment relative to a similar white individual and order a tougher sentence for the Black individual.

Pre-sentence RNAs like the YASI compile a significant amount of information on individuals before a judge determines their sentence. They offer a standardized way to gather important information on individuals regarding their recidivism risk as well as to identify individuals' protective factors. Based on that information, YPOs may develop case plans and offer sentence recommendations to judges in accordance with the RNR framework. This has the potential to reduce any differential treatment by judges (as well as of YPOs making differential sentence recommendations based on race) that may have been caused by a lack of information, being pressed for time, and thus relying on misconceptions about people because they belong to a certain race. Differential treatment based on race is unjust, and pre-sentence RNAs may help reduce the occurrence of differential selection at the sentencing stage.

Pre-sentence RNAs may help address the differential selection explanation to racial disproportionalities at sentencing, but they may fail to recognize occurrences of differential selection at earlier legal system stages. In this thesis, race significantly predicted risk level. This begs the question, why are Black and Hispanic youth more at risk to reoffend, or perceived to be more at risk to reoffend, compared to white youth? If this is largely driven by, for instance, differences in prior record, it may be the case that Black and Hispanic youth are simply more likely to engage in delinquency compared to white youth. Equally as possible, it may be that Black and Hispanic youth are more likely to be stopped by police officers (as was the case in Epp et al., (2014)) and therefore more

likely to be caught, charged, and adjudicated. Of course, both things may be occurring at the same time. While pre-sentence RNAs may help reduce some of the racial disparity that exists in youth sentence outcomes, they are certainly not a one-size-fits-all solution to racial equality in the youth legal system.

More research is needed to understand the ability of and extent to which pre-sentence RNAs may reduce racial disparities in sentence outcomes and treatment plans. If these tools do effectively reduce decision-makers' need to rely on stereotypes, assumptions, biases, and the like, they should be adapted for use and empirically evaluated in earlier stages such as at arrest.

Similarly, predictive validity is one thing, but the ability of the treatment and sentencing plans derived from RNAs to reduce recidivism and rehabilitate individuals is an entirely different question. In other words, identifying risk level and criminogenic needs are only the first step. The next step is understanding how the individuals using the tool *actually use it*, which was one of the aims of the current study. However, studies of tool implementation should also include other criminal legal actors such as YPOs and should consider key implementation issues like fidelity, as well. Additionally, agencies should examine the effectiveness of the responsivity component. For instance, are the sentence recommendations suggested by the tool the most optimal sentence recommendations?

As discussed earlier, RNAs are only effective to the extent decision-makers adhere to them. In the current study, judges strictly adhered to YASI-based sentence recommendations most of the time. At the same time however, when judges deviated

from ordering exactly what YPOs recommended (per the YASI), it tended to be to order extra punishment. While we should not expect judges to entirely adhere to sentence recommendations every time (as that would wipe away judicial discretion and ultimately remove the need for judges), it is surprising that judges only ordered less than what was recommended 13% of the time. If the YASI over-gauges risk and judges tend to assign what was recommended or more than what was recommended, it may result in over-punishing and/or net widening. As such, tools like the YASI and decision-makers' utilization of such tools should be evaluated routinely.

### **Limitations**

Before concluding, some limitations should be noted. First, while regression analyses are a form of correlational analyses and therefore do not permit us to establish causality. Rather, they tell us how strong the association is between the predictor variables and the dependent variable. Moreover, future studies should use pre-post comparison designs to determine whether the tool is associated with reductions in sentencing disproportionality. Since there are no data on sentencing disparities before the YASI was introduced in the dataset used in the current study, I cannot determine whether the YASI produced any reduction in sentence disparities or disproportionalities. More data and more rigorous research methods (e.g., pre-post comparison designs) are needed to determine whether the agency's use of the YASI produced changes. Finally, the sample used in this thesis represents one youth court agency in Northern Virginia. As such, these findings are not generalizable beyond the sample.

### **Concluding Remarks**

The primary goal of this thesis was to begin to fill a gap in the literature which is how well judges' sentencing decisions align with the sentence recommendations that arise from pre-sentence risk assessments. The simple descriptive statistic that 60.3% of all sentences were perfectly aligned with YPOs' recommendations suggests that, at the very least, judges do consider YASI-based recommendations when making sentence decisions. Future research should utilize a mixed methods approach to better capture judges' attitudes about the usefulness of such tools as well as how much weight judges give to such tools when reaching sentence decisions. Moreover, the lack of any significant race or sex differences in alignment between YASI-based YPO recommendations and sentencing tells us that judges' decisions on how closely to align with recommendations were not influenced by youths' race or genetic sex, which is a positive finding. More research is needed to better understand when and why judges choose to apply the exact sentences YPOs recommended and when and why judges choose to apply more or less punishment than YPOs recommended. While this thesis begins to address a gap within the literature regarding how judges use pre-sentence risk assessments when making sentence decisions, much more research on the topic is needed.

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## **BIOGRAPHY**

Lynnea Davis graduated from High School North in Toms River, New Jersey, in 2016. She went on to be a Big Ten student-athlete at Rutgers University-New Brunswick where she received her Bachelor of Arts in Psychology and Criminal Justice with a minor in Sociology in 2019. She graduated summa cum laude. During her senior year of undergraduate studies, she interned at a secure residential facility for incarcerated youths where her passion for youth justice was solidified. She is currently a Graduate Research Assistant and student at George Mason University studying to earn her Master of Arts and Doctor of Philosophy degrees in Criminology, Law and Society.