Patterns of Diagnosis and Treatment Referral for Justice-Involved Youth

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Abstract

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There is widespread recognition that adolescents with mental health needs are overrepresented in the juvenile justice system (Robst et al., 2017). In recognition of the limited effectiveness and possible negative effects of incarceration on recidivism, juvenile courts utilize mental health placements, including community-based treatment and residential treatment centers, as an alternative disposition (Mallett & Boitel, 2016). Psychological assessments are often requested by judges to identify emotional, behavioral, environmental, or substance abuse problems that may contribute to offending behavior and to inform recommendations about possible interventions, including mental health treatment (Borum & Otto, 2004). However, there is evidence that the factors that most strongly predict which youth are referred for mental health treatment instead of incarceration include factors that may not be related to diagnosis or need, such as race and gender (Herz, 2001). The goal of the current study is to examine

disproportionality in mental health diagnoses and treatment referrals in a sample of adolescents referred by juvenile court judges for psychological evaluations. Analyses using logistic regression indicated that clinical variables such as depression, withdrawal, substance use, and aggression, rather than demographics, most strongly predicted the type of diagnosis a youth received and whether they were referred to residential treatment. Exploration of unadjusted odds ratios indicated that there may still be disproportionality in some outcomes, particularly the diagnosis of externalizing disorders. Implications for clinical practice and research are discussed.

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Chapter 1: Introduction

There is widespread recognition that adolescents with mental health needs are overrepresented in the juvenile justice system (Robst et al., 2017). Estimates reveal that approximately 50 to 70% of justice-involved youth meet criteria for a mental health disorder. Of those, approximately 20% experienced "severe" symptoms and approximately two-thirds met criteria for two or more disorders (Grisso, 2008; Underwood & Washington, 2016). Despite these elevated rates of need, justice-involved youth are less likely than the general population to have their mental health challenges identified or to have received services (McCormick et al., 2017; Underwood & Washington, 2016).

In recognition of the limited effectiveness and possible negative effects of incarceration on recidivism, juvenile courts utilize mental health placements as a disposition (Mallett & Boitel, 2016). However, there is evidence that the factors that most strongly predict which youth receive mental health treatment within juvenile justice include those that may not be related to diagnosis or need (Herz, 2001). For example, in one of the first studies exploring mental health placement, Herz (2001) found that gender was an important predictor, such that females were four times more likely to receive a mental health placement, rather than a correctional placement, when compared to males. Herz also found that race predicted treatment such that White youth were also four times more likely than their Black peers to be placed in a residential treatment setting rather than a correctional facility (Herz, 2001).

Juvenile court judges typically refer youth to mental health placements that are either community-based or residential treatment centers (McCord et al., 2001). Residential treatment is costly and highly restrictive, with research indicating mixed effectiveness (Holstead et al., 2010; Patel et al., 2018; Pottick et al., 1995). In addition to mixed evidence of effectiveness, there are

several notable limitations associated with residential treatment (Cruise et al., 2016; Henggeler, 2016). First, there is evidence that exposure to the violence and delinquency within a residential treatment center can lead to or exacerbate mental health conditions. Second, removal from the community, and in turn their school, does not improve a youth's academic achievement and many youths do not re-enroll in their neighborhood school when they return to their community. Third, placement in residential treatment centers disrupts family relationships and can cause youth to lose the support of their parents, siblings, and extended family while they are away (Henggeler, 2016). Such placements may also increase youth association with delinquent peers. Finally, such placements can be financially burdensome. The average cost of residential treatment for justice-involved youth is approximately $148,767 per year (Justice Policy Institute, 2014). This money could provide significant amounts of effective treatment within the community.

Summary and Organization of the Proposal

This dissertation is organized into five chapters. Chapter one (this chapter) provided a brief introduction to the central topic of the current study. The second chapter reviews the literature related to systemic racism, disproportionality, juvenile justice, and mental health treatment. It will also include the research questions and hypotheses presented by the current study. The third chapter introduces the methodology utilized and details the population, data collection, methods of analyses, and data handling. In the fourth chapter, results of the analyses are provided. Finally, in chapter five, the results of this study are discussed in the context of current practice and existing literature. Recommendations are made for practice and future research. References, tables, figures, and appendices follow the fifth chapter.

Chapter 2: Literature Review

Decades of research indicates that White racism within health care results in poorer quality of care for minority Americans and contributes to a host of negative effects (Feagin & Bennefield, 2014). For example, Whitman, Ansell, and Orsi (2011) reviewed vital records data to evaluate breast cancer mortality rates for women in New York City, Chicago, and the United States as a whole from 1980-2005. They found that in 1980, all three areas had approximately equal mortality rates by race. This was consistent until approximately 1990, at which time White mortality rates began to decline while Black rates remained constant. In 2005, the Black to White mortality rate ratios were 1.36 in New York City, 1.38 in the United States, and 1.98 in Chicago. Another study found that numerous researchers have observed racial differences in access to diagnostic and therapeutic interventions for heart disease and stroke, even when they share similar disease characteristics to their White peers (Mayberry et al., 2000). As a result of such studies, it has been argued that "neglecting to address race or creating practices and policies which do not include the contextualization of race will likely continue to yield inequities," (Castle et al., 2019, p.28).

Systemic Racism Theory

Ture and Hamilton (1967) defined racism as "the predication of decisions and policies on considerations of race for the purpose of subordinating a racial group and maintaining control over that group," (p.19). Furthermore, they argued that racism can be both an act by an individual as well as systemic. In their writings, they highlighted institutional (systemic) racism as "less overt" and "less identifiable in terms of specific individuals committing the acts. But [it] is no less destructive to human life," (Feagin & Bennefield, 2014, p.3-4).

Feagin (2006) introduced Systemic Racism Theory to articulate the components of racism as observed in the United States. He dismissed the common view of racial conflicts that argued that these are "matters of prejudice and stereotyping or of individual and small group discrimination mainly directed against people of color… not fundamental, but rather an unfortunate socioeconomic condition tacked on to an otherwise healthy society…" (p.4). Systemic Racism Theory contends instead that racism occurs within "complex, interconnected, and interdependent social networks, organizations, and institutions," (Feagin, 2006, p.16) that facilitate the continued oppression of Black Americans over generations.

Systemic Racism Theory proposes several interrelated factors that facilitate the oppression of minority group members (Feagin & Bennefield, 2014; see Appendix A). These factors include economic domination, a racial hierarchy, racial discrimination and cultural imperialism, racist ideology, and the "white racial frame."

Feagin argues that economic domination has been central to the United States since its founding. Specifically, he observes the continuous dependence of White Americans on the labor of Black Americans which began with theft of land and labor at the founding of this country and continued through enslavement, segregated jobs, discriminatory wages, exclusion from financial opportunities available to Whites, and marginalization in the economy (Feagin, 2006). One study estimated that during segregation (1929 to 1969), $1.6 trillion dollars in wealth was taken from people of color within this system of economic oppression (Feagin, 2006; Swinton, 1990). There continues to be evidence of long-term impact on Black Americans to date. For example, the median income of Black Americans is less than 60% of that of White Americans (Wilson & Williams, 2019).

Another factor within systemic racism is the presence of a dominant racial hierarchy. Feagin argued that asymmetrical power enables White Americans to both "take for their own" (p. 21) and contributes to an overall sense of superiority. Further, this hierarchy simultaneously attempts to force Black Americans to act as White Americans want and works to alienate Black Americans from White Americans. This hierarchy enables dominant political, economic, and social institutions to ignore the needs of Black Americans.

Related to economic domination, the presence of other systems of racial discrimination and cultural imperialism contribute to the disenfranchisement of Black Americans. Black Americans continue to experience discrimination in other central systems including education, housing, politics, public services, and policing (Feagin, 2006). While overt discrimination has been largely outlawed, more covert forms continue to exist as proxies for controlling Black Americans. These systems facilitate cultural imperialism, including the imposition of White values on those who are oppressed. The majority of these institutions utilize a Eurocentric standard for cultural and political practices and pressure others to conform in order to possibly benefit (Feagin, 2006).

Consistent with other models of oppression, racist ideology plays a significant role in the justification and perpetuation of White domination in the United States. This ideology includes an extensive set of ideas that justify White power and privilege as "meritorious and natural and accenting the alleged superiority of whites…" (Feagin, 2006, p.28). This ideology also includes patriarchal metaphors and messaging, which have been present since slavery. Consciously or otherwise, many Whites have extended this language and understanding to defend the hierarchy of Whites, often described as a "natural" order.

A unique contribution of Systemic Racism Theory is the inclusion of the concept of "white racial framing." This frame refers to "an organized set of racialized ideas, stereotypes, emotions, and inclinations to discriminate," (Feagin, 2006, p.25). White framing, Feagin argued, provides an interpretative schema that shapes White assessments of everyday encounters. This frame "often exists in individual minds at a non-reporting and unconscious level," (p.49) making it resistant to counter evidence. In particular, the White American frame includes negative stereotypes, images, and metaphors for Black Americans and asserts positive views of White Americans and White institutions.

Implicit Bias

Researchers have attempted to explain disparities in a variety of outcomes by looking at "implicit" or "unconscious" bias, which Feagin and Bennefield argued is one aspect of white framing (2014). Implicit associations are largely considered unconscious and therefore uncontrollable but may impact our judgements and behavior (Fitzgerald & Hurst, 2017). Research on implicit bias has indicated that it often develops early in life and is reinforced by repeated exposure to stereotypes (Chapman et al., 2013). While a person's explicit beliefs may evolve over time, enduring implicit biases continue to influence behavioral interactions with stereotyped groups (Chapman et al., 2013).

Some of the first research on bias was conducted by Devine (1999). In this seminal work, Devine found that both White participants who explicitly expressed prejudiced beliefs about Black Americans as well as those who articulated more "egalitarian" beliefs were able to develop lists of cultural stereotypes about Black Americans. Furthermore, regardless of their level of prejudice, participants who were exposed to stereotype-activating words were more likely to interpret ambiguous behavior by a Black character as hostile. From these studies, Devine

demonstrated two forms of bias that result from stereotypes which she labelled “controlled” (i.e. explicit) and “automatic” (i.e. implicit) (Devine, 1999).

The Implicit Association Test (IAT), the most well-known test of implicit beliefs, was later developed to measure attitudes of which a person may not be consciously aware (Greenwald et al., 1998). In the standard IAT, a subject is asked to sort words or images into categories as fast as possible while making as few errors as possible. The resulting IAT score compares speed and error rates on trials in which the pairing of concepts is consistent with stereotypes to trials in which the concepts are inconsistent with stereotypes. Variations of the IAT have explored biases around gender, race, body image, age, and sexual orientation (Brownstein, 2019).

The construct of implicit bias is not without critique. Bourne (2019) cautions that the concept of implicit bias is not *the* explanation for racism. Specifically, she expressed concern that this label, like ‘xenophobia’ and ‘disadvantage’ before it, masks the role of institutions in the perpetuation of racism. These critiques align with Feagin’s writings and proposal that White framing and implicit bias are symptoms of a racist institutions, rather than causes.

Clinician Implicit Bias

Since the development of the IAT, an extensive body of literature has developed exploring the role of such biases on clinical interactions within medicine. For example, Malat and colleagues (2010) interviewed White physicians about how they explain racial inequalities to indirectly identify possible implicit biases. White physicians most often blamed patients, including Black patients, for being passive and failing to voice concerns to their providers. Furthermore, these physicians rarely implicated White practitioner discrimination in explaining observed inequalities (Malat et al., 2010). This sentiment was echoed by a survey of physicians

that found that most White providers agreed with a statement that patients rarely suffer racial discrimination in medical treatments while only a minority of Black physicians agreed (Clark-Hitt et al., 2010). Blair and colleagues (2012) conducted a large-scale survey of patients whose physicians had completed the IAT. They found that while levels of explicit bias were low, clinicians who demonstrated higher levels of implicit bias were rated lower in patient-centered care by their Black patients than by a reference group of White patients. These findings are particularly alarming given that stigmatization is considered to be an influential factor contributing to high drop-out rates from treatment for individuals with psychiatric needs (Rüsch et al., 2005).

More recently, Fitzgerald and Hurst (2017) conducted a systematic review of the literature to evaluate the evidence that healthcare professionals display implicit biases toward patients. The study included 42 research articles on the topic and 83% found evidence of implicit biases among doctors and nurses. Of the studies included in this analysis, three demonstrated significant correlations between high levels of physician implicit bias against Black Americans (based on IAT scores) and negative ratings of the interaction by Black patients. Four studies found significant correlations between pro-White implicit bias as identified by the IAT and the provision of preferred treatment (Fitzgerald & Hurst, 2017).

While this body of literature has grown significantly, few studies have looked specifically at the effect of implicit biases on clinical interactions within mental health. Peris and colleagues (2008) sought to examine implicit and explicit biases toward individuals with mental illness and to assess the possible effect of such biases on care. The results indicated that individuals with higher levels of training in mental health demonstrated greater implicit positivity toward individuals with mental health challenges compared to other groups. Furthermore, it was found

that biases predicted clinical decision-making. Individuals with higher levels of self-reported explicit bias were associated with patients being assessed to have worse prognoses. In contrast, individuals with higher levels of implicit bias were associated with overdiagnosis of patients (Peris et al., 2008). A limitation, however, is the modification of the IAT for the purposes of this study. Given that the IAT requires a contrast group, this study opted for participants to evaluate individuals with mental illness and individuals who receive welfare. Peris and colleagues argued that this was an adequate comparison group because these individuals are also stigmatized and blamed for their circumstances; however the results cannot be interpreted independent of this comparison group. This is a common critique of the use of the IAT in research studies (Kopera et al., 2015).

A recent study conducted by Kopera and colleagues (2015) compared the explicit and implicit attitudes of non-professionals (i.e. medical students) and mental health professionals regarding patients with mental health challenges. While both groups explicitly self-reported positive attitudes toward individuals with mental illness, both were also more likely to associate mental illness with negative attributes such as inferiority, dangerousness, and personal failures. While these results contrast to those previously reported in the literature, this study addressed limitations associated with the use of comparison groups for the measure of implicit biases in previous works.

Juvenile Justice System

It is estimated that 1.7 million youth are supervised by juvenile courts each year (Mallett & Boitel, 2016). Currently, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) reports that juvenile offenders account for 15% of all violent crimes and 24% of all property crimes committed in the US (OJJDP, 2011). While the juvenile system was established with the

stated purpose of rehabilitating youth, research indicates youth are likely to experience a number of unintended consequences as a result of their involvement with the system (Bonham, 2006; Edwards, 2017).

History of the System

The term *juvenile justice system* refers to the collection of institutions including juvenile court, police, prosecuting and defense attorneys, probation, juvenile detention centers for shorter placements, and juvenile correctional facilities for longer placements, all of which are tasked with rehabilitating youth deemed to be delinquent (McCord et al., 2001; Rosenheim, 1983). The establishment of a separate system for youth occurred in the United States over 100 years ago. At that time, with both rehabilitative and preventive approaches in mind, the needs of the children within the system were emphasized over the need to punish (McCord et al., 2001).

Until the 1960s, the United States enjoyed a steadily declining crime rate for almost 100 years. In 1967, the President's Commission on Law Enforcement and the Administration of Justice was released, decrying the doubling of the violent crime rate in four years. Further, the report stimulated public awareness of criminal behavior and public opinion appeared to quickly conclude that juveniles were the source of the problem. Following the release of the report, juvenile arrests increased 300% by 1975 (Mathias et al., 1984). As a result, both policy makers and community members pushed for accountability through punishment and criminalization. During the 1980s, numerous states redefined the purpose of the juvenile justice system to emphasize public safety through policies increasing the likelihood of sanctions and offender accountability (McCord et al., 2001; Torbet & Szymanski, 1998). As a result, the juvenile justice system shifted toward punitiveness and accountability through punishment and criminalization.

This shift in approach contributed to an increased reliance on incarceration. For youth sentenced to juvenile detention, there was a significant lengthening in sentences (Slobogin, 2016). Moreover, most states approved policies that increased the ease with which youth could be transferred for prosecution in adult criminal court (McCord et al., 2001; Torbet & Szymanski, 1998). This policy shift contributed to an increase from 6,800 cases transferred to adult criminal court in 1987 to 10,000 in 1996. Further, the number of youths in adult correctional facilities doubled in that decade (Zerby & Thomas, 2006).

In addition to a harsher approach to managing delinquent behavior, many states saw a decrease in the availability of public mental health services for children (Underwood & Washington, 2016). Many communities began relying on the juvenile justice system to try and fill this gap in available services (Underwood & Washington, 2016). While rates of youth arrest declined, rates of confinement in detention centers increased 46% between 1991 and 1999 (Zerby & Thomas, 2006). However, many juvenile justice systems were unequipped to deal with the acute needs of youth with mental health disorders, leaving the underlying challenges a youth may be experiencing unresolved (Underwood & Washington, 2016).

The Juvenile Justice System's Goals and Purpose

As described previously, the juvenile justice system was established with the belief that youth have questionable criminal responsibility and thus should be rehabilitated and reintegrated into the community, rather than be punished (Zerby & Thomas, 2006). Currently, the stated purpose of juvenile court varies from state to state, with some emphasizing the best interest of the child and state and others the principles of protecting both the child and the community as well as the constitutional rights of those involved (Zerby & Thomas, 2006). More recently, some

state juvenile justice courts modified their stated purpose to include concepts of balanced and restorative justice, emphasizing accountability and community safety (Zerby & Thomas, 2006).

The juvenile system was designed in the early 20th century with several notable differences from the adult system (McCord et al., 2001). First, the focus of the juvenile system was on the adolescent as "a person in need of assistance," (p.154), rather than on the act that brought them in front of the court. These proceedings were also informal, and as such discretion was left to the judge rather than a jury. Additionally, because the judge was charged with acting in the interests of the child, procedural safeguards such as a right to an attorney, right to know the charges brought against one, right to a trial by jury, and the right to confront one's accuser were deemed unnecessary (McCord et al., 2001). Juvenile court proceedings were closed to the public and records were sealed to ensure the adolescent's ability to rehabilitate and reintegrate into broader society (McCord et al., 2001). This approach was further reinforced in 1974, when The Juvenile Justice and Delinquency Prevention Act was passed with the goal of diverting youth from the formal, punitive processing of the adult justice system (Underwood & Washington, 2016).

The juvenile justice system further emphasized its distinct purposes through specific language that underscores the foundational differences between it and the adult system (McCord et al., 2001). For example, juveniles are not charged with crimes, but rather with delinquencies; they are not found guilty, but rather are adjudicated delinquent (McCord et al., 2001).

Case Process in Juvenile Justice

Involvement in the juvenile justice system begins when a youth is referred to the court (see Appendix B; McCord et al., 2001). These referrals can be made by police, parents, schools, social service agencies, probation officers, and victims. Historically, the majority of referrals are

made by law enforcement agencies who serve as gatekeepers to the juvenile justice system (McCord et al., 2001).

Most juvenile courts have jurisdiction over criminal delinquency, abuse and neglect, and status offense delinquency cases (McCord et al., 2001). Criminal delinquency cases are those in which a youth has committed an act which would be considered a crime if committed by an adult. Status offenses are acts that are legal for an adult but are not permitted for juveniles such as truancy, running away from home, alcohol consumption, or curfew violations. In some states, juvenile courts are also responsible for other cases involving children such as adoption, emancipation, and dependency (i.e. when a petition is filed to declare a child a dependent of the Court, such as in cases of suspected abuse or neglect) (McCord et al., 2001).

Following referral, cases are evaluated in an intake process during which the youth's charges are delineated (McCord et al., 2001). This process may be done within the court system or outside the court system (i.e. probation department or prosecutor's office), depending on the state. The intake screening considers whether charges should be filed due to sufficient evidence, resolved through diversion to alternative programs, or should proceed to formal processing within juvenile court (McCord et al., 2001).

Juvenile court, sometimes referred to as family court, is considered to be the center of the juvenile justice system (McCord et al., 2001; Moore & Wakeling, 1997). Once an intake is completed and it is determined that a case will proceed to formal handling (i.e. by the juvenile court), a petition is filed, and the case is scheduled for adjudication. At the adjudicatory hearing, the prosecutor will present evidence to establish the facts of the case, similar to the trial aspect of adult criminal court. Following the presentation of facts, a juvenile judge will determine whether the youth is adjudicated delinquent (similar to being found guilty in adult criminal court) and

will schedule a disposition hearing. Alternatively, if there is a lack of clear evidence to support the charges, the case may be dismissed, or the case may be continued in contemplation of dismissal. In the case of the latter, a youth may be asked to take some action (i.e. receive treatment, pay restitution) prior to the final determination being made (McCord et al., 2001).

A disposition hearing is comparable to the sentencing in adult criminal court (McCord et al., 2011). At that time, the juvenile judge will determine, with input from the prosecutor and defense, the appropriate sanction. Possible dispositions, or outcomes, include commitment to an institution, placement in a group or foster home, placement in a detention center, probation, referral to an outside agency or treatment program, imposition of a fine, community service, or restitution (McCord et al., 2001).

Outcomes for Justice-Involved Youth

In part, the debate about the effectiveness of justice system centers on whether adolescence is too late to improve a youth's trajectory (Cook et al., 2014). Much of the research on the outcomes of justice-involved youth indicate at best limited effectiveness and at worst iatrogenic effects (Artello et al., 2015; Cecile & Born, 2009; Lambie & Randell, 2013).

Educational Attainment

School achievement, including factors such as school performance, academic aspirations, peer connectedness, and bonding to school have been determined to impact a youth's cumulative risk for criminal behavior (Schubert et al., 2018). In a survey of justice-involved youth, more than half admitted to skipping class and being suspended in the year prior to placement. In addition, 26% had repeated a grade, and almost half reported that they were performing below grade level (Schubert et al., 2018; Sedlak & Bruce, 2010).

There is evidence that involvement with juvenile justice overall reduces the attainment of crucial educational opportunities (Schubert et al., 2018). This is particularly true for youth with special education needs, for whom placement in juvenile detention often contributes to a failure to return to school at all (Holman & Ziedenberg, 2006; Mallett & Boitel, 2016). Some studies have indicated that youth in justice facilities are approximately four years behind their peers in reading and mathematics skills (Krezmien et al., 2008).

Research has shown that justice-involved youth who earn a high school diploma (9% in one sample) are in the minority compared to the larger justice-involved youth population (Cavendish, 2014). Of those who do complete their education while in a justice facility, the majority earn a General Equivalency Diploma (GED; approximately 83%). It is important to note studies have shown that the attainment of a GED has little positive effect on adult employment outcomes (Osher et al., 2012).

Educational achievement and the skills that are developed as part of this process are considered the foundation for successful transition into the workforce as a young adult (Schubert et al., 2018). Much of the literature on the interactions between justice-involvement, mental health challenges, and education and employment outcomes do not emphasize the interaction between all of these elements. Schubert and colleagues (2018) sought to evaluate the role of a mental health diagnosis on education and employment outcomes for justice-involved youth. They found that the presence of a mental health diagnosis did not significantly affect the educational and employment outcomes for this population; however, educational achievement was independently linked to employment outcomes. While mental health was not found to be independently linked to educational attainment, there is some evidence that intensive mental

health treatment can reduce school dropout and increase school completion for justice-involved adolescents (Cuellar & Dave, 2016).

Recidivism and Adult Criminal Behavior

Adding to the concerns about the effectiveness of juvenile justice are reports that treatment received within this system may contribute to later criminality (Arredondo, 2003; Petitclerc et al., 2013). Detention placement has been found to have a causal impact on increased youth re-offending and recidivism. Detained youth are more likely to have multiple interactions with the juvenile justice system, with a prior detainment being the most significant predictor of recidivism (Benda & Tollet, 1999; Bezruki et al., 1999; Leiber & Fox, 2005; Petitclerc et al., 2013). In one study, youth who had previously been detained were 14 times more likely to have a subsequent detention placement (Benda & Tollet, 1999). Another study found that 70% of detained youth returned within one year (Bezruki et al., 1999). A 2013 study by Petitclerc, Gatti, Vitaro, and Tremblay found that adolescents who were formally processed in juvenile court, as opposed to assigned to a diversion program, were three times more likely to recidivate as young adults. This study was unique in that it followed the adolescents to age 25 years, compared to prior studies which typically evaluated recidivism after only one year. In addition to finding that court-involved youth were more likely to recidivate, Petitclerc and colleagues (2013) also found that court-involved adolescents committed almost twice as many violent and non-violent adult offenses compared to their matched peers who were diverted.

In addition to increasing their risk for future delinquency, detention profoundly impacts education, mental and physical well-being, and future employment (Males et al., 2006). Time in detention interrupts positive peer, family, and school relations and promotes a negative peer culture that may contribute to recidivism (Dodge et al., 2006).

Disproportionality in Juvenile Justice

The federal government has recognized disproportionality within the juvenile justice system since 1974. At that time, the Juvenile Justice and Delinquency Prevention Act (JJDPA) set standards for community and state juvenile systems to reform (National Conference for State Legislators, 2011). This policy made programs eligible for federal funding if they aligned to four core protections, one of which addresses racial and ethnic disproportionality (National Conference for State Legislators, 2011).

Disproportionality refers to situations in which minority group members are either under- or overrepresented relative to their proportion of the general population (Fong et al., 2014). Within juvenile justice, disproportionality is often presented as a ratio between the percentage of persons in a particular racial group at a particular decision point compared to the percentage of the same racial group in the overall population (Fong et al., 2014). This ratio is used to highlight differences in outcomes by racial group membership, particularly in systems that allege to treat all individuals equally (Fong et al., 2014). Within the juvenile justice system, the term Disproportionate Minority Contact (DMC) is often used to refer to the overrepresentation of minority youth across all phases of the juvenile justice system (National Conference for State Legislators, 2011).

Evidence of disproportionate minority contact within juvenile justice raises questions about fairness and equality of treatment by police, courts, and other personnel connected with the system (National Conference for State Legislators, 2011). Furthermore, contact with the juvenile justice system has implications for a youth's long-term development and future prospects (National Conference for State Legislators, 2011).

In an early analysis of disproportionality within the juvenile justice system, Hamparian and Leiber (1997) developed index scores to reflect the extent of a group's overrepresentation. Their study found that minority youth are overrepresented at all stages of the juvenile justice system, including arrest, detention, placement in corrections, placement in adult jail, placement in adult lock-up, transfers to adult criminal court, and probation. Specifically, at that time, Black youth represented approximately 15% of all youth ages 10-17 in the United States. However, they represented 26% of all juvenile arrests, 30% of delinquency referrals to juvenile court, 46% of cases judicially waived to adult court, and 40% of all juveniles in long-term confinement.

More recent studies have found evidence of disparities in arrest, intake, detainment, counsel, and placement, indicating that the problem has persisted in spite of increased awareness (National Conference for State Legislators, 2011).

Policing and Arrest

Unfortunately, there is limited empirical evidence about police encounters with youth (McCord et al., 2001). What is available has generally focused on the role of extralegal factors (i.e. environmental, social, etc.) in police decision making (McCord et al., 2001; Schulenberg, 2017). The findings have generally confirmed that police behavior is influenced by not only legal considerations, but also independent choice (Brunson & Pegram, 2018; McCord et al., 2001). It has been hypothesized that the nature of police work requires quick decisions based on limited information, which can result in a reliance on observable characteristics such as race and behavior (Brunson & Pegram, 2018; McCord et al., 2001). In summarizing the body of research on the policing of youth, Brunson and Pegram described a consistent trend indicating that officers apply their discretion in an uneven fashion that "[exposes] youth of color to a wide range of undue harms…" (p. 86).

An example of such research was conducted by Worden and Myers (1999). They attempted to directly observe the behavior of police officers in the field and found that 62% of youth suspects approached by police were minorities, and of those youth 95% were Black. Additionally, minority suspects were 43% more likely to be arrested than White suspects and twice as likely to be judged to have shown "disrespect".

Utilizing a large, nationally representative dataset, Andersen (2015) looked at macro-level community factors that may contribute to risk for juvenile arrest. In particular, she focused on whether disparities in arrests were related to the relative size of the minority population in a community and the presence of economic inequality. She found that not only do Black youth have an increased risk of arrest compared to their White peers, but these disparities are most pronounced in predominantly non-Black communities.

There is also evidence that aggressive policing tactics, which are disproportionality utilized in minority communities, may have significant impact on youth. Legewie and Fagan (2019) studied the impact of an aggressive policing program implemented by the New York Police Department (NYPD) on youth academic performance. They found that these types of programs had a negative impact on educational engagement and achievement. Specifically, the test scores for Black males were significantly lower, consistent with their disproportionate exposure to policing. Further, there is evidence that increased contact with police through such practices is related to poorer mental health (Geller et al., 2014).

Sentencing

Much of the literature on factors contributing to decision-making within juvenile justice have found evidence that race plays a notable role (Brown & Sorensen, 2013). In particular, there is growing evidence that minority youth are more likely to receive harsh punishment at the

adjudication step (National Conference for State Legislators, 2011). For example, Brown and Sorensen (2013) explored the adjudication process to determine what factors contributed to juvenile case transfer to adult court. When controlling for legally relevant differences in the cases, the researchers found that both race and gender played notable roles. Specifically, they found that minority youth were three times more likely than their White peers to be transferred to adult court. Further, males were seven times more likely to be transferred than their female peers.

In addition to receiving more severe punishments, minority youth are more likely to be sentenced for longer periods of time or sent to more restrictive settings (National Conference for State Legislators, 2011). One study utilized a large sample of state-level data to explore factors that contribute to youth receiving various dispositions including case dismissal, case diversion, probation, placement, or transfer to adult court (Cochran & Mears, 2015). Their findings indicated that minority males were both less likely to receive treatment-oriented dispositions and more likely to receive punitive dispositions (i.e. placement or transfer) than their White peers.

Accessing Treatment

In recognition of the limited effectiveness and possible negative effects of incarceration on recidivism, juvenile courts utilize mental health placements as a disposition (Mallett & Boitel, 2016). However, there is evidence that the factors that most strongly predict which youth receive mental health treatment within juvenile justice include factors that may not be related to diagnosis or need. For example, Yan and Dannerbeck (2011) found that legal factors such as the number and type of offense were strongly predictive of which youth received mental health treatment. More alarmingly, multiple studies have found evidence that aspects of a youth's identity, including their gender and race, may also predict whether or not they are able to access mental health treatment within juvenile justice (Baglivio et al., 2017; Herz, 2001; Spinney et al.,

2016). In reviewing the existing literature on this topic, Spinney and colleagues (2016) found evidence of racial disparities in access to mental health and substance use treatment within the juvenile justice system. These researchers identified 26 articles which focused on the factors that predict mental health and substance use treatment referrals within juvenile justice. Their review revealed that the majority of these studies demonstrated at least some effect of race on the decision to refer youths to treatment (Spinney et al., 2016). Further, Baglivio and colleagues (2017) explored the factors that predict which youth within juvenile justice settings receive psychiatric treatment, including medication. They found that Black males were 32% less likely to receive treatment than White males, even when controlling for clinically relevant factors.

Mental Health of Justice-Involved Youth

Mental health is conceptualized by the World Health Organization as not merely the absence of disorder, but a broader state of well-being (World Health Organization, 2014). Mentally healthy individuals have the skills to cope, recognize their own potential, form healthy relationships, are productive in daily activities, and can contribute to their communities (World Health Organization, 2014). Mental health can be impacted by a variety of factors including social, psychological, personality, and biological factors (World Health Organization, 2016). The intersection of these factors can result in a mental health disorder, a diagnosable health condition that significantly impacts thinking, emotion, behavior and impacts functioning in relationships, work, or daily living (American Psychiatric Association (APA), 2015).

According to the APA (2015), approximately 15 million school-age youth (6 to 18 years old) in the United States could currently meet diagnostic criteria for a mental health disorder. The lifetime prevalence rate of mental health disorders for adolescents is estimated at 46%, and 21% for a “severe” disorder (National Alliance on Mental Illness, n.d.). Adolescence is believed

to be a period of increased risk for the development of mental health disorders (McDermott et al., 2017). This may be due to the significant biological, psychological, and social changes associated with this developmental period. In addition, adolescents may experience both "nonnormative stressors" (e.g. parental divorce, bullying) and "normative stressors" (e.g. transition to high school) which increased risk for symptoms (Kim et al., 2003). This may also contribute to increased risk for justice system involvement as, "young children are often viewed as troubled and older children are more often viewed as troublesome," (Ryan et al., 2013, pp. 462)

Adolescents with mental health needs are overrepresented in the juvenile justice system (Robst et al., 2017). Estimates reveal that approximately 50 to 70% of justice-involved youth meet criteria for a mental health disorder. Of those, approximately 20% experienced "severe" symptoms (Mental Health America, 2015). Furthermore, approximately two-thirds meet criteria for two or more disorders (Underwood & Washington, 2016). One tenth of justice-involved youth also meet criteria for a substance use disorder (Underwood & Washington, 2016). Despite these increased rates of need, justice-involved youth are less likely than the general population to have their mental health challenges identified or to have received services prior to incarceration (McCormick et al., 2017; Underwood & Washington, 2016).

Common Emotional and Behavioral Disorders in Adolescence

In 1966, the terms "internalizing" and "externalizing" were introduced to describe the two broad groupings of behavioral, emotional, and social problems (Achenbach et al., 2016). These groupings were derived from factor analyses of the problems of children referred for clinical treatment. The American Psychiatric Association endorsed this conceptualization as

empirically supported in the *Diagnostic and Statistical Manual, Fifth Edition* (*DSM*-5) (Achenbach et al., 2016; APA, 2013).

Externalizing Disorders

Externalizing problems are characterized by poor emotional and behavioral control (APA, 2013). These challenges with self-regulation can result in behaviors that are directed outwardly toward others and is characterized by impulsivity and disruptive behaviors (Kempker et al., 2016; Rutherford et al., 2004). Youth with externalizing behaviors have increased risk for involvement in juvenile justice as there is substantial evidence that youth with disruptive behaviors engage in higher levels of aggressive behavior (Stoddard-Dare et al., 2011; Underwood & Washington, 2016).

Impulse-control Disorders. Impulse-Control disorders, a type of externalizing disorder, are characterized by poor emotional and behavioral regulation (APA, 2013). The disorders in this category are unique from other disorders which reflect poor behavioral and emotional control, as they can result in violations of societal norms and bring about interpersonal and legal problems (American Psychological Association, 2013). Examples of Impulse-Control disorders include Attention-Deficit Hyperactivity Disorder (ADHD) Intermittent Explosive Disorder (IED).

ADHD is one of the most common disorders in childhood and adolescence (National Institute for Mental Health (NIMH), 2017). Data from the National Comorbidity Survey – Adolescent Supplement (NCS-A) explored the lifetime prevalence of disorders among U.S. adolescents (ages 13-18). This study found the lifetime prevalence of ADHD in adolescents was 8.7%. Nearly half of all cases resulted in severe impairment. ADHD appeared to affect three times as many males as females (NIMH, 2017). Conversely, IED has an approximate lifetime prevalence rate of 7.8 %, but there is no significant gender difference (McLaughlin et al., 2012).

For justice-involved youth, these rates are notably higher, with prevalence studies indicating that approximately 13-30% of justice-involved youth meeting criteria for a diagnosis of ADHD (Underwood & Washington, 2016).

Conduct Disorders. Conduct disorders are also characterized by poor emotional and behavioral regulation (APA, 2013). The disorders in this category manifest in behavior that violates the rights or others or brings the individual into conflict with societal norms or authority figures (i.e. legal problems). Examples of Conduct Disorders include Oppositional Defiant Disorder (ODD), Conduct Disorder, and Antisocial Personality Disorder (APA, 2013).

The NCS-A found a lifetime prevalence rate of 12.6% for ODD and 6.8% for Conduct Disorder. Consistent with previous findings, these disorders are significantly more likely to impact males than females (Merikangas et al., 2010). For justice-involved youth, Conduct Disorder is the most common diagnosis (Teplin, 2002; Yamapolskaya & Chuang, 2012).

Internalizing Disorders

Internalizing problems are characterized by overcontrol and are described as being directed inward. These challenges are characterized by social inhibition, withdrawal, and dissociation (Kempker et al., 2016). As a result, internalizing behaviors can be more subtle and challenging for adults to observe in youth (Rutherford et al., 2004). Several factors that contribute to the development of internalizing disorders can include emotional and sexual abuse (Kempker et al., 2016). It also shares risk factors with externalizing problems including associating with antisocial peers, family conflict, family history of antisocial behavior, and academic failure (Kempker et al., 2016).

Some researchers have hypothesized that internalizing disorders may contribute to increased risk for justice-involvement in adolescents (Ryan & Redding, 2004; Underwood &

Washington, 2016). Underwood and Washington (2016) explained that in adolescents, internalizing disorders are associated with increased anger, irritability, and hostility than in adults. As a result, this may increase the youth's probability of evoking angry responses from others and increase their risk of physical aggression that can result in arrest. Ryan and Redding (2004) hypothesized that youth with depressive symptoms, experiences of hopelessness, failure to consider the consequences for their actions, and poor social functioning may engage in distorted processing that can increase their vulnerability for engaging in delinquent behavior.

Anxiety Disorders. Anxiety disorders include those that feature developmentally inappropriate fear or worry and have associated behavioral symptoms such as avoidance (APA, 2013). Each disorder differs in the type of object or situation that induces the emotional response. While they tend to be highly comorbid, they can be differentiated by their triggers (APA, 2013). Examples of anxiety disorders include Generalized Anxiety Disorder (GAD), Separation Anxiety Disorder (SAD), and Specific Phobia (APA, 2013).

Data from the NCS-A found that 31.9% of all adolescents experienced an anxiety disorder, of which 8.3% had severe impairment in their functioning. The rates of anxiety disorders were higher for females (38%) than for males (26.1%). There were no significant differences between age groups (Kessler et al., 2005).

Depressive Disorders. Depressive disorders are characterized by a sad, empty, or irritable mood and associated somatic and cognitive changes. Unlike normative experiences of sadness, depressive disorders affect an individual's ability to function. Each disorder within this grouping is differentiated by duration, timing, and presumed etiology (APA, 2013). Examples of Depressive disorders include Major Depressive Disorder (MDD), Disruptive Mood Dysregulation Disorder (DMDD), Dysthymia, and Bipolar Disorder (APA, 2013).

Thapar and colleagues (2012) explored the development, prevalence, and treatment of depression in adolescents. Their review of the research found that there is significant evidence that rates of depression rise substantially in adolescence. They found that the median 12-month prevalence estimate for adolescents is similar to that of adults, 4-5%. The cumulative probability of depression increases to near 20% at the end of adolescence. For justice-involved youth, prevalence studies have indicated that approximately 15-30% meet criteria for a depressive disorder and 3-7% meet criteria for Bipolar Disorder. The preponderance of all cases of depression occur in females at approximately a two to one ratio (Thapar et al., 2012).

While not a diagnosable disorder, the Office of Juvenile Justice and Delinquency Prevention (OJJDP) found that in one year, over 11,000 detained youth engaged in over 17,000 acts of suicidal behavior (i.e. ideation, gesturing, and attempts) (Mallett & Boitel, 2016). In another nationally representative survey, researchers found that of 7,000 detained youth, more than 22% reported a past suicide attempt (Sedlak & McPherson, 2010).

Comorbid Disorders

Research has indicated the presence of both internalizing and externalizing problems, or comorbid disorders, is associated with more maladaptive psychological, social, and legal outcomes than a diagnosis associated with one dimension (Kempker et al., 2016).Within the community, adolescents with recurrent comorbid symptoms have been found to have more impairment in social, academic, physical, and overall functioning compared to those noncomorbid symptoms or none at all (Essex et al., 2009; Lewinsohn et al., 1995).

Research on comorbidity in youth has found that those with Conduct Disorder are at particular risk to develop a comorbid internalizing disorder (Angold et al., 1999; Polier et al., 2012). In 2012, Polier and colleagues assessed the prevalence of comorbid internalizing

challenges for youth with conduct problems in both community and clinical samples. They found that both samples demonstrated high co-occurrence of these challenges including 35% of those in the community sample and 78% of those in the clinical sample (Polier et al., 2012). These results echoed earlier findings that symptoms of Conduct Disorder were associated with depression, withdrawal, or a combination of these internalizing challenges and increased the risk of an anxiety disorder (Angold et al., 1999; Loeber Russo et al., 1994). Furthermore, in evaluating comorbid challenges in justice-involved youth, Copeland and colleagues (2007) found that those with comorbid internalizing and externalizing disorders were more likely to be re-arrested in young adulthood (16-21 years old), compared to those with only one diagnosis or none at all (Copeland et al. , 2007). The body of research on this topic suggests that comorbid internalizing and externalizing disorders, in particular, are related to greater impairment and elevated risk for recidivism (Hoeve et al., 2003).

Adverse Experiences and Trauma

Goldson (2010) observed what has long been recognized by researchers, that '… the corollaries between child poverty, social and economic inequality, youth crime and processes of criminalization are undeniable' (p. 519). Some have hypothesized that differential rates of poverty and the social conditions associated with it may be a contributor to minority overrepresentation in juvenile justice (McCord et al., 2001). While by absolute number there are more White than Black families living in poverty in the United States, White families are less likely to live in areas where the majority of their neighbors also experience poverty (McCord et al., 2001). Further, Black youth are more likely to experience poor health care and poor economic conditions in their neighborhoods (McCord et al., 2001). These neighborhood challenges are also associated with increased assault and burglary rates (McCord et al., 2001;

Warner & Pierce, 1993). Other studies have found that there are also significant correlations between criminal behavior and unemployment, housing instability, infant mortality, and poverty (McCord, et al., 2001; Sampson & Laub, 1992). This trend may be exacerbated by a lack of available mental health care in the community, resulting in symptoms of mental health challenges being identified as delinquent behavior, and resulting in subsequent entrance into juvenile justice (Bonham, 2006).

Child and adolescent maltreatment are consistently identified as a powerful predictor of juvenile and adult offending behavior (Ryan et al., 2013). Of justice-involved youth, at least 30% are victims of abuse or neglect (Mallett & Boitel, 2016). Ryan and colleagues (2013) found that adolescents with ongoing cases related to neglect were significantly more likely to continue offending behavior compared to youth with no documented history of neglect. These findings indicate that child welfare concerns have implications for effective intervention for justice-involved youth.

The prevalence of trauma and stressor-related disorders in justice-involved youth is estimated to be between 11-32% (Underwood & Washington, 2016). Adolescents with Posttraumatic Stress Disorder (PTSD) are liable to respond to perceived threats aggressively and unexpectedly, possibly contributing to behavior that may be perceived as delinquent (Underwood & Washington, 2016). Some researchers have argued that comparable to the school-to-prison pipeline for minority males, there is a trauma-to-prison pipeline for minority females. Baumle (2018) argued that data indicates that the majority of justice-involved females have experienced abuse and trauma prior to entering the juvenile justice system. Additionally, most enter the system on status charges (i.e. charges related to the youth's age), such as running away, of which many can be linked to expected trauma responses (Baumle, 2018).

Role of Mental Health in Offending

Much of the existing body of research on justice-involved youth has emphasized the identification of risk factors, or characteristics that make it more likely for a youth to become involved in the juvenile justice system (Shader, 2011). Within this research, many of the risk factors for juvenile justice involvement overlap with risk factors for the development of mental health disorders. For example, Tremblay and LeMarquand (2001), concluded that one of the strongest predictors of delinquent behavior is aggression prior to age 13. Other factors recognized include hyperactivity, attention challenges, and impulsivity (Shader, 2011). In addition to these individual factors, social factors including poor family supervision, family conflict, punitive discipline at home, and association with delinquent peers also have been found to be related to delinquent behavior (Shader, 2011). The high rates of mental health challenges among youth in juvenile justice and evidence that youth with mental health challenges have an increased risk for criminal behavior, indicate only an association between mental health challenges and criminal involvement (i.e. criminogenic needs). Research on risk of criminal behavior has identified variables that are considered to be major determinants of criminality. These include individual factors (i.e. a history of antisocial behavior, an antisocial personality pattern, antisocial thought patterns, and engaging with antisocial peers) and contextual factors (i.e. education/employment, family relationships, substance use, and leisure activities). Together these factors are colloquially referred to as the "Big 8" (van Horn et al., 2018). Disentangling the relationship between these criminogenic needs and mental health challenges is complicated because the risk factors overlap (Schubert, Mulvey, & Glasheen, 2011).

Awareness of the overrepresentation of mental health challenges within juvenile justice led to more rigorous screening practices, increased provision of services, and expansion of

mental health diversion programs (Schubert et al., 2011). The potential of such services to reduce criminal involvement remains uncertain (Schubert et al., 2011). In recidivism literature, mental health factors are often not found to be salient risk factors (with the exception of substance use disorders), for the prediction of future criminal behavior (McDougall et al., 2012). Further, while the overall presence of mental health disorder is associated with recidivism, the links between specific diagnoses and recidivism have been inconsistent. Schubert and colleagues (2011) explored whether the presence of mental health disorder contributes to the rate of re-arrest and level of gainful activity. Their findings indicated only a marginal impact, which the researchers believed indicated that mental health disorders were related to higher levels of criminogenic needs. However, the nature of this relationship remains unclear. When controlling for criminogenic needs, most mental health disorders (ADHD, mood disorders, and anxiety disorders) had little independent contribution to outcomes (Schubert et al., 2011). This was consistent with Schubert and colleagues' 2011 study which explored the role of mental health challenges on the long-term outcomes of serious juvenile offenders. Within their study, they found that once controlling for criminogenic needs and demographic characteristics, the presence of mental health challenges alone was not associated with negative outcomes including recidivism. These researchers concluded that it is critical that providers address both criminogenic needs as well as mental health challenges within justice settings, as it is unlikely that addressing mental health challenges alone will have a meaningful impact on later outcomes. A limitation of much of the existing literature on this topic is a reliance on unstandardized assessment measures in favor of informal procedures such as chart reviews and clinical interviews. This approach makes comparing results across studies challenging (Hoeve, et al., 2013).

One consistent factor appears in the most rigorous studies of recidivism: substance abuse (Hoeve et al., 2013; McReynolds et al., 2010). McReynolds and colleagues found that adolescents with a co-occurring substance use disorder and a disruptive behavior disorder (i.e. externalizing) at detention intake were more likely to recidivate than those without a disorder (McReynolds et al., 2010). In a subsequent study, Hoeve and colleagues found that for adolescents who committed serious offenses, those with a substance use disorder, with or without a co-occurring mental health disorder, were more likely to reoffend, even when controlling for criminogenic needs (i.e. peer influence, antisocial history, etc.; Hoeve et al., 2013; Marlowe, 2018).

Treatment within a Continuum of Care

The American Academy of Child and Adolescent Psychiatry (AACAP) and other experts on mental health use the term "continuum of care" to describe the array of services of increasing intensity available for the treatment of mental health disorders (AACAP, 2008). The continuum of services parallels the many of the possible dispositions a youth may receive from juvenile court. Both can be largely conceptualized as consisting of two formats: those that occur in the community and those that occur in a residential treatment center. The following is a review of common community-based and residential treatment options for justice-involved youth.

Community-based Treatment

Treatment settings that allow youth to remain at home and in a prosocial community environment have been shown to have significant benefits (Ryon et al., 2013). When compared with more restrictive, residential treatment centers, community-based treatment allows for increased family participation (Skowyra & Powell, 2006). Research has indicated that when

implemented with fidelity, community-based interventions can reduce delinquent behavior and improve family relationships and broader functioning within the community.

Outpatient Treatment. Outpatient treatment is the least restrictive and least intensive level of mental health treatment available (Cigna Corporation, 2011). Within this model, youth typically attend 30 to 60-minute sessions at a clinic or office, with the number of visits per month determined by the youth's needs and insurance coverage (Cigna Corporation, 2011). Outpatient treatment can include individual therapy, family therapy, group therapy, or medication management (North Texas Help, 2018).

Day and Intensive Outpatient Treatments. Several formats of treatment are available in which the youth receives more intensive treatment during the day and returns to their home in the evenings and on weekends. Intensive Outpatient Programs (IOPs) typically provide several hours per day of targeted treatment over several weeks (North Texas Help, 2018). Day Treatment and Partial Hospitalization programming are similar. These programs provide intensive treatment and education during the school day, then youth return to their homes in the evening (AACAP, 2008). These programs can include individual, group, and family therapy as needed and are structured to teach skills to enable the patient to function more effectively (Cigna Corporation, 2011). These programs offer not only staff support, but that of other youth having similar challenges (Cigna Corporation, 2011).

Family-centered Treatment. The Office of Juvenile Justice and Delinquency Prevention compiles and continuously updates a review of effective treatments for delinquent behavior in "The Blueprints for Violence Prevention," (Henggeler, 2016). Three programs have been identified that are well-specified, have strong evidence of effectiveness, showed favorable outcomes at 12-month follow-up, and can be implemented within the community with fidelity.

These include *Multisystemic Therapy* (MST), *Functional Family Therapy* (FFT), and *Multidimensional Treatment Foster Care* (MTFC). While implementation varies between these programs, all of them emphasize the role of the family in improving adolescent functioning to reduce delinquent behavior (Henggeler, 2016). Additionally, all three programs utilize a social-ecological perspective which recognizes the environmental systems in which a youth is involved that play a role in the development and maintenance of delinquent behavior. Finally, these programs share their use of individualized, behavioral interventions as central to the comprehensive treatment plan (Henggeler, 2016).

Residential Treatment

Residential treatment centers, also known as inpatient settings, allow mental health providers to capitalize on the living environment to facilitate treatment and provide in-the-moment coaching and feedback (Connor et al., 2002). During placement, the goal is to develop skills (i.e. coping skills, emotion regulation skills, personal safety skills, etc.) and stabilize patients, and can target a variety of mental health challenges (Connor et al., 2002).

In recent years, a significant decrease has been observed in the use of all types of residential placement for justice-involved youth, including residential treatment centers (Cruise et al., 2016). As of 2011, approximately 116,701 youth were in residential placements as a result of their justice involvement. That was a 42% reduction since 1997 (Cruise et al., 2016). It should be noted that this overall decrease in residential placements has not affected Black youth (41% reduction) or Latino youth (28% reduction) at the same rate as White youth (49% reduction) (Cruise et al., 2016).

Secure Residential Treatment. It has been estimated that on each night of the school year, between 20,000 and 40,000 children are placed in various types of residential residence that

cater to mental health problems, and about 140,00 to 210,000 children pass through these settings each year (Little et al., 2005). Settings that address these needs, sometimes called residential treatment centers, are highly restrictive settings in which youth receive longer-term comprehensive care out of home (North Texas Help, 2018). These programs are often in a campus-like setting. Typically, these programs address chronic mental health disorders or multiple, complex diagnoses (North Texas Help, 2018). These settings provide intensive, multidisciplinary treatment for severe behaviorally and emotionally troubled youth. This model typically includes medication management, psychiatric assessment, psychological testing, individual, group, and family therapy, milieu therapy, social work services, and special education services (Mallett & Boitel, 2016).

Inpatient Hospitalization. Inpatient hospitalization is the most restrictive and intensive level of treatment. It is only recommended once a patient has been unsuccessful in other levels of treatment (North Texas Help, 2018). These individuals have chronic, complex mental health disorders that require ongoing medical monitoring and who cannot be kept safe in less restrictive settings. Such programs exclusively treat mental health disorders and often will offer specialty units for specific diagnostic concerns (i.e., substance abuse, eating disorders) or populations (i.e., child and adolescent, geriatric; North Texas Help, 2018; Sharfstein, 2009). During an inpatient hospitalization, patients receive 24-hour medical care with the goal of stabilizing the crisis. Formats of therapy include individual, group, and family (North Texas Help, 2018).

Effectiveness of Residential Treatment

Residential treatment is costly and highly restrictive, with research indicating mixed effectiveness (Holstead et al., 2010; Patel et al., 2018; Pottick et al., 1995). In a meta-analysis of residential treatment center outcomes, Knorth and colleagues (2008) showed that improved

psychosocial functioning is possible in such a setting. For example, behavior modification components, family-focused components, and specific training (i.e. social skills, cognitive skills, emotion regulation skills) can significantly strengthen the treatment effect (d= 0.60 for externalizing behavior outcomes). Further positive outcomes have been observed following residential treatment including symptom reduction, improved family and social functioning, and increased treatment orientation (Lyons et al., 2001; Mallett & Boitel, 2016). Some studies have shown that when compared to placement in justice facility, significantly greater reductions in recidivism occur for youth placed in residential treatment (Gordon et al., 2000; Mallett & Boitel, 2016).

The Missouri juvenile justice system is recognized as a leader in the shift from punishment to treatment (Missouri's Division of Youth Services, 2010). Missouri's system utilizes residential placements for youth who have no alternative; however, they have eliminated large institutions in favor of smaller, regional facilities. These facilities, called "treatment centers," operate with the goal of successfully returning youth to their communities. The centers provide a variety of treatment modalities including individual and group therapy, skills training, psychiatric care, education, and vocational skills training. Staff work as "counselors," rather than guards and provide support to the same youth throughout their placement. This system has a consistently low recidivism rate since its institution, reporting a mere 7% of youth recidivating in 2007 (Mallett & Boitel, 2016; Missouri's Division of Youth Services, 2010).

While functioning improves for some adolescents during residential treatment, many continue to show problem behavior after their departure (Bates et al., 1997; Hussey & Guo, 200; Patel et al., 2018). Hussey and Guo (2002) found that little behavioral change occurred during the course of treatment for youth who received residential treatment. Patel and colleagues (2018)

found that for youth not involved in the justice system, 40% of caregivers reported their youth's challenging behavior reemerging within two weeks of discharge from residential treatment. As Harder and colleagues (2017) explained, this can be at least partially explained by the severity and complexity of the challenges that are encountered by this population, limitations of available services, and programming that may be more punitive than therapeutic. That is, researchers have observed that programs that emphasize discipline demonstrate notably smaller effects on future recidivism (Lipsey, 2009).

Other researchers argue that the effectiveness of residential treatment may be limited to certain populations or presenting challenges (Lyons et al., 2001). Lyons and colleagues (2001) developed models of symptom change for adolescents in a residential treatment facility. When analyzing outcomes across primary psychiatric diagnosis, they concluded that residential treatment may be more effective for youth with emotional challenges rather than behavioral disorders. At the symptom level, these researchers observed that residential treatment was more effective in reducing high-risk behaviors including suicidality, and to a lesser extent self-harm and aggression toward others. Conversely, youth with anxiety and hyperactivity symptoms demonstrated increased impairment over the course of treatment (Lyons et al., 2001).

Similarly, studies have indicated that treatment must be targeted toward the youth's specific needs (Mathys, 2017). For justice-involved youth who do not receive targeted treatment, recidivism rates have been observed between 60 and 80%; whereas those who receive treatment to address their underlying challenges have an average reduction in recidivism of about 9% (Mathys, 2017). In a review of the existing literature on residential treatment for justice-involved youth, Cruise and colleagues concluded that regardless of the setting (i.e. community-based or residential), cognitive behavioral interventions produced the largest reductions in recidivism

(Cruise et al., 2016). When examining effect sizes, cognitive-behavioral interventions have demonstrated significant effects on outcomes including mental health, recidivism, and violence, and this has been found to be particularly true when implemented within a Risk-Need-Responsivity model which aims to address factors predictive of recidivism (Cruise et al., 2016).

Dawkins and Sorensen (2015) utilized state-level data collected over 34 years to explore the impact of placement in a residential justice facility on delinquent behavior. The study's broad findings indicated a host of negative associations between placement and future behavior including higher rates of violent offending. Additionally, periods during which residential placement was utilized more often were associated with higher rates of property and drug offending.

In addition to mixed evidence of effectiveness, there are several notable limitations associated with residential treatment (Cruise et al., 2016; Henggeler, 2016). First, there is evidence that exposure to the violence and delinquency within a residential treatment centers can lead to or exacerbate mental health conditions. In addition, it can contribute to further association with delinquent peers. Second, removal from the community, and in turn their school, does not improve a youth's academic achievement and many youths do not re-enroll when they return to their community. Third, residential treatment centers disrupt family relationships and can cause youth to lose the support of their parents, siblings, and extended family while they are away. Finally, such placements can be financially wasteful. The average cost of residential treatment for justice-involved youth is approximately $148,767 per year (Justice Policy Institute, 2014). This could provide significant amounts of effective treatment within the community.

A significant limitation to much of the existing literature on residential treatment for justice-involved youth is a lack of consensus on what types of facilities are included. According

to the OJJPD, there is no universal definition of a residential treatment program (OJJPD, 2019; Sickmund, 2010). For example, Sickmund and colleagues (2017) found that 70% of youth placed in a "residential treatment center" are placed in locked secure facilities more commonly associated with incarceration. The challenge of clearly defining residential treatment is further complicated by the lack of Federal law defining such programs (OJJDP, 2019).

The Role of the Psychologist

United States lawmakers recognize that effective assessment and intervention are critical to preventing the cycle of offense in justice-involved youth, particularly those with mental health disorders (National Conference for State Legislators, 2011). An increasing number of states are relying upon comprehensive psychological assessments to make informed decisions about how to most effectively support justice-involved youth (National Conference for State Legislators, 2011).

Clinical Practice

Courts today rely on assessments to gain a comprehensive perspective on the experiences and social influences on justice-involved youth (Campbell et al., 2018). In particular, dispositional assessments are the evaluations most frequently performed by psychologists (Borum & Otto, 2004). These evaluations identify emotional, behavioral, environmental, or substance abuse problems that may contribute to offending behavior and identify possible interventions to alleviate these factors and decrease the likelihood of re-offending (Borum & Otto, 2004). There is evidence that judges are inclined to adopt the clinical recommendations provided by comprehensive evaluations, reflecting a possible point of intervention to ensure youth receive appropriate treatment aligned to their individual needs (O'Donnell & Lurigio,

2008). The impact of clinician recommendations on court decisions reflects the importance of collecting accurate and useful information in the clinical assessment process.

Unfortunately, there is evidence of possible bias in the clinical assessment process. Baglivio and colleagues (2017) looked at factors related to the diagnosis and treatment recommendations of justice-involved youth in Florida. They found that Black youth were significantly more likely to be diagnosed with Conduct Disorder than their White peers, even when controlling for trauma, behavioral symptoms, and offending behavior. Conversely, White males were more likely to be diagnosed with Attention-Deficit Hyperactivity Disorder (ADHD). Yet, Black males were significantly less likely to receive psychiatric treatment while in a long-term juvenile justice placement.

Measurement and Diagnostics

Hoge (1999) argued that many juvenile justice systems use assessment and decision-making procedures that rely heavily on judgment and are susceptible to the assessor's influence. Based on his observations, Hoge argued for the use of more empirically based, standardized measures administered by psychologists to increase the validity of conclusions drawn about justice-involved youth. He described a model in which psychologists acted as consultants for the juvenile justice system, conducting evaluations to inform recommendations regarding adjudication, disposition, and treatment decisions. This is consistent with what is typically utilized in the United States.

Hoge believed that by utilizing more standardized measures psychologists had an opportunity to ensure equity in the treatment of youth within the juvenile justice system (Hoge, 1999). This sentiment continues to be expressed by professionals and advocates who believe that evidence-based tools can improve decision-making within juvenile justice and minimize

discriminatory factors within this process (Maloney & Miller, 2015). Maloney and Miller (2015) found evidence for this argument when they explored the use of a standardized risk assessment with justice-involved youth. They found that the use of the tool increased the assessor's reliance on the specific factors that comprised risk and may have reduced the use of "perceptual shorthand" (p. 922).

For psychologists, the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct appears to promote similar practices. In particular, it states that psychologists will not engage in unfair discrimination and will take reasonable steps to avoid harm to others (American Psychological Association, 2016). This is particularly important in light of empirical evidence about how informal assessments can impact youth outcomes. Bridges and Steen (1998) found that probation officers' attributions of the causes of the youth's behavior differed by their racial group membership. For Black youth, crime was attributed to their "negative attitudinal traits and personality defects," (p. 251). For White youth, behavior was thought to be caused by external environmental factors such as family conflict, substance use, and negative peer groups. Furthermore, these differences in opinion were found to significantly impact officer assessments of the youth's risk of recidivism and sentencing recommendations. The use of standardized measures in conducting a clinical assessment is a step toward ensuring more equitable treatment of youth in the system.

Purpose of the Current Study

There is widespread recognition that adolescents with mental health needs are overrepresented in the juvenile justice system (Robst et al., 2017). Despite these elevated rates of need, justice-involved youth are less likely than the general population to have their mental

health challenges identified or to have received services (McCormick et al. , 2017; Underwood & Washington, 2016).

Juvenile courts can utilize mental health placements as a disposition to avoid the possible negative effects of incarceration on youth development and recidivism (Mallett & Boitel, 2016). However, disproportionality is evident in access to treatment through the juvenile justice system (Baglivio et al., 2017; Herz, 2001; Spinney et al., 2016). There is evidence that the factors that most strongly predict which youth receive mental health treatment include factors that may not be related to diagnosis or need, including race and gender (Herz, 2001).

Juvenile court judges typically refer youth to mental health placements that are either community-based or residential. Residential treatment is costly and highly restrictive, with research indicating mixed effectiveness (Holstead et al., 2010; Patel et al., 2018; Pottick et al., 1993). In addition to mixed evidence of effectiveness, there are notable limitations associated with residential treatment (Cruise et al., 2016; Henggeler, 2016). There is evidence that residential treatment centers can contribute to mental health conditions through exposure to violence and delinquency, do not improve academic achievement, and disrupt family and community relationships (Henggeler, 2016).

Psychologists play a unique role in the juvenile justice system through the completion of dispositional assessments (Borum & Otto, 2004). These evaluations are requested by judges and identify emotional, behavioral, environmental, or substance abuse problems that may contribute to offending behavior. Further, disposition assessments typically culminate in referrals for possible interventions (i.e. community-based treatment or residential treatment) to alleviate the identified factors and decrease the likelihood of re-offending (Borum & Otto, 2004). Historically, the juvenile justice system has utilized assessment procedures that rely heavily on

judgment and are susceptible to the assessor's influence and can contribute to inequity within the system (Bridges & Steen, 1998; Hoge, 1999). Psychologists have professional and ethical obligations to utilize standardized measures to reduce unfair treatment and possible harm that may result from biased practices (American Psychological Association, 2016).

The goal of the current study was to examine disproportionality in mental health diagnoses and treatment referrals in a sample of adolescents referred by juvenile court judges for psychological evaluations. Analyses were conducted to determine whether there is evidence that race and/or gender is a significant predictor in the type of diagnosis a youth receives and referral to more restrictive, residential treatment. This study addresses limitations in earlier research and within the field of psychology by including standardized assessment measures in addition to clinician judgment, as well as a clear definition of "residential treatment center". Further, a goal of this study is to determine whether there is evidence that psychologists may play a role in systematic disenfranchisement of minority youth within the juvenile justice system through the assessment and referral process.

Research Questions

The present study proposes the following questions and hypotheses:

Question 1

Are demographic factors including race and gender associated with the diagnosis of justice-involved adolescents with an internalizing disorder (i.e. depression, anxiety), after controlling for symptoms of mental health challenges (substance use, hyperactivity, aggression, withdrawal, social stress, anxiety, and depression), and protective factors (social skills, adaptability, relationship with parents, interpersonal relationships, and connection to school)?

Hypothesis 1. It is hypothesized that demographic factors including gender (e.g. being female) and minority status (e.g. identifying as White) will be predictive of receiving an internalizing diagnosis. Existing research on prevalence has indicated that within the general population, females are significantly more likely than males to be diagnosed with internalizing disorders (Eaton et al., 2012; Merikangas et al., 2010; Thapar et al., 2012). Studies have also found evidence that minority youth are less likely to be diagnosed with mood and anxiety disorders than their White peers (Liang et al., 2016). Of the mental health challenges included in this model, it is believed that withdrawal, social stress, anxiety, and depression will be predictive of an internalizing diagnosis. These mental health challenges are symptoms included in the diagnostic criteria for many internalizing disorders (American Psychiatric Association, 2013). The majority of existing research on substance use has focused on its relationship to externalizing disorders and the few studies that have explored the relationship to internalizing disorders have been inconclusive (Colder et al., 2013). As a result, substance use is not expected to be a significant predictor in this model. Finally, the protective factors, including social skills, adaptability, relationship with parents, interpersonal relationships, and connection to school are expected to be related to the outcome such that lower levels of these protective factors are predictive of a youth receiving an internalizing diagnosis.

Question 2

Are demographic factors including race and gender associated with the diagnosis of justice-involved adolescents with an externalizing disorder (i.e. Attention-Deficit Hyperactivity Disorder, Conduct Disorder), after controlling for symptoms of mental health challenges and protective factors?

Hypothesis 2. For externalizing diagnostic profiles, it is anticipated that demographic factors including gender (e.g. being male) and minority status (e.g. identifying as a minority group member) will be predictive of receiving such a diagnosis. Males are consistently identified in the literature as demonstrating increased externalizing behaviors compared to females (Eaton et al., 2012). Minority youth are more likely to be diagnosed with disruptive behavior disorders and conduct-related problems than their White peers (Liang et al., 2016). Of the mental health challenges included in this model, it is predicted that substance use, hyperactivity, and aggression will be predictive of receiving an externalizing diagnosis. Consistent with the previous hypothesis, these mental health challenges are symptoms included in the diagnostic criteria for many externalizing disorders (American Psychiatric Association, 2013). Additionally, it has been suggested that externalizing disorders both predict the onset and escalation of adolescent substance use (Zucker et al., 2011). Finally, the protective factors are expected to be related to the outcome such that lower levels of these protective factors are predictive of a youth receiving an externalizing diagnosis.

Question 3

Are demographic factors including race and gender associated with treatment referrals (rather than incarceration) of justice-involved adolescents, after controlling for symptoms of mental health challenges and protective factors?

Hypothesis 3. It is hypothesized that demographic factors including gender (e.g. being male) and minority status (e.g. identifying as a minority group member) will be predictive of receiving a referral to a residential treatment center. Existing research on predictors of placement have identified being male as increasing a youth's likelihood of being placed in a more restrictive setting (Espinosa et al., 2013). While studies have not yet demonstrated that minority

youth are more likely to be referred to restrictive treatment settings, there is evidence that they are more likely to receive punitive dispositions and less likely to receive rehabilitative dispositions (Cochran & Mears, 2015). Of the mental health challenges included in this model, it is predicted that substance use and aggression will be predictive of being referred to residential treatment centers, consistent with existing literature (O'Donnell & Lurigio, 2008). Finally, the protective factors are expected to be related to the outcome such that lower levels of these protective factors are predictive of a youth being referred for a residential treatment center.

Chapter 3: Methods

Previous chapters introduced this study and discussed the research related to the study constructs and research questions. This chapter focuses on the methodology used for this study, and describes the procedures taken to select the design, participants, data collection, and data analyses in terms of how they have been operationalized specifically for this study. As indicated previously, this study will examine disproportionality in mental health diagnoses in a sample of adolescents referred by juvenile or family court judges for a psychological evaluation. These results may provide insight into the role of the psychologist in systematic disenfranchisement of minority youth within this system through the assessment and referral process.

Participants & Setting

The present study draws from extant data from archived psychological evaluations conducted in a court-affiliated treatment facility in Indiana between 2013 and 2015. Each participant was an adolescent ordered by a juvenile court judge for a comprehensive psychological evaluation by a clinician prior to disposition (i.e. sentencing).

Indiana's juvenile justice system has been identified as disproportionately impacting minority youth (Indiana Criminal Justice Institute, 2013). Black youth in Indiana represent approximately 10% of the state's juvenile population (Indiana Criminal Justice Institute, 2013). However, in 2011, they represented 29% of state juvenile cases (Indiana Criminal Justice Institute, 2013).

The current sample includes 285 youth aged 12-18 years old (M = 14.63, SD = 1.42). Within this sample, males are overrepresented (66.70%), as is consistent with male overrepresentation in corrections across the state of Indiana (Indiana Criminal Justice Institute, 2013). Further, consistent with rates previously reported, White youth are the majority of youth

referred to the juvenile justice system and comprise 71.90% of the current sample (Indiana Criminal Justice Institute, 2013). In terms of mental health presentations, 71% of the youth had an internalizing diagnosis and 93% had an externalizing diagnosis. Further, 80% of the sample was referred to residential treatment.

Collection Procedures

All data included in this study were collected as a retrospective chart review of comprehensive psychological evaluations ordered by juvenile judges between 2013 and 2015. Each psychological evaluation completed included a cognitive measure (e.g. WISC-V, WJ-IV COG), an achievement measure (e.g. WIAT-III, WJ-IV ACH), a personality measure (e.g. MMPI-A, MACI), projective measures (e.g. Thematic Apperception Test, House-Tree-Person, Kinetic Family Drawing), the Trauma Screening Checklist for Children, the Substance Abuse Subtle Screening Inventory, broadband psychological symptom measures (e.g. Behavior Assessment System for Children), and narrowband symptom measures as needed. All evaluations were conducted by a licensed psychologist or by graduate student evaluators who were supervised by a licensed psychologist.

The extant data utilized in this study were collected in 2016 through a comprehensive review of all psychological evaluations. The results of each evaluation were compiled into a de-identified dataset and shared in March 2019 following the determination by the University of Washington Institutional Review Board (UW IRB) that the current study did not require review as it does not involve “human subjects,” as defined by federal regulations.

Measures

The following measures were selected from the de-identified dataset developed from a retrospective chart review of comprehensive psychological evaluations ordered by juvenile judges between 2013 and 2015.

Demographics

This data was collected about each adolescent evaluated, including their racial identification, gender, and age at the time of their evaluation. Due to small group sizes for minority youth, racial identity was recoded into a dichotomous variable (i.e. "minority" versus "non-minority"). For analysis, the variable age was standardized, and both minority status and gender were effect coded.

Behavior Assessment System for Children- Second Edition (BASC-2)

Mental health risk and protective factors were assessed using the Behavior Assessment System for Children – Second Edition (BASC-2; Reynolds, & Kamphaus, 2004). The BASC-2 is a norm-referenced broad diagnostic tool utilized to assess the behavior and perceptions of individuals 2 to 25 years old. The measure utilizes a multi-rater system with a Teacher Rating Scale (TRS), Parent Rating Scale (PRS), and Self-Report of Personality (SRP). Each rater form consists of approximately 100 items, each rated on a 4-point scale of *Never*, *Sometimes*, *Often*, and *Almost Always* (Reynolds & Kamphaus, 2004; Tan, 2007).

The Parent Rating Scale form of the BASC-2 was utilized in the present study to assess for externalizing mental health symptoms. For youth in the current sample, this form was completed by parents or legal guardians (e.g. foster parents, familial guardians, etc.). Subscales included in the current analysis were those of hyperactivity, aggression, and withdrawal.

Additionally, observable protective factors including social skills and adaptability were included. For analysis, each subscale score was standardized.

The Self-Report of Personality form of the BASC-2 was utilized in the present study to assess for internalizing mental health symptoms of which the youths themselves are likely to be more accurate reporters. Subscales included in the current analysis were those of stress, anxiety, and depression. Additionally, protective factors including quality relationship with parents, interpersonal relationships, and a positive attitude toward school were included. For analysis in the current study, these scores were standardized.

The BASC has demonstrated adequate reliability and validity (Community-University Partnership for the Study of Children, Youth, and Families (CUP), 2011; Tan, 2007). Between the BASC-2 Parent Rating form and the Self-Report of Personality form, the assessed median reliability for both the composites and the scales were determined to be "in the 0.70s" (CUP, 2011). Internal consistency has revealed alphas "in the 0.90s" for the composite scores and "in the 0.80s" for the scales, across all forms (CUP, 2011). Further, when the BASC-2 was compared to similar existing measures including the Conners Parent Rating Scale Revised, the Behavior Rating Inventory of Executive Functioning (BRIEF), and the first edition of the BASC, they were found to be relatively correlated. Correlations were found to be between 0.70 and 0.80 for the Conners and BRIEF, and approximately 0.90 for the first edition of the BASC (CUP, 2011). When compared to other existing self-report assessments including the ASEBA Youth Self-Report, the Conners Wells Adolescent Self-Report Scale (CASS), Children's Depression Inventory (CDI), Revised Children's Manifest Anxiety Scale (RCMAS), Brief Symptom Inventory (BSI), Beck Depression Inventory- II (BDI-II), and the Minnesota Multiphasic

Personality Inventory – Second Edition (MMPI-2), correlations varied more widely by scale. In general, these were found to be between 0.50 and 0.60.

Substance Use

A history of substance use was conservatively estimated using the Axis I diagnoses included in the youth's comprehensive psychological evaluation. The presence of a substance use disorder diagnosis (i.e. substance abuse or dependence) was utilized as an indicator of youth substance use and was coded as a dichotomous variable (i.e. "substance use" versus "no substance use").

Diagnosis

A significant body of literature has identified two broad dimensions of mental health challenges, labeled "externalizing" and "internalizing," (Achenbach & Rescorla, 2001; Mash & Barkley, 2010). For this study, internalizing profiles consisted of diagnoses that reflect overcontrol, social inhibition, withdrawal, and dissociation including anxiety, mood disorders, trauma and stressor-related disorders, and identity disorders. Externalizing profiles consisted of diagnoses that reflect disruptive behaviors and are outwardly directed including impulse-control disorders and conduct disorders (see Appendix C). Each was constructed into a dichotomous variable (i.e. "externalizing diagnosis" versus "no externalizing diagnosis") and was dummy coded.

Residential Placement Status

The outcome of interest in the present study was whether or not youth were referred for placement in a residential treatment center. For analysis, dummy coding was utilized for this variable. For the current study, a residential treatment center is defined as a live-in facility which houses multiple youth and emphasizes therapeutic intervention. The ultimate goal of such

facilities is to discharge youth with enhanced skills to be safe and successful at home and in the community. Residential treatment centers include less restrictive "staff-secured" facilities as well as "private, secure" facilities which include enhanced security measures such as locked doors and private rooms.

Statistical Analyses

For the current study, data are presented for youth who received comprehensive psychological evaluations based on court-order in Indiana between 2013 and 2015 to examine the relationship between a variety of factors including demographics, mental health challenges, mental health protective factors, and a history of trauma and the diagnostic profile a youth receives and the type of treatment (i.e. community-based or residential) to which they are referred.

Logistic Regression

All data were reviewed for accuracy, missing values, and the fit between their distributions and the assumptions of multivariate analysis. Missing data were handled using case-wise deletion (Meeyai, 2016). Data was then analyzed using logistic regression with sequential predictor entry. Logistic regression is an analytical procedure that allows for the prediction of a discrete outcome from a set of predictor variables (Tabachnick & Fidell, 2013). Further, the use of sequential predictor entry specifically allows for testing incremental improvement in model fit as predictor(s) are added to the model.

In considering the assumption of independence for the current sample, it is reasonable to conclude it has been met for the current study. While multiple clinicians conducted the comprehensive psychological evaluations, all recommendations were approved by one licensed

psychologist within the clinic. As a result, there were no concerns with non-independence of residuals.

A unique logistic regression with sequential predictor entry was utilized to examine each of the outcomes of interest (i.e. receiving an externalizing diagnostic profile, receiving an internalizing diagnostic profile, and referral to residential treatment). For each analysis, Block 1 included demographic predictors (i.e. age, minority status, gender), Block 2 included the mental health challenges (BASC-2 clinical subscale scores), and Block 3 included the mental health protective factors (BASC-2 adaptive subscale scores). The full models were as follows:

$$\text{Logit}_{internalizing} = \frac{1}{1 + e^{-1*(b_0 + b_1\text{AGE} + b_2\text{MINOR} + b_3\text{GENDER} + b_4\text{SUBUSE} + b_5\text{HYPER} + b_6\text{AGGR} + b_7\text{WITHDR} + b_8\text{STRESS} + b_9\text{ANX} + b_{10}\text{DEPR} + b_{11}\text{SOCSK} + b_{12}\text{ADAPT} + b_{13}\text{PARENT} + b_{14}\text{INTERP} + b_{15}\text{SCHOOL})}}$$

$$\text{Logit}_{externalizing} = \frac{1}{1 + e^{-1*(b_0 + b_1\text{AGE} + b_2\text{MINOR} + b_3\text{GENDER} + b_4\text{SUBUSE} + b_5\text{HYPER} + b_6\text{AGGR} + b_7\text{WITHDR} + b_8\text{STRESS} + b_9\text{ANX} + b_{10}\text{DEPR} + b_{11}\text{SOCSK} + b_{12}\text{ADAPT} + b_{13}\text{PARENT} + b_{14}\text{INTERP} + b_{15}\text{SCHOOL})}}$$

$$\text{Logit}_{res\ treatment} = \frac{1}{1 + e^{-1*(b_0 + b_1\text{AGE} + b_2\text{MINOR} + b_3\text{GENDER} + b_4\text{SUBUSE} + b_5\text{HYPER} + b_6\text{AGGR} + b_7\text{WITHDR} + b_8\text{STRESS} + b_9\text{ANX} + b_{10}\text{DEPR} + b_{11}\text{SOCSK} + b_{12}\text{ADAPT} + b_{13}\text{PARENT} + b_{14}\text{INTERP} + b_{15}\text{SCHOOL})}}$$

In these models, the log-odds (logits) of each outcome is equal to the conditional mean (b_0), plus the unique effects of age, minority status, gender ($b_1 – b_3$), as well as the unique effects of youth and guardian-reported mental health challenges ($b_4 – b_{10}$) and protective factors ($b_{11} – b_{15}$).

Odds Ratios

To assess for disproportionality in outcomes for this particular sample, unadjusted odds ratios were calculated to compare outcomes across gender and minority status. As described by Szumilas (2010), odds ratios are used to compare the relative odds of an outcome occurring (e.g. diagnosis, referral to treatment), given exposure to a particular variable (e.g. gender, minority status). An odds ratio greater than one is associated with higher odds of the outcome occurring and odds ratios less than one are associated with lower odds of the outcome. The unadjusted odds ratios were calculated using the following formula:

$$\text{OR} = \frac{(\text{Probability of Occurence for Group A}/\text{Probability of Non} - \text{Occurence for Group A})}{(\text{Probability of Occurence for Group B}/\text{Probability of Non} - \text{Occurence for Group B})}$$

Chapter 4: Results

Hypotheses were tested using multiple logistic regression analyses to examine the associations between demographic factors, mental health symptoms, and protective factors on diagnosis and treatment referral. Descriptive statistics including means, standard deviations, and zero-order correlations for the observed variables are reported in Table 1.

Results for Question 1

A multiple logistic regression with sequential predictor entry was used to predict which justice-involved youth received internalizing diagnoses using a sample of $N = 282$ youth (see Table 2). The dependent variable was dummy coded (i.e. internalizing diagnosis = 1, no internalizing diagnosis = 0). Demographic variables were entered in Block 1 including Age, Gender, and Minority Status (i.e. Minority or Non-Minority). This did not result in a significantly better model fit than the null model with no predictors, $\chi^2(3) = 2.98$, $p = 0.395$. The approximate variance accounted for was 0.02 using Nagelkerke's formula, and model sensitivity was 100% and specificity was 0% (the overall hit rate was 71%, which was the same as the null model's hit rate).

In Block 2, mental health symptoms as reported by the youth and their guardians were entered into the model including Substance Use, Hyperactivity, Aggression, Withdrawal, Social Stress, Anxiety, and Depression. This resulted in a significantly better model fit than the Block 1 model, $\chi^2(7) = 71.87$, $p < 0.001$ and the null model $\chi^2(10) = 74.85$, $p < 0.001$. The approximate variance accounted for using Nagelkerke's formula was 0.33, and the model sensitivity was 89% and the specificity improved to 41%. The hit rate was 75%, an improvement from both the null and Block 1 models.

For Block 3, protective factors as reported by the youth and their guardians were entered into the model including Social Skills, Adaptability, Relationship with Parents, Interpersonal Relationships, and Attitude to School. The addition of these variables was not found to have a better fit than the Block 2 model with symptoms alone, $\chi^2(5) = 5.23$, $p = 0.388$. Nevertheless, the overall model fit was still significantly better than the null, $\chi^2(15) = 80.08$, $p < 0.001$. The full model's Nagelkerke's pseudo-$R^2 = 0.35$, and sensitivity and specificity were 88% and 49% respectively. The overall hit rate was 77%, which was slightly better than the hit rate for the Block 2 model with symptoms alone (75%).

For brevity, only the coefficient estimates from the final model with all significant predictors entered will be interpreted here (see Table 3). The final model was as follows:

$$\text{Logit}_{\text{internalizing}} = \frac{1}{1+e^{-1*(b_0 + b_1\text{SUBUSE} + b_2\text{WITHDR} + b_3\text{DEPR})}}$$

Model results showed that the intercept was significantly different from zero (in other words, the mean predicted probability was significantly different from 50%): the log-odds of receiving an internalizing diagnosis across the sample (holding all predictors constant) was $b = 1.29$ ($SE = 0.18$), $Wald(1) = 49.92$, $p < 0.001$ (mean predicted probability of an internalizing diagnosis was 78%).

Substance Use was uniquely predictive of receiving an internalizing diagnosis ($b = -0.39$ ($SE = 0.15$), $Wald(1) = 6.56$, $p = 0.01$, $aOR = 0.68$), after controlling for all other variables. This indicates that youth who do use substances were 0.78 logits lower than those who do not use substances on receiving an internalizing diagnosis (effect coding used, so the coefficient was doubled 0.39*2 = 0.78), holding all other predictors constant. Two other ways to interpret this effect is using the adjusted *OR* and predicted probabilities. The adjusted *OR* indicates that youth who do not use substances have 0.68 times greater odds of receiving an internalizing diagnosis

compared to average (the predictor was effect coded). Computing the predicted probabilities based on the model estimates provides a clearer interpretation: youth who use substances had an 84% predicted probability of receiving an internalizing diagnosis compared to youth who do use substances (71% predicted probability). See Figure 1 for a plot of the predicted probabilities.

Withdrawal was also uniquely predictive of receiving an internalizing diagnosis ($b = 0.56$ ($SE = 0.16$), $Wald(1) = 11.52$, $p = 0.001$, $aOR = 1.75$), after controlling for all other variables. This indicates that for every standard deviation increase in withdrawal symptoms, a 0.56-logit increase in internalizing diagnosis is expected, holding all other variables constant. Another way to interpret this is that youth who are one standard deviation above average in withdrawal symptoms have 1.75 greater odds of receiving an internalizing diagnosis (youth with a relatively high level of withdrawal symptoms (+1 SD) had an 86% predicted probability of receiving an internalizing diagnosis, and those with a relatively low level of withdrawal symptoms (-1 SD) had a 67% predicted probability of receiving an internalizing diagnosis). See Figure 2 for a plot of predicted probabilities.

Unsurprisingly, depression was also uniquely predictive of receiving an internalizing diagnosis ($b = 1.26$ ($SE = 0.22$), $Wald(1) = 33.31$, $p < 0.001$, $aOR = 3.51$), after controlling for all other variables. This indicates that for every standard deviation increase in depression symptoms, a 1.26-logit increase in internalizing diagnosis is expected, holding all other variables constant. In other words, youth who are one standard deviation above average in depression symptoms have 3.51 times greater odds of receiving an internalizing diagnosis (youth with a relatively high level of depression symptoms (+1 SD) had a 93% predicted probability of receiving an internalizing diagnosis, and those with a relatively low level of depression

symptoms (-1 SD) had a 51% predicted probability of receiving an internalizing diagnosis). See Figure 3 for a plot of predicted probabilities.

Demographic Odds Ratios

While gender and minority status were not found to be significant predictors in this model, unadjusted odds ratios were calculated to evaluate this sample for the presence of disproportionality in internalizing diagnoses for justice-involved youth. For this sample, the probability of a minority youth receiving an internalizing diagnosis was 68% and 72% for non-minority youth. The unadjusted odds ratio indicates that non-minority youth have 1.19 times greater odds of receiving an internalizing diagnosis that their minority peers.

When comparing outcomes by gender, the probability of females receiving an internalizing diagnosis was 77% and 68% for males. The unadjusted odds ratio indicates that females have 1.57 times greater odds than their male peers of receiving an internalizing diagnosis.

Results for Question 2

Consistent with question one, a multiple logistic regression with sequential predictor entry was used to predict which justice-involved youth received externalizing diagnoses using the same sample of $N = 282$ youth (see Table 4). The dependent variable was dummy coded (i.e. externalizing diagnosis = 1, no externalizing diagnosis = 0). Demographic variables were entered in Block 1 including Age, Gender, and Minority Status (i.e. Minority or Non-Minority). This did not result in a significantly better model fit than the null model, $\chi^2(3) = 3.70$, $p = 0.296$. The approximate variance accounted for was 0.03 using Nagelkerke's formula, and model sensitivity was 100% and specificity was 0% (the overall hit rate was 93%, which was the same as the null model's hit rate).

In Block 2, mental health symptoms as reported by the youth and their guardians were entered into the model including Substance Use, Hyperactivity, Aggression, Withdrawal, Social Stress, Anxiety, and Depression. The addition of these predictors also did not result in a significantly better model fit than the Block 1 model, $\chi^2(7) = 5.68$, $p = 0.577$, and the null model $\chi^2(10) = 9.38$, $p = 0.497$**.** The approximate variance accounted for using Nagelkerke's formula was 0.08, and the model sensitivity, specificity, and overall hit rate remained consistent with the null and Block 1 models.

For Block 3, protective factors as reported by the youth and their guardians were entered into the model including Social Skills, Adaptability, Relationship with Parents, Interpersonal Relationships, and Attitude to School. The addition of these variables resulted in a significantly better fit than the Block 2 model with symptoms alone, $\chi^2(5) = 12.74$, $p = 0.026$. However, the overall model fit was not significantly better than the null model, $\chi^2(15) = 22.12$, $p = 0.105$. The full model's Nagelkerke's pseudo-$R^2 = 0.19$, and sensitivity and specificity were 100% and 11% respectively. The overall hit rate was 94%, which was slightly better than the hit rate for the Block 2 model with symptoms alone (93%).

Model results showed that the intercept was significantly different from zero (in other words, the mean predicted probability was significantly different from 50%): the log-odds of receiving an internalizing diagnosis across the sample (holding all predictors constant) was $b = 3.31$ ($SE = 0.42$), $Wald(1) = 62.98$, $p < 0.001$ (mean predicted probability of an externalizing diagnosis was 96%). No other predictors in the model were found to be significant.

Demographic Odds Ratios

Unadjusted odds ratios were calculated to evaluate this sample for the presence of disproportionality in externalizing diagnoses across gender and minority status for justice-

involved youth. For this sample, the probability of a minority youth receiving an externalizing diagnosis was 96% and 92% for non-minority youth. The unadjusted odds ratio indicates that minority youth had 2.13 times greater odds than their non-minority peers of receiving an externalizing diagnosis.

When comparing outcomes by gender, the probability of receiving an externalizing diagnosis was almost equal, 93% for males and 94% for females. The unadjusted odds ratio indicates that females had 1.09 times greater odds than their male peers of receiving an externalizing diagnosis.

Results for Question 3

A final multiple logistic regression with sequential predictor entry was used to predict which justice-involved youth would be referred for residential treatment using the same sample of $N = 282$ youth (see Table 5). The dependent variable was dummy coded (i.e. residential treatment = 1, no residential treatment = 0). Demographic variables were entered in Block 1 including Age, Gender, and Minority Status. This did not result in a significantly better model fit than the null model, $\chi^2(3) = 0.48$, $p = 0.924$. The approximate variance accounted for was 0.003 using Nagelkerke's formula, and model sensitivity was 100% and specificity was 0% (the overall hit rate was 79%, which was the same as the null model's hit rate.

In Block 2, mental health symptoms as reported by the youth and their guardians were entered into the model including Substance Use, Hyperactivity, Aggression, Withdrawal, Social Stress, Anxiety, and Depression. The addition of these predictors resulted in a significantly better model fit than the Block 1 model, $\chi^2(7) = 39.17$, $p < 0.001$, and the null model $\chi^2(10) = 39.65$, $p < 0.001$. The approximate variance accounted for using Nagelkerke's formula was 0.21. The

model sensitivity and specificity were 97% and 16% respectively, and the overall hit rate improved to 80% compared to the null and Block 1 models.

For Block 3, protective factors as reported by the youth and their guardians were entered into the model including Social Skills, Adaptability, Relationship with Parents, Interpersonal Relationships, and Attitude to School. The addition of these variables did not result in a significantly better fit than the Block 2 model with symptoms alone, $\chi^2(5) = 6.30$, $p = 0.278$**.** However, the overall model fit was significantly better than the null model, $\chi^2(15) = 45.94$, $p < 0.001$. The full model's Nagelkerke's pseudo-$R^2 = 0.24$, and sensitivity and specificity were 97% and 21% respectively. The overall hit rate was 82%, which was slightly better than the hit rate for the Block 2 model with symptoms alone.

Only the coefficient estimates from the final model with all significant predictors entered will be interpreted here (see Table 6). The final model was as follows:

$$\text{Logit}_{\text{res treatment}} = \frac{1}{1+e^{-1*(b_0 + b_1\text{SUBUSE} + b_2\text{AGGR})}}$$

The final model results showed that the intercept was significantly different from zero: the log-odds of being referred for residential treatment across the sample (holding all predictors constant) was $b = 1.62$ ($SE = 0.19$), $Wald(1) = 77.39$, $p < 0.001$ (mean predicted probability of referral to residential treatment was 84%).

Substance use was uniquely predictive of being referred for residential treatment ($b = 0.44$ ($SE = 0.16$), $Wald(1) = 7.52$, $p < 0.01$, $aOR = 1.56$), after controlling for all other variables. This indicates that youth who use substances were 0.44 logits higher than those who do not use substances on referral for residential treatment, holding all other predictors constant. The adjusted *OR* indicates that youth who do use substances have 1.56 times greater odds of being referred for residential treatment compared to average. Computing the predicted probabilities

based on the model estimates provides a clearer interpretation: youth who do not use substances had an 77% predicted probability compared to youth who do use substances who had an 89% predicted probability of being referred to residential treatment. See Figure 4 for a plot of the predicted probabilities.

Within this model, aggression was also uniquely predictive of being referred to residential treatment ($b = 0.94$ ($SE = 0.20$), $Wald(1) = 22.06$, $p < 0.001$, $aOR = 2.55$), after controlling for all other variables. This indicates that for every standard deviation increase in aggression symptoms, a 0.94-logit increase in referral for residential treatment is expected, holding all other variables constant. Another way to interpret this is that youth who are one standard deviation above average in aggression symptoms have 2.55 times greater odds of being referred for residential treatment (youth with a relatively high level of aggression symptoms (+1 SD) had a 93% predicted probability of being referred to residential treatment, and those with a relatively low level of aggression symptoms (-1 SD) had a 67% predicted probability of being referred for residential treatment). See Figure 5 for a plot of predicted probabilities.

Demographic Odds Ratios

Unadjusted odds ratios were calculated to evaluate this sample for the presence of disproportionality in referral to residential treatment across gender and minority status for justice-involved youth. For this sample, the probability of a minority youth being referred to residential treatment was 81% and 79% for non-minority youth. The unadjusted odds ratio indicates that minority youth had 1.12 times greater odds than their non-minority peers of being referred to residential treatment.

When comparing outcomes by gender, the probability of referral to residential treatment was 80% for males and 78% for females. The unadjusted odds ratio indicates that males had 1.17 times greater odds than their female peers of being referred to residential treatment.

Chapter 5: Discussion

The goal of the current study was to examine disproportionality in mental health diagnoses and treatment referrals in a sample of adolescents referred by juvenile court judges for psychological evaluations. Hypotheses were tested using multiple logistic regression analyses to examine the associations between demographic factors, mental health symptoms, and protective factors on diagnosis and treatment referral. Promisingly, clinical factors including depression, withdrawal, substance use, and aggression were found to be predictive of diagnoses and referral for treatment. While results indicated that demographic factors including gender and minority status were not significant predictors, unadjusted odd ratios indicate that there may still be disproportionality in some outcomes, particularly the diagnosis of externalizing disorders.

Internalizing Diagnoses in Juvenile Justice

Consistent with this study's hypothesis, withdrawal and depression significantly predicted which youth would receive an internalizing diagnosis. Most notably, youth with high levels of depression were more than 3.51 times more likely to receive an internalizing diagnosis. These results are consistent with what would be expected given that depression is a common internalizing disorder experienced by adolescents, particularly in the juvenile justice system (Thapar et al., 2012). Furthermore, these results are promising as they may reflect psychologist focus on relevant symptoms reported by youth and their guardians to guide diagnosis, rather than personal characteristics, as these symptoms are included in the diagnostic criteria for many internalizing diagnoses.

In contrast to this study's hypothesis, substance use was found to have a significant, inverse relationship with internalizing diagnoses such that youth who do not use substances had an increased likelihood of receiving an internalizing diagnosis compared to youth who do use

substances. This was surprising given the notable body of research indicating a relationship between internalizing disorders and substance use, including some evidence that substance use disorders may increase risk for internalizing disorders (O'Neil, Conner, & Kendall, 2011).

It was hypothesized that demographic factors including gender (e.g. being female) and minority status (e.g. being White) would be predictive of receiving an internalizing diagnosis. While gender and minority status were not found to be significant predictors in this model, unadjusted odds ratios were calculated to evaluate this sample for evidence of disproportionality. Consistent with existing literature, odds ratios indicated for this sample that females were more likely than males to be diagnosed with an internalizing disorder. Within community samples, the preponderance of all cases of depression occur in females and rates of anxiety disorders are also higher for females (Kessler et al., 2005; Thapar et al., 2012). Furthermore, White youth in this sample were slightly more likely than their minority peers to receive an internalizing diagnosis. This is also consistent with the literature which has found evidence that minority youth are less likely to be diagnosed with mood and anxiety disorders than their White peers (Liang et al., 2016).

Externalizing Diagnoses in Juvenile Justice

The full model to predict externalizing diagnoses was found to have no significant predictors. Rather, the intercept was significantly different from zero, indicating that there is a baseline level of the outcome that is not attributed to the predictors. That is, if a youth did not have any levels of any of the predictors, they would likely still be diagnosed with an externalizing disorder. This may be explained by the absence of important predictive variables (e.g. criminogenic risk factors or additional clinical factors) in the current study.

Unadjusted odds ratios were calculated to evaluate this sample for indicators of disproportionality in externalizing diagnoses across gender and minority status. When comparing across gender, unadjusted odds ratios indicated that the likelihood of receiving an externalizing diagnosis was almost equal. This finding was unexpected as males are consistently identified in the literature as demonstrating increased externalizing behaviors compared to females (Eaton et al., 2012). Community samples have also demonstrated that males are significantly more likely than females to be diagnosed with Attention-Deficit Hyperactivity Disorder and Conduct Disorder (Merikangas et al., 2010; NIMH, 2017). As the current study was conducted utilizing a justice-involved sample, the referrals typically resulted from the youth engaging in criminal behavior. Regardless of gender, the nature of these referrals may necessitate that clinicians diagnose an externalizing disorder to explain such challenging behavior.

Consistent with existing literature, minority youth in this sample were more than twice as likely than their White peers to receive an externalizing diagnosis. Minority youth are regularly identified in the literature as being more likely to be diagnosed with disruptive behavior disorders and conduct-related problems than their White peers (Liang et al., 2016). Previous research exploring disproportionality in diagnoses for justice-involved youth found that Black males were 40% more likely to be diagnosed with Conduct Disorder and 40% more likely to be diagnosed with Attention-Deficit Hyperactivity Disorder than their White peers (Baglivio et al., 2017). While the current analysis does not allow for causal conclusions, Dalton et al. (2009) argued that this can occur when providers attribute symptom expression to behavioral problems and not emotional problems more often in Black than in White youth.

Referrals to Residential Treatment

The current study found that clinical factors including substance use and aggression were uniquely predictive of being referred for residential treatment. For the current sample, youth who used substances were more likely to be referred for residential treatment. Results for aggression indicated that youth who have higher levels of aggression symptoms are 2.55 times more likely to be referred for residential treatment. Both substance use and aggression (i.e. "antisocial behavior") are identified as "Big 8" factors – those that are predictive of criminal behavior including antisocial thinking, association with deviant peers, and limited engagement with school/work (van Horn et al., 2018). A significant body of literature has connected substance use and criminal behavior; thus, it would be expected that these behaviors are associated with referral to a more secure placement. Generally, residential settings are believed to enable youth to focus on treatment while denying access to substances (O'Donnell & Lurigio, 2008). Likewise, a pattern of aggression may be perceived by psychologists as a threat to the youth's safety as well as that of others. Placement in residential treatment with constant supervision could allow clinicians to treat the youth's patterns of aggression and substance use while ensuring safety. These results are promising and indicate the value of court-ordered psychological assessments in connecting youth with appropriate services for their needs.

When comparing across gender, the unadjusted odds ratio indicated little difference between males and females in referral to residential treatment. A possible explanation for this outcome could be that higher rates of aggressive behavior are observed in males, resulting in clinician perception that these behaviors require more secure placement to ensure the safety of the youth and the community.

Unadjusted odds ratios revealed unanticipated results related to racial disproportionality in referrals to residential treatment. For this sample, minority youth and their White peers had almost equal chances of being referred to residential treatment. This finding is unexpected based on two lines of existing research. First, a vast body of research has demonstrated that Black youth are less likely to receive mental health treatment within juvenile justice. Spinney et al., (2016) conducted a meta-analysis of research on referrals to mental health services within the juvenile justice system and found that 69% of included studies demonstrated a significant effect of race on the decision to refer youth for mental health or substance use treatment. Fader and colleagues (2013) found that even when controlling for legal and symptom-related factors, race was a significant predictor of treatment received. That study found that Black youth were more likely to be committed to military-style facilities rather than smaller, therapeutic facilities. Similarly, Baglivio et al. (2017) found that juvenile justice-involved Black males were 32% less likely to receive psychiatric treatment compared to their male peers. Second, research has demonstrated across systems that Black youth are more likely to receive more severe punishments (National Conference for State Legislators, 2011). Within juvenile justice, Brown and Sorensen (2013) sought to determine what factors contributed to case transfer to adult court. When controlling for legally relevant differences in the cases, the researchers found that both race and gender played notable roles. Specifically, they found that minority youth were three times more likely than their White peers to be transferred to adult court. The difference observed in the present study may be attributed to the agency at which the assessments were conducted, which offered a spectrum of residential treatment programs on site to serve youth. As clinicians were a part of this agency, they may have recognized the potential benefits of residential treatment to address the clinical challenges of aggression and substance use.

Implications for Practice

The results of the current study support claims that the use of standardized measures of clinical symptoms may reduce bias in clinical practice. Findings indicated that demographic variables including gender and minority status were not significant predictors of which youth are referred to more restrictive treatment settings. Whereas other studies have found demographic variables to be predictive of placement in a residential setting for justice-involved youth, the current study found no such evidence (e.g. Baglivio et al., 2017; Heaton, 2018; Kempker et al., 2017). Rather, clinical factors, including substance use and aggression, were predictive of this outcome. This indicates that clinicians may have been relying appropriately on the clinical needs of youth as indicated by standardized measures, rather than personal factors, in decision making about treatment referrals. While the current study utilized a broad measure that was widely normed on community samples, measures designed to evaluate the specific needs and challenges of justice-involved youth would be more appropriate for use in court-ordered assessments. For example, the Massachusetts Youth Screening Instrument – Version 2 (MAYSI-2) is brief screening measure designed specifically for use within juvenile justice programs and facilities with the stated goal of identifying those who may require mental health supports (Grisso & Barnum, 2000). The MAYSI-2 scales reflect areas of need including substance use, anger, depression and anxiety, somatic complains, suicidal ideation, thought disturbance, and trauma. Additionally, the use of more narrow measures of mental health symptoms may be appropriate for follow-up to explore more deeply any areas of concern identified using a broad measure.

Increasing clinician awareness of objectivity to reduce bias in assessment and service provision is a complex challenge. While standardized measures may help in collecting data about youth symptoms in a more systematic, unbiased manner, these are not the only factor considered

when making treatment referrals. As Hoge (1999) observed, psychologists rely heavily on judgment. Chapman and colleagues (2013) recommended "individuating" as a strategy for reducing bias in clinical interactions. Individuating or being "patient-centered" involves a conscious effort to focus on specific information about an individual, making it more salient in later decision-making than the person's social category information (e.g. race and gender).This approach could be beneficial throughout the assessment process including during clinical interviews, the selection of standardized measures, and when writing about the youth's background in the report.

The results of the current study are encouraging as race and gender did not predict the diagnoses or recommendations made by clinicians. The observed differences in outcomes for the current sample, particularly in the diagnosis of externalizing disorders, may then be the result of bias at earlier stages within the juvenile justice system such as arrest or referral for assessment. While best practices have been identified for reducing the impact of bias in systems of care, they often continue to be implemented inconsistently or incompletely, if at all. Systemic Racism Theory may help explain this discrepancy (Feagin, 2006). Decision-makers within these systems of care are predominantly White. Whether consciously or not, most have likely been socialized into a white racial frame that shapes their worldview and affects "the creation and implementation of policies and practices that account for institutionalized inequalities," (Castle et al., 2019; p. 28). Studies such as this one provide indications that strategies such as court-ordered psychological assessment can ensure that treatment decisions are based on need, rather than demographic variables such as gender or race.

Culturally Responsive Assessment and Diagnosis

Mental health systems are particularly vulnerable to the effects of implicit bias because the diagnosis and treatment of mental health challenges rely so heavily on provider judgment (Hoge, 1999; Merino et al., 2018). Even with standardized diagnostic criteria in the *DSM-5*, previous studies indicated that mental health providers are more likely to underdiagnose affective disorders and overdiagnose psychotic disorders among patients from marginalized groups (Merino et al., 2018; Nakash & Saguy, 2015). With misdiagnosis comes the chance that clinicians do not refer patients to the appropriate professionals or inadvertently deny access to appropriate treatment (Merino et al., 2018).

Culturally responsive clinical practices, including those in assessment and diagnosis, could be useful in reducing the impact of clinician bias. Cultural responsiveness has been defined as a clinician's expressed commitment to gaining awareness, knowledge, and skills that can promote positive outcomes for diverse clients, with an understanding of the impact of societal and institutional systems on their experiences (Graham-LoPresti et al., 2019; Sue & Sue, 2003).

Graham-LoPresti and colleagues (2019) identified specific strategies to increase clinician awareness of relevant attitudes and beliefs, increase knowledge of cultural values of diverse clients, and increase skills relevant to appropriate assessment and intervention. One strategy described that can increase clinician awareness of values and beliefs is the use of a clinical interview that includes an exploration of cultural variables, such as the ADDRESSING framework (Hays, 2008). This acronym prompts clinicians to develop their self-awareness and to better understand relevant aspects of the identity of their clients including age and generational influences, disabilities, spiritual orientation, ethnicity, socioeconomic status, etc. (see Appendix D). By attending specifically to the dimensions of the client's identity in the clinical interview,

the clinician may be more likely to view each client's cultural context as valuable to the assessment and intervention process. A second strategy recommended was to utilize standardized assessment measures that are culturally appropriate and that are normed and validated on the specific population being evaluated. To do so, clinicians must develop their skills in critically examining the development of standardized measures through review of administration manuals and available research. A final strategy for culturally responsive practice was the use of a collaborative and transparent process when developing the diagnostic formulation. This includes clinician transparency about the diagnostic process, the rationale and use of the diagnosis, and information about who will have access this information (e.g. office staff, other providers, insurance company employees, employers, etc.). Additionally, it was recommended that clinicians have an open conversation with the client to process their reactions to the diagnosis and to explore how it fits with their understanding of the presenting challenges. The use of such culturally responsive strategies as those described can improve the quality of the therapeutic relationship and the therapeutic process.

Rehabilitation Reform

Systems of care need to be reformed so that they can support the sustained use of best practices. This will likely require reallocating resources from systems that historically punish toward those that rehabilitate. The Missouri Model of juvenile justice has been pointed to as a system-level reform that has resulted in promising outcomes for youth (Huebner, 2013). The model emphasizes four main components reflecting the shift toward rehabilitation including (1) intensive, continuous case management, (2) decentralized, smaller residential facilities, (3) small-group, peer led services, and (4) a restorative, rehabilitation-centered treatment environment. While a systematic study has not been conducted to compare the Missouri Model

to other programs, there is preliminary evidence of low recidivism rates for youth who have completed the program and minimal use of mechanical restraints (Huebner, 2013; Mendel, 2010).

Limitations

There were several limitations in the present study which arose from the secondary data analysis approach utilized. These methodological limitations included the limited variables available, a small and homogenous sample, and coding challenges.

The extant data included in this study were collected as a retrospective chart review of comprehensive psychological evaluations and compiled into a de-identified dataset. As a result, the current study was restricted to the variables collected for that dataset. The current study therefore was unable to include legal variables that are often considered relevant to outcome studies for justice-involved youth including history of past justice-involvement, and legal charge type and severity. The absence of such variables may partially explain the lack of significant predictors within the externalizing diagnosis model.

While representative of the justice system in Indiana, the current sample contained an overrepresentation of white youth and males compared to the general population. The limited number of minority cases in the current sample likely limited the power of this analysis to detect any significant race effect. Further, such a sample limits the generalizability of the current study to other juvenile court systems. In order to develop more complex models capable of detecting significant effects and reflective of juvenile justice across the United States, a larger and more diverse sample will continue to be necessary.

Hypotheses in the current study were tested using multiple logistic regression analyses to examine the associations between demographic factors, mental health symptoms, and protective

factors on diagnosis and treatment referral. The use of a dichotomized outcome resulted in a loss of information. While residential treatment was more clearly defined within the current study than in previous research, the mere occurrence or non-occurrence of residential treatment does not provide important additional context about the experience youth within these settings. Similarly, the minority status variable was dichotomized to reflect minority versus non-minority due to the relatively small groups of minority youth in the present sample. This also results in a loss of important information about the unique experiences of these populations.

Finally, the use of logistic regression does not necessarily allow for causal conclusions. That is to say that just because the probability of the outcome is predicted by some variables does not necessarily mean that those predictors cause the outcome (Tabachnick & Fidell, 2013).

Future Directions for Research

In addition to the practical implications discussed, the findings of this study point to future directions within research. Despite methodological limitations, the present study may indicate disproportionality in the diagnosis of mental health disorders in the current sample of justice-involved youth. However, race and gender were not significant predictors of diagnosis type. As such, observed differences may be due to decisions made at earlier stages of involvement with juvenile justice. Future studies should explore other junctures, both formal (i.e. sentencing) and informal (i.e. judicial orders for psychological evaluations), for the possible impact of implicit bias on decision-making and evidence of disproportionality. Such studies will contribute to a more comprehensive picture of how and when bias may be impacting youth trajectories.

Another direction for future studies could be expanding the current body of literature on the impact of implicit bias on mental health services. While there is an extensive body of

literature focusing on the impact of clinician implicit bias on medical service provision and patient experiences with medical providers, few studies have looked at the unique context of mental health. Specifically, no studies have explicitly explored the impact of bias on the provision of mental health services and effectiveness of treatment. A mixed methods design could be particularly beneficial to be able to observe quantitatively whether bias impacts service quality, but also to understand the unique experiences of minority clients in mental health services through qualitative exploration.

Finally, continued translational research is required about how to effectively increase stakeholder buy-in to implement reforms that have been proven effective. A growing body of knowledge about evidence-based practices within systems of care continues to be of little value if policy makers remain unaware and uninvested in making systemic shifts.

Conclusion

There is widespread recognition that adolescents with mental health needs are overrepresented in the juvenile justice system (Robst et al., 2017). Juvenile courts can utilize mental health placements as a disposition to avoid the possible negative effects of incarceration on youth development and recidivism (Mallett & Boitel, 2016). However, disproportionality is evident in access to treatment through the juvenile justice system (Baglivio et al., 2017; Herz, 2001; Spinney et al., 2016). There is also evidence that the factors that most strongly predict which youth receive mental health treatment include factors that may not be related to diagnosis or need, but rather race and gender (Herz, 2001).

The results of the current study indicated that clinical factors consistent with the need for mental health treatment including depression, withdrawal, aggression, and substance use were significant predictors of which youth received mental health diagnoses and were referred for

residential treatment. Conversely, demographic factors including gender and minority status were not significant predictors. However, unadjusted odd ratios indicated that there may be disproportionality in outcomes, particularly the diagnosis of externalizing disorders.

The presence of disproportionality based on demographic factors that were not significant predictors in the model may indicate that experiences at other points of contact with systems such as education, mental health, or juvenile justice may be contributing to differential outcomes for youth based on their ethnicity or gender. While the current study shows promisingly the ability of clinicians to identify appropriate diagnoses and connect youth with treatment, mental health systems continue to be vulnerable to the effects of implicit bias because diagnosis and treatment rely so heavily on provider judgment (Hoge, 1999; Merion et al., 2018). Past studies have indicated that even with standardized diagnostic criteria in the *DSM-5*, mental health providers were more likely to underdiagnose affective disorders and overdiagnose psychotic disorders among patients from marginalized groups (Merino et al., 2018; Nakash & Saguy, 2015). The results of the current study echo Hoge's (1999) call for clinicians to utilize more standardized measures, with culturally responsive practices, to ensure equity in the treatment of youth within the juvenile justice system. Within the current sample, clinicians appear to have focused on relevant mental health symptoms (e.g. aggression, depression, withdrawal) and high-risk behaviors (e.g. substance use) in diagnosing and determining which youth could benefit from residential treatment.

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Table 1.

Table 1.

Descriptives and Zero-Order Correlations

Measure	*M*	*(SD)*	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
Outcomes																				
1. Internalizing Diagnosis	*0.71*	*(0.46)*	--																	
2. Externalizing Diagnosis	*0.93*	*(0.25)*	-0.02	--																
3. Residential Treatment	*0.79*	(0.41)	-0.02	0.04	--															
Block 1 Predictors																				
4. Age	14.63	(1.41)	0.03	-0.09	0.01	--														
5.Minority Status	0.28	(0.47)	-0.04	0.07	0.02	-0.12 *	--													
6. Gender	0.67	(0.47)	-0.09	-0.01	0.03	-0.15 *	-.03	--												
Block 2 Predictors																				
7. Substance Use	0.52	(0.50)	-0.13 *	0.05	0.18 **	0.19 **	-0.10	-0.02	--											
8. Hyperactivity	65.92	(15.71)	0.11	0.07	0.23 ***	0.05	-0.01	0.04	0.12	--										
9. Aggression	64.17	(14.83)	0.05	0.09	0.30 ***	-0.06	0.03	0.06	0.04	0.81 ***	--									
10. Withdrawal	55.36	(11.14)	0.23 ***	0.01	0.07	0.10	-0.10	0.02	-0.05	0.49 ***	0.42 ***	--								
11. Social Stress	53.73	(12.47)	0.32 ***	-0.01	0.06	-0.05	-0.13 *	-0.07	-0.08	0.19 **	0.15 *	0.15 *	--							
12. Anxiety	53.15	(11.93)	0.34 ***	0.01	0.01	-0.02	-0.05	-0.17 **	0.00	0.10	0.06	0.10	0.72 ***	--						
13. Depression	55.17	(12.75)	0.38 ***	0.06	0.04	-0.03	-0.12	-0.17 **	0.03	0.19 **	0.13 *	0.12	0.75 ***	0.70 ***	--					
Block 3 Predictors																				
14. Social Skills	41.88	(10.74)	0.00	-0.19 **	-0.16 **	0.06	-0.08	-0.03	-0.04	-0.44 ***	-0.54 ***	-0.42 ***	0.00	0.06	-0.04	--				
15. Adaptability	40.00	(10.32)	-0.12	-0.17 **	-0.24 ***	-0.01	0.00	-0.08	-0.14 *	-0.72 ***	-0.65 ***	-0.58 ***	-0.10	-0.04	-0.12	0.61 ***	--			
16. Relationship with Parents	46.48	(11.94)	-0.22 ***	-0.10	-0.02	-0.01	-0.01	0.00	-0.08	-0.22 ***	-0.24 ***	-0.10	-0.30 ***	-0.26 ***	-0.37 ***	0.26 ***	0.21 ***	--		
17. Interpersonal Relationships	48.06	(12.49)	-0.24 ***	0.03	0.00	0.38	0.20 **	-0.09	0.09	-0.13 *	-0.09	-0.19 **	-0.70 ***	-0.51 ***	-0.53 ***	0.04	0.09	0.26 ***	--	
18. Attitude to School	53.44	(12.71)	0.07	0.36	0.08	-0.04	-0.17 **	-0.01	0.20 **	0.08	0.04	0.03	0.28 ***	0.18 **	0.39 ***	-0.12 *	-0.07	-0.20 **	-0.20 **	--

Note. N=282.

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

Table 2.

Table 2.
Model Results for Internalizing Diagnoses

	Block 1					Block 2					Block 3				
	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*
Model Fit	2.98	0.02	0.71			71.87 ***	74.85 ***	0.33	0.75			5.23	80.08 ***	0.35	0.77		
Coefficients																	
Intercept				0.92 ***	2.51					1.35 ***	3.87					1.37 ***	3.94
Age				0.02	1.02					0.24	1.27					0.22	1.24
Minority Status				0.09	1.10					0.00	1.00					0.01	1.01
Gender				0.23	1.02					0.06	1.06					0.09	1.10
Substance Use										0.45 **	1.57					0.45 **	1.57
Hyperactivity										0.18	1.19					-0.03	0.97
Aggression										-0.35	0.71					-0.28	0.76
Withdrawal										0.61 **	1.84					0.61 **	1.83
Social Stress										-0.06	0.94					-0.10	0.91
Anxiety										0.29	1.33					0.26	1.29
Depression										1.17 ***	3.21					1.16 ***	3.18
Social Skills																0.27	1.32
Adaptability																-0.29	0.75
Relationship with Parents																-0.28	0.76
Interpersonal Skills																-0.04	0.96
Attitude to School																-0.16	0.85

Note. N=282. Block 1 chi-square change test df = 3 Block 2 df = 7 Block 3 df = 5 Internalizing diagnoses dummy coded 1 = internalizing diagnosis, 0 = no internalizing diagnosis; substance use effect coded 1= substance use, -1 = no substance use; minority status effect coded 1 = minority, -1 = non-minority; and gender effect coded 1 = male, -1 = female.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3.

Table 3.
Final Model Results for Internalizing Diagnosis

	$\chi^2(3)$	*p*	*Pseudo* R^2	*Sens*	*Spec*	*HR*	*b*	*(SE)*	*Wald*	*p*	*OR*
Internalizing Diagnosis	68.35	<0.001	0.31	89.90	44.60	76.60					
Intercept							1.29	(0.18)	49.92	<0.001	3.62
Substance Use							-0.39	(0.15)	6.56	0.010	0.68
Withdrawal							0.56	(0.16)	11.52	0.001	1.75
Depression							1.26	(0.22)	33.31	<0.001	3.51

Note. N=282. Internalizing diagnosis dummy coded 1 = internalizing diagnosis, 0 = no internalizing diagnosis and substance use effect coded 1= substance use, -1 = no substance use.

Table 4.

Table 4.
Full Model Results for Externalizing Diagnoses

	Block 1					Block 2					Block 3					
	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*
Model Fit	3.70	0.03	93.30			5.68	9.38	0.08	93.30			12.74 *	22.12	0.19	94.00		
Coefficients																	
Intercept				6.36 *	576.07					6.59 *	723.87					6.09 *	443.32
Age				-0.25	0.78					-0.28	0.76					-0.21	0.81
Minority Status				0.66	1.93					0.66	1.94					0.42	1.53
Gender				-0.19	0.83					-0.07	0.93					-0.10	0.91
Substance Use										0.47	1.59					0.22	1.25
Hyperactivity										0.11	1.12					-0.04	0.97
Aggression										0.24	1.28					-0.37	0.69
Withdrawal										-0.03	0.97					-0.48	0.62
Social Stress										-0.46	0.63					-0.32	0.73
Anxiety										-0.07	0.93					0.08	1.09
Depression										0.65	1.92					0.64	1.90
Social Skills																-0.60	0.55
Adaptability																-0.82	0.44
Relationship with Parents																-0.14	0.87
Interpersonal Skills																0.34	1.40
Attitude to School																0.05	1.05

Note. N=282. Block 1 chi-square change test df = 3 Block 2 df = 7 Block 3 df = 5 Externalizing diagnoses dummy coded 1 = externalizing diagnosis, 0 = no externalizing diagnosis; substance use effect coded 1= substance use, -1 = no substance use; minority status effect coded 1 = minority, -1 = non-minority; and gender effect coded 1 = male, -1 = female.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 5.

Table 5.
Full Model Results for Residential Treatment

	Block 1					Block 2					Block 3				
	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*	χ^2_{change}	χ^2_{total}	*Nagelkerke*	*HR*	*b*	*OR*
Model Fit	0.56	0.00	79.40			39.09 ***	39.65 ***	0.21	80.10			6.31	45.96 ***	0.24	81.60		
Coefficients																	
Intercept				0.58	1.78					0.52	1.68					0.18	1.20
Age				0.03	1.03					0.04	1.04					0.07	1.07
Minority Status				0.13	1.14					0.17	1.18					0.17	1.19
Gender				0.19	1.20					0.09	1.09					0.13	1.14
Substance Use										0.94 **	2.57					0.92 *	2.49
Hyperactivity										-0.09	0.91					-0.36	0.70
Aggression										1.08 **	2.94					1.20 **	3.32
Withdrawal										-0.17	0.84					-0.24	0.79
Social Stress										0.32	1.38					0.44	1.56
Anxiety										-0.15	0.87					-0.13	0.88
Depression										-0.15	0.86					-0.05	0.95
Social Skills																0.13	1.13
Adaptability																-0.44	0.64
Relationship with Parents																0.31	1.36
Interpersonal Skills																0.19	1.21
Attitude to School																0.13	1.14

Note. N=282. Block 1 chi-square change test df = 3 Block 2 df = 7 Block 3 df = 5 Residential Treatment dummy coded 1 = residential treatment, 0 = no residential treatment; substance use effect coded 1= substance use, -1 = no substance use; minority status effect coded 1 = minority, -1 = non-minority; and gender effect coded 1 = male, -1 = female.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 6.

Table 6.
Final Model Results for Residential Treatment

	χ^2 (2)	*p*	*Pseudo* R^2	*Sens*	*Spec*	*HR*	*b*	*(SE)*	*Wald*	*p*	*OR*
Residential Treatment	36.75	<0.001	0.19	98.20	17.20	81.60					
Intercept							1.62	(0.19)	77.39	<0.001	5.07
Substance Use							0.44	(0.16)	7.52	<0.01	1.56
Aggression							0.94	(0.20)	22.06	<0.001	2.55

Note. N=282. Residential Treatment dummy coded 1 = residential treatment, 0 = no residential treatment and substance use effect coded 1= substance use, -1 = no substance use.

Figure 1.

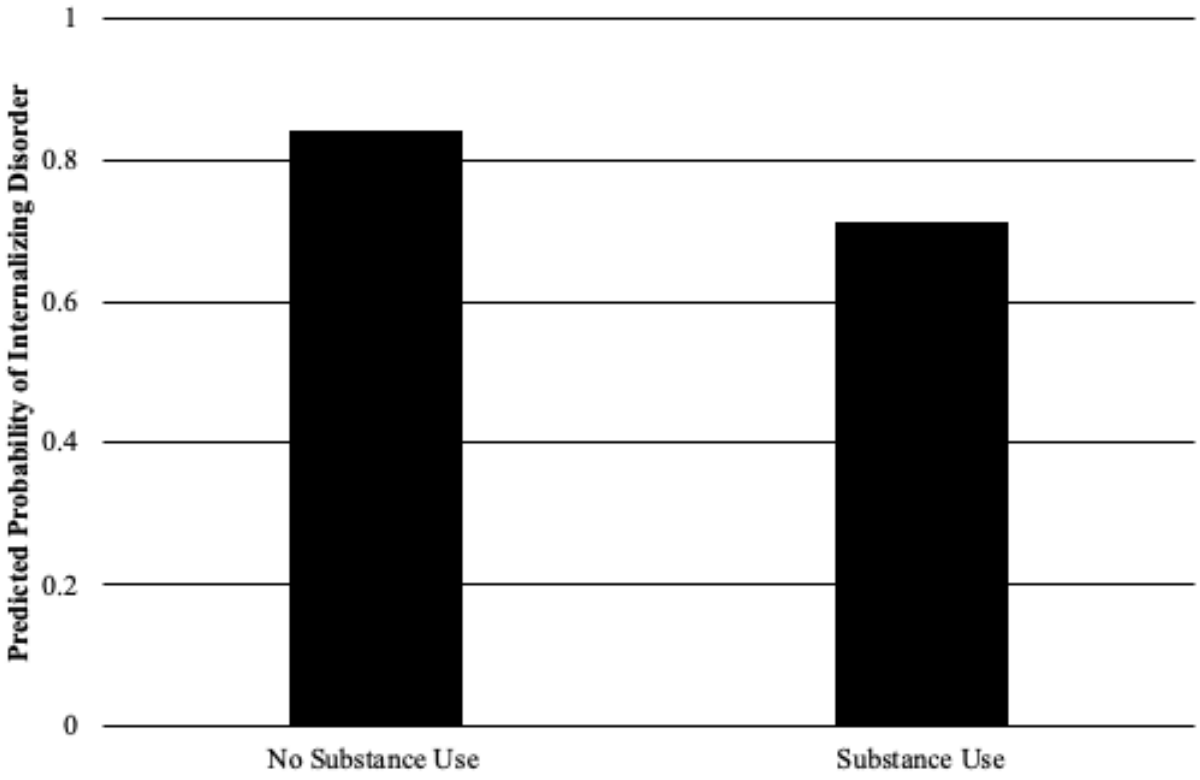


Figure 1. Model-Implied Predicted Probability of Internalizing Disorder by Substance Use

Figure 2.

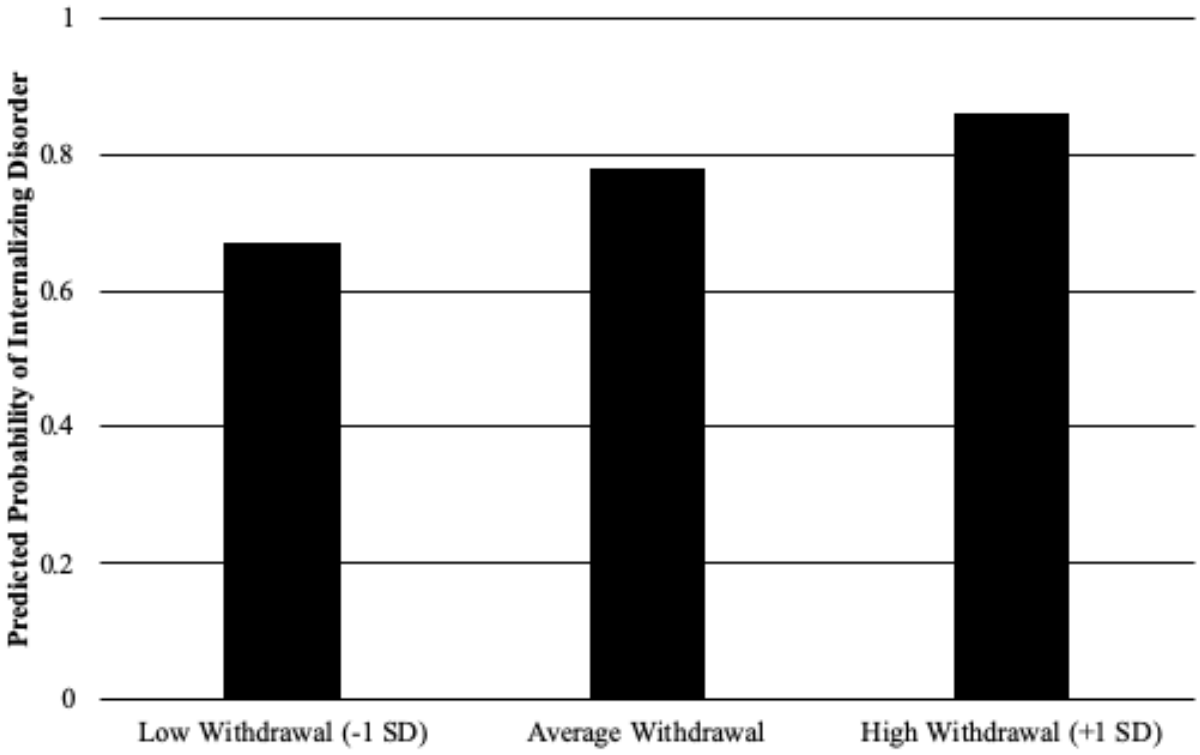


Figure 2. Model-Implied Predicted Probability of Internalizing Disorder by Withdrawal

Figure 3.

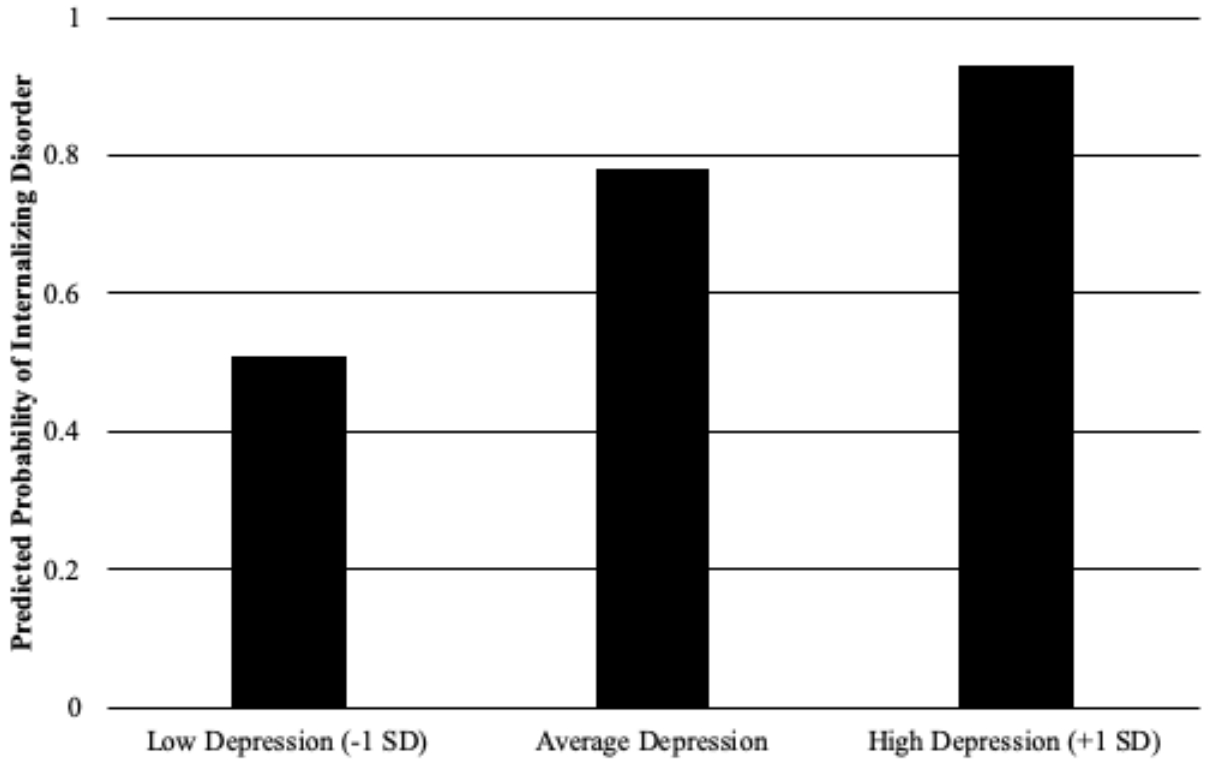


Figure 3. Model-Implied Predicted Probability of Internalizing Disorder by Depression

Figure 4.

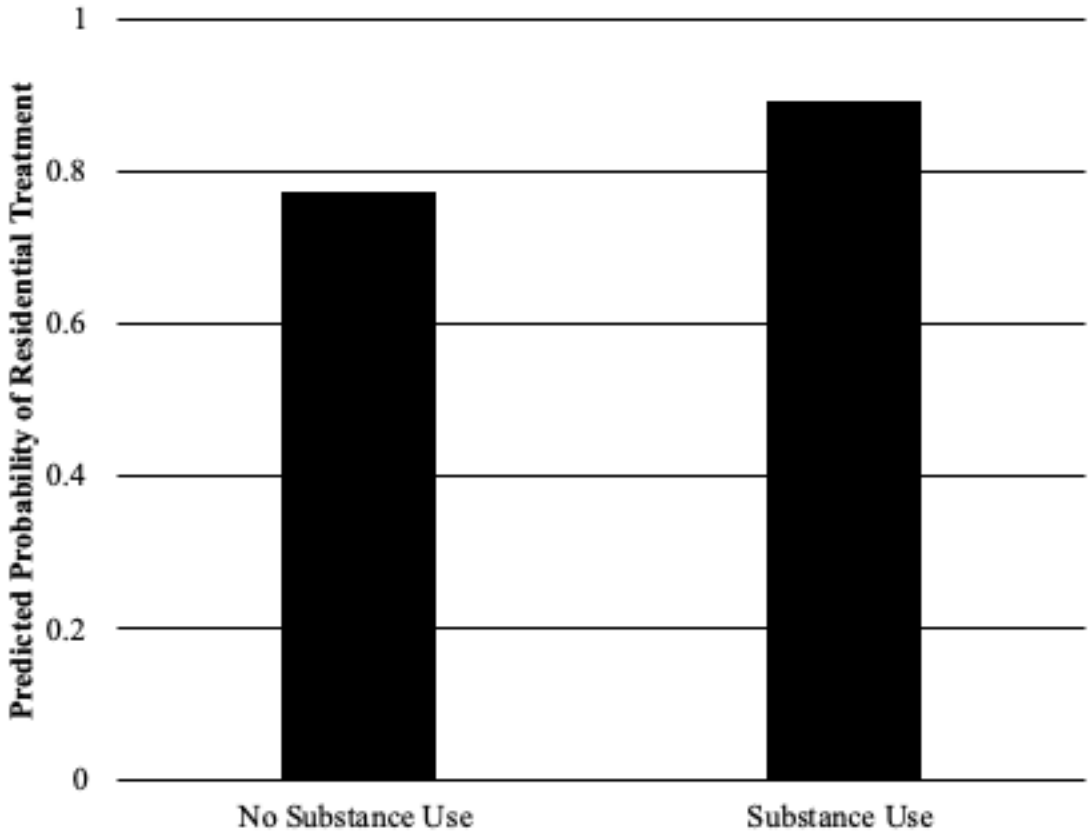


Figure 4. Model-Implied Predicted Probability of Residential Treatment by Substance Use

Figure 5.

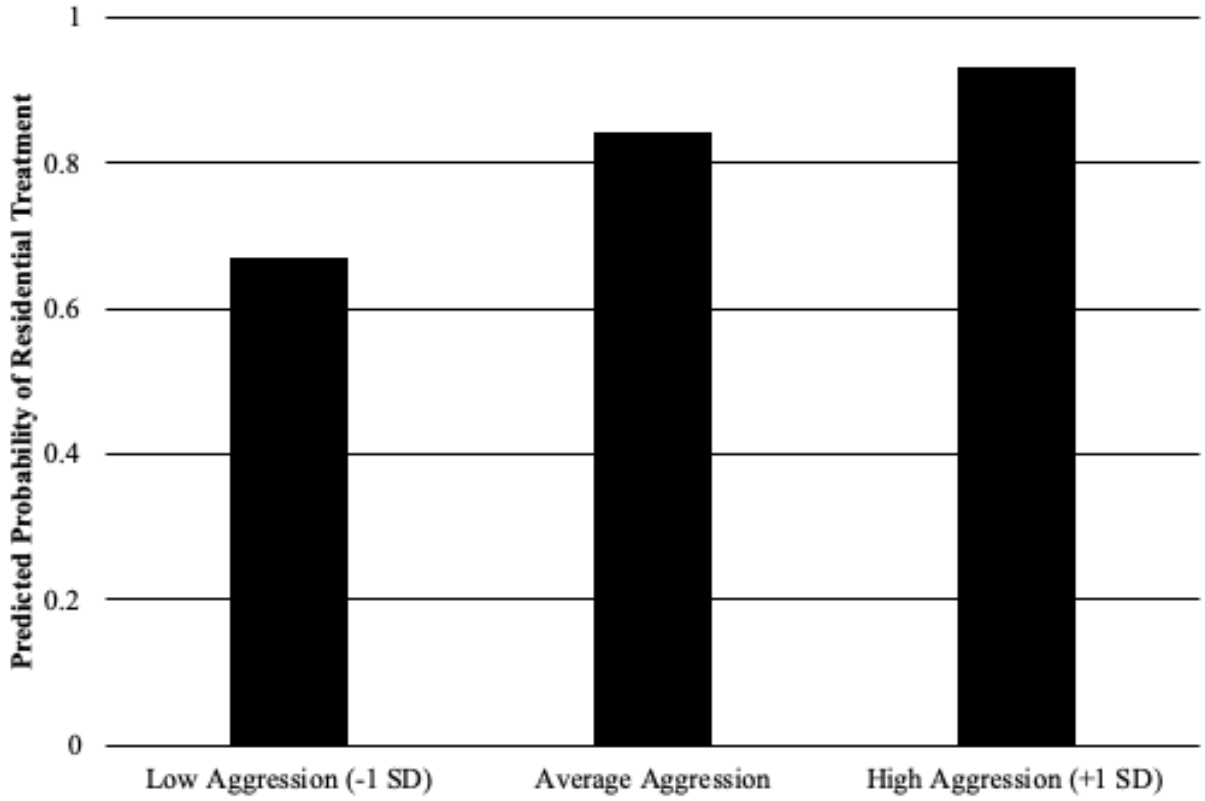
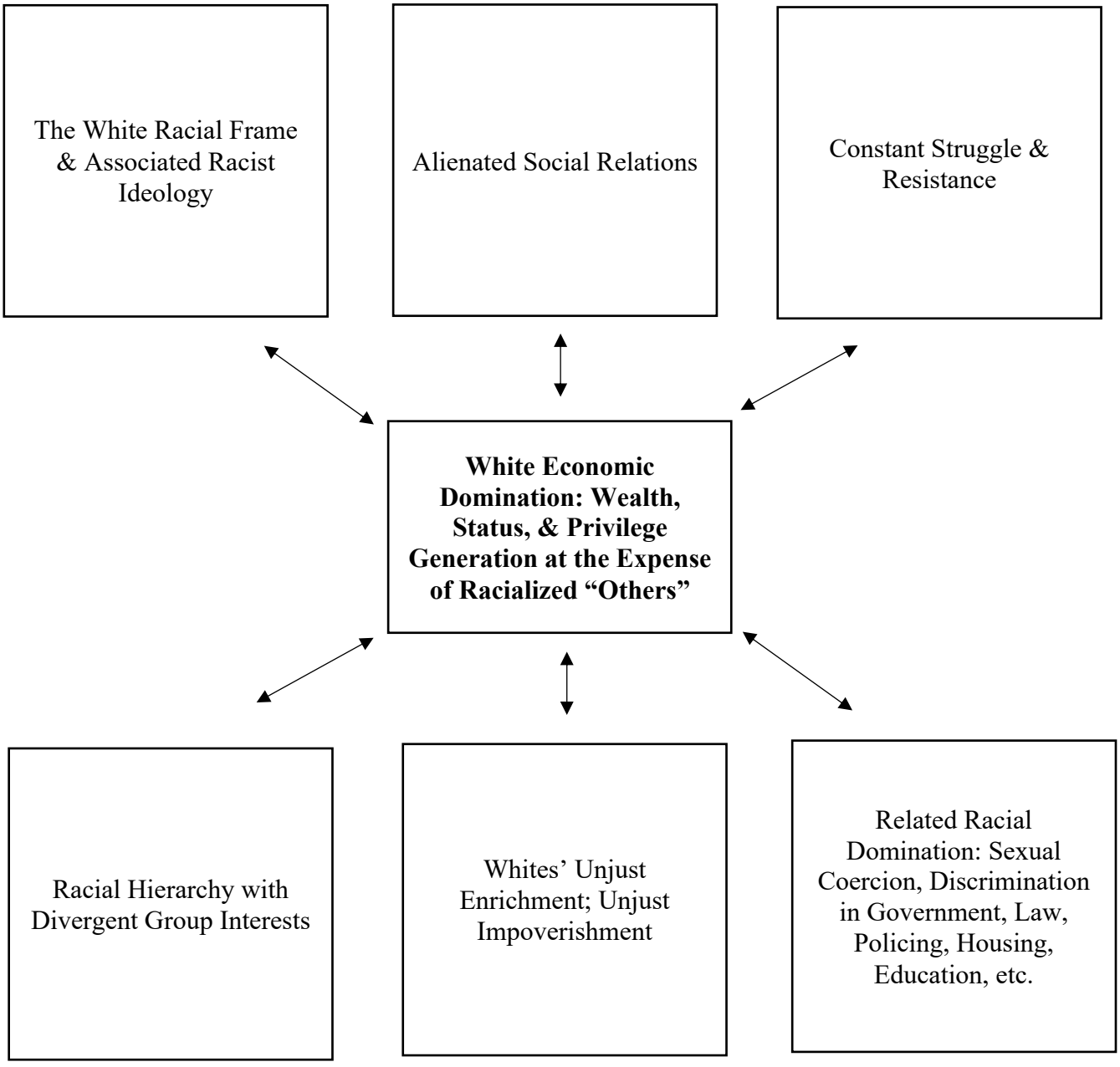


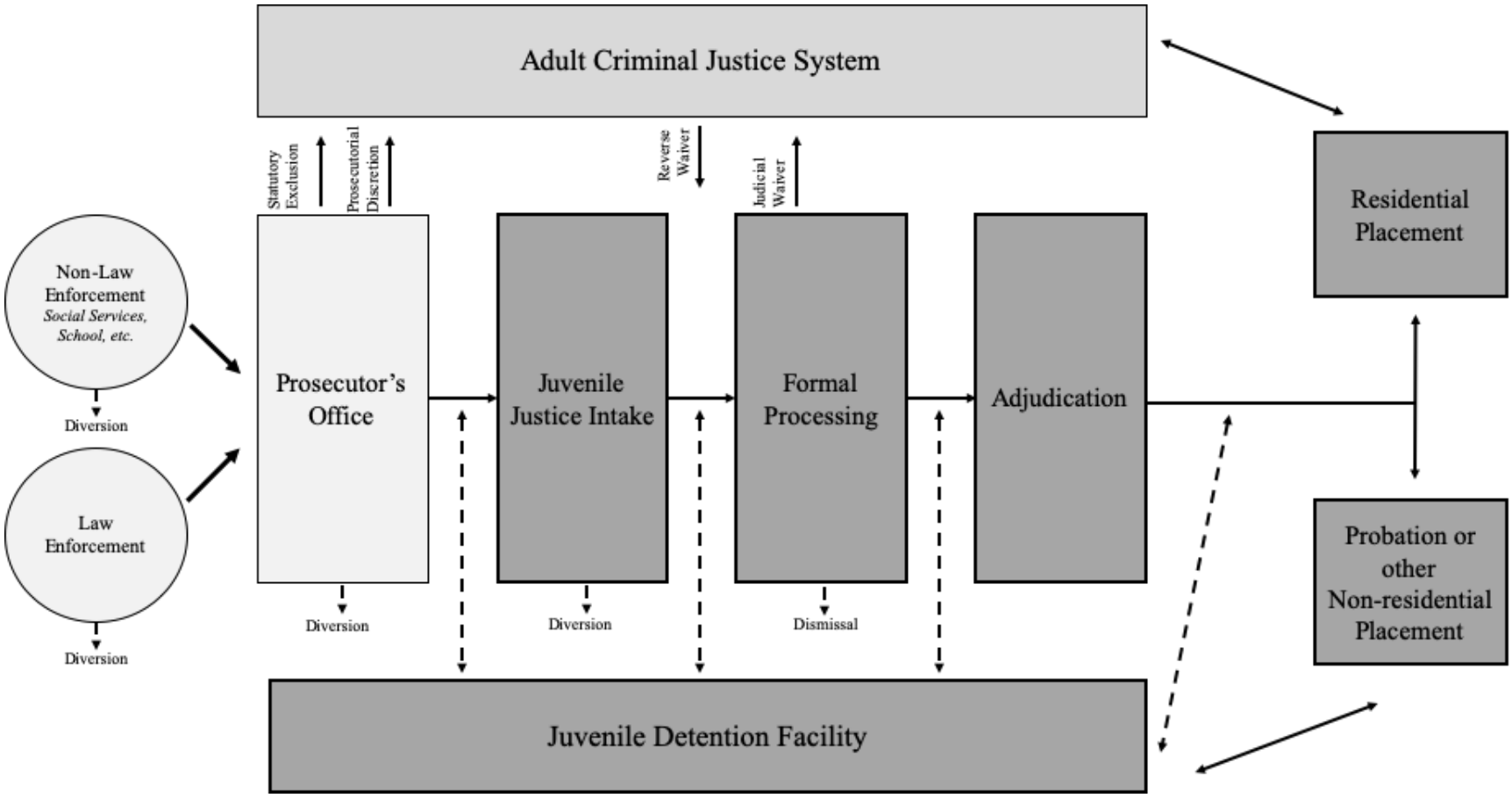
Figure 5. Model-Implied Predicted Probability of Residential Treatment by Aggression

Appendix A: Model of Systemic Racism Theory



Adapted from Feagin, 2006.

Appendix B: Juvenile Justice System



A simplified view of the case flow through the juvenile justice system. Adapted from McCord et al., 2001

Appendix C: Internalizing and Externalizing Diagnoses

Internalizing Diagnoses	Externalizing Diagnoses
Generalized Anxiety Disorder	Conduct Disorder
Separation Anxiety Disorder	Oppositional Defiant Disorder
Social Phobia	Attention Deficit Hyperactivity Disorder
Specific Phobia	
	Adjustment Disorder with Disturbance of
Bipolar I Disorder	Conduct
Bipolar II Disorder	
Major Depressive Disorder	
Posttraumatic Stress Disorder	
Reactive Attachment Disorder	
Identity Disorder	
Adjustment Disorder with Depressed Mood	
Adjustment Disorder with Anxiety	
Adjustment Disorder with Mixed Mood	
Mood Disorder Not Otherwise Specified	
Anxiety Disorder Not Otherwise Specified	

Appendix D: The ADDRESSING Framework

ADDRESSING Definitions	**Client Information**	**Clinician Information**
Age and Generational Influences		
Developmental and acquired disabilities		
Religion and Spiritual Orientation		
Ethnicity (and Race)		
Socioeconomic Status		
Sexual Orientation		
Indigenous Heritage		
National Origin & Generational Status		
Gender Identity		

Adapted from Hays, 2008