

Mental Illness, Substance Use, & Treatment:
An Examination of Gender-related Differences in Juvenile

Delinquency by
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ABSTRACT

The number of girls in the juvenile justice system is rising; they make up the fastest-growing demographic within the juvenile justice system. Yet regardless of their rising numbers, current treatment plans, screening tools, and diversion programs do not adequately address the mental health problems that girls are six times more likely to experience than boys. Internalized suffering in the form of depression, mood disorders, and anxiety are significantly more prevalent for girls than for boys. Girls are also more likely to be suicidal and at risk of sexual exploitation and abuse. Despite the need for interventions and treatment options that consider these gender-related differences, there is limited research on this subject. The present study explores whether mental illness, substance use, and treatment influence criminal activity. Further, it examines how gender influences these relationships. Through use of logistic regression and data from the 2004 National Household Survey on Drug Use and Health (NSDUH), the present study finds that mental illness, substance use, and treatment influences criminal activity. Furthermore, gender influences these relationships. The present study's findings indicate elevated risks of criminal involvement for youths using alcohol and marijuana, especially for males. Further, there are higher risk factors for becoming criminally involved for males who get into a serious fight at school or work. Therefore, those caring for youths, especially male youths, need to pay attention to any signs of alcohol and or marijuana use and intervene sooner rather than later.

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CHAPTER 1

INTRODUCTION

Feminist scholars have long argued that the field of criminology has largely ignored women's issues and their reasons for deviancy (Chesney-Lind, 1989). Many theories of delinquency have been primarily based on adult and juvenile male offenders and have not included female experiences (Chesney-Lind, 1989). Theories of delinquency stemming from renowned scholars such as Cesare Lombroso, W.I. Thomas, Sigmund Freud, and Otto Pollak exemplify that even when females are included in these fundamental theories of delinquency, they are usually based on sexist assumptions and biases (Chesney-Lind, 1989). As feminist scholars have argued, there is a need to further our theoretical understanding of these gender-related differences (Wasserman, 2010). The "sex role" and the "add women and stir" approaches to theorizing why females become delinquent cannot account for the problem in its entirety (Chesney-Lind, 1989). To understand such differences in delinquent trajectories, we must focus on each individual's unique experiences with gender in mind - everything from their upbringing and mental health risks to their coping behaviors have been proven by research to be impacted by gender (Kempker, 2016). Understanding gender-related differences and incorporating an intersectional framework will therefore allow for a better understanding when it comes to treating those who end up in the system regardless of their individualized needs (Intersection, 2017).

Gender Differences in Delinquency

The discussion of gender-related differences in criminal deviance was addressed for the first time in the mid-1800s during the birth of the abolitionist and women's

suffrage movements. This period also marked the beginning of criminological thought (Burgess-Proctor, 2006). The first and oldest of the theories is the traditional theory of crime, of which Cesare Lombroso, W.I. Thomas, Sigmund Freud, and Otto Pollak were strong proponents (Klein, 1973). It emphasizes physiological and psychological explanations for female criminality and relies heavily on women's stereotypes and sexuality (Heidensohn, 1968; Klein, 1973). Sigmund Freud theorized that women's biology made them inferior to men. As a result, he argued that women were susceptible to developing penis envy and becoming deviant due to their inferiority complex (Klein, 1973). Otto Pollak underscores Freud's inferiority claim and adds that women are the most adept at concealing their criminality because of their inferiority (Klein, 1973). Further, he argues that women are just as likely to commit crimes as men are but that they are better at getting away with it and hiding behind their femininity (Klein, 1973). By relying so heavily on stereotypes and sexuality to account for female deviance, these theories have in many ways become antiquated as they do not explain other outside factors that would provide a more comprehensive understanding of female deviancy (Heidensohn, 1968; Chesney-Lind, 1989).

Though most scholars of this time had chosen to study criminal deviance through the White male perspective, the second wave of feminism that occurred by the 1970s-1980s (at the peak of the civil rights movement) challenged these theories of criminal deviance and pushed feminism into criminological thought for the first time. No longer operating on the models of "sameness" and "difference" that informed traditional theories of crime, the second wave of feminism came with a shift in feminist perspectives (Burgess-Proctor, 2006). Liberal feminism, the first of many perspectives to fall under

the broader category of feminism, assumes gender role socialization to be the primary contributor to women's oppression (Burgess-Proctor, 2006). This perspective guided the second major theory of criminal deviance: liberation theory, often cited by Freda Adler and Rita Simon (Simon, 1975; Adler, 1975). This theory suggests that as opportunities for women in the legal sphere are enhanced, so too are opportunities in the illegal sphere (Adler, 1975).

Further, liberation theory asserts that increases in female crime are due to women and men becoming more actively competitive with one another in the working and social environments (Adler, 1975). Not all scholars, however, accepted this assumption. Simon, for example, argued that as women's frustrations in the working and social spheres were alleviated, they would become less deviant. (Simon, 1975). Like many perspectives of feminist thought, the liberal feminist perspective relied heavily on assumptions of unity in defining gender. In other words, women were assumed to experience oppression in the same ways collectively.

By the time the third wave of feminism came into effect in the 1980s-1990s, feminist criminologists had begun theorizing why some women commit crimes while others do not (Burgess-Proctor, 2006). Taking on this more individualized approach to studying the intersection between gender and crime, the third of the main theories of crime, the power-control theory, came into discussion. The power-control theory, proposed by John Hagan and colleagues in 1988, argues that youths from patriarchal families have more significant gender differences in delinquency than youths from egalitarian families (Hagan et al., 1988). Furthermore, it uses social control theory and conflict-oriented theory to explain why some females commit crimes while others do not

(Hagan et al., 1988). Unlike the previous theories, this theory does not solely rely on biology and sexuality nor political and economic opportunities to explain female deviancy. Instead, it argues that gender differences in delinquency result from varying parental dynamics and family structures (Hagan et al., 1988).

The power-control theory asserts that if women come from families where their mother is either the sole breadwinner or considered equally in control of the household as their father, they will grow up with increased odds of becoming delinquent (Hagan et al., 1988). Conversely, those raised in households where the father is in charge and the mother plays a subordinate role will be less likely to become delinquent (Hagan et al., 1988). In other words, this theory asserts that egalitarian families (those that function with both parents sharing the power over the household) will encourage daughters to act more like sons. From this equality, risky behaviors will be developed that promote deviancy. Alternatively, paternalism does not encourage daughters to act more like sons/their brother(s); instead, it would encourage daughters to act differently than sons/their brother(s) and reinforce the power imbalance demonstrated by the parents. The submissive role a daughter assumes would mirror their mothers. This theory relies heavily on social class (Hagan et al., 1988). Like the Liberation Theory, The Power-Control Theory is not without fault; it also rests on the assumptions that all men oppress all women in the exact same ways and that there is a unified female experience. The last of the main theories, and perhaps the one for which there is the most empirical support, is the feminist theory of crime derived from the accumulated theories developed after the third wave of the feminist movement (Burgess-Proctor, 2006).

This theory is backed by the multiracial feminist perspective, also known as an intersectional approach (Burgess-Proctor, 2006). This perspective acknowledges that gender differences do not happen in a vacuum (Burgess-Proctor, 2006). Rather, they are established through interlocking systems of inequality derived from socially situated differences that create a power hierarchy (Burgess-Proctor, 2006). For example, Black women represent a group of individuals who are discriminated against due to race and because of their gender (Burgess-Proctor, 2006). However, unlike the other theories, this one has engendered the least amount of criticism. Furthermore, this theory examines how gender influences all aspects of life, from social to cultural dynamics, that must be further studied (Burgess-Proctor, 2006). The feminist theory does not devalue the study of men and issues of power and dominance; however, it encourages criminologists to consider how intersecting systems of power act on all social-structural levels (Burgess-Proctor, 2006).

Gender Differences in Mental Health, Coping, & Treatment

The intersectional approach to examining theoretical concepts of delinquency allows for a more comprehensive understanding (Intersection, 2017). Although the feminist perspective has pushed researchers to learn more about the interactions between race, politics, culture, and gender, it has not been applied to mental health and its intersection with gender (Intersection, 2017). According to the National Center for Mental Health, 65-70% of children in the juvenile justice system have a diagnosable mental health condition. Also, 75% of youth in the juvenile justice system have experienced traumatic victimization (National Center for Mental Health, 2013). Additionally, 93% have reported exposure to adverse childhood experiences, including

child abuse, family and community violence, and serious illnesses (Baglivio et al., 2014). With the prevalence of the number of youths with mental illnesses in the system growing (National Center for Mental Health, 2013), researchers need to examine whether having a mental illness increases one's risk of becoming involved in criminal activity. Further, it is important that researchers examine whether gender influences the association between mental health and criminality.

Males and females respond differently when presented with negative stimuli. Perhaps this is due to the type of victimization they may have encountered and or the difference in socialization they are accustomed to growing up (Maschi et al., 2009). However, research has shown gender-related differences do exist in terms of both emotional and behavioral responses to perceived injustice (Haney-Caron et al., 2019). For example, while females look inward and focus their negative emotions and aggression on themselves in the form of depression, anxiety, self-blame, and suicidal ideologies, males tend to react to their perceived maltreatment through externalized behaviors such as acts of aggression and violence (Haney-Caron et al., 2019). When left unchecked, this buildup of negative emotion in a youth who does not have the necessary tools to deal with it, can manifest risky coping techniques that if not intervened on, can lead to risky decision making (Intersection, 2017; Maschi et al., 2009).

Gaps in the Extant Literature

Though there has been extensive research on mental illness and substance use, little is understood regarding the relationships between mental illness and crime, substance use and crime, and treatment and crime. Further, there is limited research on the influence gender and age has on these relationships. This research is critical because

without an understanding of gendered differences systems like the juvenile justice system are at risk of worsening juvenile's emotional, physical, and environmental situations. Research that examines gender differences in mental health, coping behaviors, and treatment needs is necessary.

The present study will answer two research questions. First, how do mental health issues, substance use, and treatment for those related issues affect a youth's involvement in delinquency? And second, does gender moderate the relationship between these variables and involvement in delinquency? By utilizing logistic regression models, the present study will analyze the self-reported data from the 2004 National Household Survey on Drug Use and Health (NSDUH). By doing so, a better understanding of the female experience can be gained, which can improve treatment regimens and risk assessment tools.

CHAPTER 2

LITERATURE REVIEW

Although research on juvenile delinquency and gender-related differences in delinquency and treatment options for offenders is growing, few studies have explored how mental health issues and substance use problems create gender-related differences in deviancy. Furthermore, few studies have explored how treatment options or lack thereof influence delinquency or whether gender mediates these outcomes. Due to the lack of understanding regarding how these variables interact, rehabilitation is difficult to achieve; as a result, many youths cycle in and out of the system all their lives. The purpose of the current study is to explore the self-reported 2004 NSDUH data and determine if gender-related differences in criminal activity can be identified when considering mental health issues, substance use issues, and treatment options. This section will address mental health diagnosing tools such as screening and assessment and their implications. Also, this section will discuss gender biases concerning treatment options and placement decisions (such as diversion versus secure confinement). Finally, this section will conclude with a discussion of relevant empirical work that addresses how the gaps in existing literature limit our ability to provide juveniles with the best opportunity to be rehabilitated and to grow up to be well-adjusted adults. This section aims to provide a broad understanding of empirical work relevant to this study.

Defining Terms

Mental Illness. The U.S Department of Health and Human Services (HHS) defines mental health as an emotional, social, and psychological well-being that affects how one

thinks, feels, and acts. One's mental health determines how one relates to others, makes choices, and handles stress (Department of HHS, 2021). Mental Illness is defined as "a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities" (Department of HHS, 2021). Existing literature on this subject theorizes that everything from biology to life experiences (e.g., family life, socioeconomic status, age, race, and gender) can impact mental health (Drerup et al., 2008; Teplin et al., 2002; Thompson, 2008). Mental health problems (e.g., mental health disorders) stem from internal and external factors that can negatively influence emotional state, social perspective, and psychological states of being (Thompson, 2008). Symptoms of common internalizing disorders include negative behaviors focused inward like depression, anxiety, and dissociative disorders (Thompson, 2008). Externalized disorders derive from one's external environment. Conduct disorder, oppositional defiant disorder, and antisocial behaviors exemplify this type of disorder (Thompson, 2008). Understanding how internal and external negative behaviors can lead to mental health problems is critical in developing proper treatment plans. Moreover, a better understanding of these factors could shed light on issues that may further aid theories of delinquency and better help those at risk of becoming delinquent.

Substance Use. Substance use disorders can refer to substance use or substance dependence (Mental health, 2022). Often defined as the use of psychoactive substances that increase the risk of harmful and hazardous consequences; substance use disorders affect 1.9 to 2.4 million of the individuals in the juvenile justice system (Kraut, 2020). The Substance Abuse and Mental Health Services Administration (SAMHSA) defines

substance dependence as a pattern of compulsive seeking and using of substances despite the presence of severe personal and negative consequences (SAMHSA, 2012). Although literature on this topic is limited, gender-related questions have arisen regarding substance use/abuse and its correlation to delinquency and criminality. And while early scholars examining this issue found that males were more likely to abuse substances and engage in delinquency and criminality, scholars are now finding that the gender gap is closing and both genders have comparable rates of substance abuse and dependency (Ruiz, 2009). More troubling, however, is the percentage of girls reporting substance use and dependency who are not receiving treatment, which will be discussed later in the present review (Ruiz, 2009).

Scope of the Problem

Juveniles, also known as adolescents or generally youths aged 12 to early 20s, represent a demographic identified for their developmental transition from childhood to adulthood. This developmental transition includes everything from physical appearance and social image changes to internal changes such as hormonal adjustments (Intersections, 2017). Although many adolescents navigate this transition without becoming delinquent, research suggests that this demographic is highly susceptible to rule-breaking and deviancy (Department of HHS, 2021). Moreover, there is evidence that mental health disorders are common among adolescents. According to the 2021 Office of Population Affairs, 49.5 % of adolescents have had one or more mental health disorders at some point in their lives. Further, the most common disorders identified were anxiety disorders (32%), depression (13%), attention deficit disorder (ADD) (9%), and eating disorders (3%) (Department of HHS, 2021). One study conducted by Teplin and

colleagues (Teplin et al., 2002), looked at the prevalence of psychiatric disorders among youths at the Cook County, Illinois juvenile detention center - one of the largest facilities in the nation, finding that nearly two thirds of males and nearly three quarters of females met diagnostic criteria for one or more psychiatric disorders. A later study (Drerup et al., 2008) also found a high prevalence of youth with mental illness in the system. The authors of this study used information from one state's juvenile justice system and found that 92% of males and 97% of females met the criteria for at least one mental health disorder. Additionally, they found that 32% of males and 60% of females met the criteria for three or more mental health problems. Findings such as those demonstrated by Drerup et al. (2008) and Teplin et al. (2002) suggest that mental illness is prevalent among youths – especially those in the juvenile justice system. Therefore, a critical examination of the relationship between gender and mental health on its association with crime needs to be examined.

Screening, Assessment, Referrals, & Placement Decision

Proper identification of mental health symptoms is crucial in addressing a youth's mental, emotional, and substance abuse-related problems. Screening and assessment tools are essential because they allow for the detection of potential mental health and substance use disorders. These tools also allow for the development of more personalized treatment plans (Intersection, 2017). Despite their prevalence of use in the juvenile justice system, scholars have mixed views regarding their effectiveness and accuracy (Grisso & Underwood, 2003, Intersection, 2017, & Haney-Caron et al., 2019). Although some scholars suggest that screening and assessment tools effectively gauge risk and help juvenile justice officials find the most appropriate treatment option (Grisso &

Underwood, 2003), others argue that these tools cannot estimate the complexity of the juvenile's issues and often misdiagnose them or fail to pick up on risk symptoms (Haney-Caron et al., 2019). Haney-Caron and colleagues (2019) assert that those whose job it is to refer youths to mental health programs and facilities for treatment are susceptible to human error and may fail to correctly set diagnostic thresholds in a way that adequately captures all symptoms and risks. For this reason, juveniles must be screened and assessed more than once and by different officials during their time in the juvenile justice system (Screening & Assessing, 2012). This need for further screening and assessment is especially true for females, who, according to some researchers, tend to have more internalized risk behaviors that screening may not always capture in one sitting (Benner et al., 2010; Grisso & Underwood, 2003; Haney-Caron et al., 2019; Intersection, 2017). This is also true of those believed to be struggling with substance dependency. SAMHSA (2012) recommends that those screened for mental health issues also be screened for substance dependence, especially when a juvenile is being screened upon entering the juvenile justice system. Further, they suggest that follow up screening on negative results be done six months after the negative screening result is confirmed.

Screening. According to Grisso and Underwood (2003), mental health screening is a brief process that often takes place at three different points in the system:

- At the initial interview (after referral to the juvenile court),
- After admission to a pretrial detention center to await adjudication,
- After admission to a post-adjudication community program or correctional facility.

The screening works to determine the need for a comprehensive assessment; it does not establish definitive information about a diagnosis or possible treatment needs. Usually,

this process should not take more than 30 minutes (SAMHSA, 2012). Any screening that finds evidence to suggest a crisis is occurring (e.g., suicidal ideologies), would warrant immediate assessment and intervention from juvenile justice officials. Should a crisis not be found, but assessment is still deemed necessary, the juvenile's past assessment intervention(s), current findings from screening, and family, school, and medical collateral information, will be used by officials to create an intervention plan and establish a diagnosis (SAMHSA, 2012). Some of the most readily used screening instruments are the Massachusetts Youth Screening Instrument – Version 2 (MAYSI-2) and the Diagnostic Interview Schedule for Children (Benner et al., 2010).

Assessment. Assessment, like screening, works to gather information regarding the youth's mental state. However, assessment is done only for adolescents whose initial mental health or substance dependence screening suggested a higher need for medical care or mental health treatment (Benner et al., 2010). An assessment is done to establish a more comprehensive profile of the youth, and unlike screening, must be done by a clinician as opposed to an officer (SAMHSA, 2012). Assessments also take longer to administer and involve feedback from the youth's family and educators (SAMHSA, 2012). The goal of assessment is to identify the needs of adolescents and determine if there is a need for mental health services and or follow-up care for either their mental health issues or substance use issues (Benner et al., 2010). Most youths who receive assessments have a long history of mental health problems and offending behavior (SAMHSA, 2012; Benner et al., 2010).

Referrals. Aside from the debate over the effectiveness and accuracy of screening and assessment tools, deciding where to refer adolescents with mental health disorders or

substance abuse issues is problematic. Literature on adolescents involved in the juvenile justice system suggests that referrals for mental health treatment are minimal (Ruiz, 2009; Benner et al., 2010). For example, a literature review conducted by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) in 2017 found that fewer than 4% of juveniles who had committed offenses were referred for mental health services (Intersection, 2017). Additionally, they found evidence to suggest that even among adolescents who had been diagnosed with mental health disorders through the proper channels, some did not receive treatment or referrals to be treated. For example, one national study conducted in 2005, which was included in the OJJDP review (Breda, 2003), found that even juvenile detention centers that had the ability to provide mental health services to treat the severely mentally ill juveniles did not provide such treatment. This likely has to do with insurance, which hinders treatment options for those in the system and for those not in the system whose families cannot afford to provide them with the help they need (Cauffman et al., 2005).

Another problem identified in the literature is that gender bias in referral decisions for adolescents with mental health issues is prevalent. Maschi et al. (2009) explored the gender differences in the pathways to service among adolescents using a sample of 2,482 youths. They used secondary data from a national sample of youths aged 12-17 and examined the characteristics of youths, sources of referral, service history, and contributing factors for referral decisions. Their findings revealed significant gender differences in referrals and placement decisions. Girls, for example, were found more likely to be referred by school personnel and other private practitioners. Boys, however, were more likely to be referred by the courts and probation officials. Though these results

could be influenced by the fact that girls are more likely to request help, especially for mental health issues, Maschi et al. (2009) argues that this does not negate the fact that a gender disparity exists, and boys are more likely to be referred formally and then placed in a more punitive and formal setting to rehabilitate than girls. This is problematic because existing research also indicates that formalized rehabilitation methods create higher risks for life-long recidivism (Teplin et al., 2005; Hirschfield et al., 2006; Maschi et al., 2009).

Ultimately, those who respond to stress in an externalized fashion (e.g., through violence and aggression) are more likely to be provided with the necessary tools to rehabilitate and reenter society than those who express their anger and stress inwardly (e.g., depression and anxiety) (Loeber, 1990; Vogel et al., 2012). Perhaps this is because Stakeholders more easily identify them (Hirschfield et al., 2006) or present a higher risk to the community and, therefore, must be formally rehabilitated (Teplin et al., 2005). However, with minimal research on gender-specific intervention, this explanation has yet to be established.

The Placement Decision. The decision regarding where to place a youth with mental health disorders during both the pre-adjudication period and following being adjudicated delinquent is crucial for many reasons, but the most critical reason is that most mental health conditions will worsen if left untreated (Teplin et al., 2005). Additionally, some placement options—for instance, juvenile detention centers—may exacerbate mental health conditions (Hirschfield et al., 2006). Some reasons why mental health conditions might worsen in detention centers include isolation, resentment, fear of the prison-like environment, and further victimization (Hirschfield et al., 2006). The fact

that placement can worsen conditions points to yet another reason why placement decisions matter. Not all available programs meet youth's needs. Zajac et al. (2015) found that justice-involved youth with mental health diagnoses often have multiple mental health problems. However, evidence-based treatments used in most facilities are only designed for a single disorder and therefore are often insufficient (Zajac et al., 2015). Teplin et al. (2005) evaluated the cases of 303 Chicago juvenile detainees with mental illnesses and found that only 16 percent received treatment within six months of being incarcerated. Due to the system's shortcomings, determining where to send a youth must be adequately assessed (Hirschfield et al., 2006). Additionally, it highlights the need to further evaluate the adolescents entering the system as it is essential to guarantee that the chosen placement decision can best rehabilitate them (Ruiz, 2009; Teplin et al., 2005; Hirschfield et al., 2006). Research also has found that gender is a predictive factor in placement decisions (Maschi et al., 2009; Espinosa et al., 2013). Espinosa and colleagues (2013) examined the influence of mental health needs, trauma, and gender on the risk of out-of-home placement for juvenile offenders. Using a sample of youths referred to three urban juvenile probation departments in Texas, they found that males were more likely than females to be assigned more restrictive placements. They did not find that youth's mental health needs significantly affected placement decisions; however, they did find that age at the time of offense and probation violations did affect these decisions.

Kempker et al. (2016), who used Espinosa et al. (2013)'s data, further evaluated this issue by examining whether youth's psychopathology and substance use affected placement decisions differently for female and male youth. They found that females were more likely than males to be given minimal supervision despite their higher frequency of

presenting mental health issues, which is especially problematic when females mental health issues often come with suicidal ideology and depression. They also found that offense severity played a more minor role in placement decisions, therefore suggesting that placement was not contingent on the seriousness of the offense. That said, a juvenile's criminal history did significantly affect placement decisions; those who had committed crimes in the past were more likely to be under higher levels of supervision.

Gender Differences in Mental Illness & Crime

Now that this review has defined important terms, addressed the prevalence of the issue, and discussed assessment and screening methods, along with the importance of referrals and placement decisions, the next section will explore existing literature addressing gender differences in the relationships between delinquency and mental health issues. The presence of mental disorders and illnesses amongst juveniles does not appear to be gendered (Hirschfield et al., 2006). In other words, having a mental illness or disorder is common within the juvenile population regardless of gender. The type of mental illness or disorder however appears to be gendered (Thompson, 2008). For example, research indicates that women are more likely to have depression and anxiety related disorders, while men have higher rates of substance abuse and antisocial disorders (Thompson, 2008).

Available research on mental health suggests that those who are depressed are more likely to self-medicate with drugs or alcohol “to get away from emotional pain” (Thompson, 2008). Juveniles are especially at risk of deviance for this reason. Their age and lack of autonomy make their demographic the most likely to turn to illegal forms of coping. Gender differences in types of criminal activity are less understood by

researchers. Mental health research would suggest that juvenile males and females have different risk factors, forms of trauma, and specific needs, leading them to different offending pathways to delinquency (Drerup et al., 2008; Thompson, 2008; Haney-Caron et al., 2019). The results of these studies have led some researchers to conclude that a relationship between gender and mental health exists and that their interaction can explain specific types of criminality (Thompson, 2008).

Gender-Specific Risk Factors. Empirical research suggests that males and females have unique risk factors that make them more susceptible to certain types of crime and delinquency than others (Vogel et al., 2012; Hirschfield et al., 2006; Intersection, 2017). Mental health research attest some of these differences to psychological disorders (Vogel et al., 2012). Psychological disorders can be classified into two categories: internalizing and externalizing behavioral disorders (Vogel et al., 2012). Internalized disorders are often exhibited in individuals with high levels of anxiety and depression. Additionally, those with internalized disorders may have suicidal ideologies and eating disorders (Vogel et al., 2012). Externalized disorders, unlike internalized disorders, are commonly associated with aggression/ violence issues (Loeber, 1990). Externalized disorders are also easier to identify than internalized ones because they are outwardly expressed (e.g., bullying or harassment) (Hirschfield, 2006; Intersection, 2017). Attention deficit disorder (ADD) is also commonly associated as an externalized disorder. And while research indicates that these disorders can be present in both genders, it is more common for females to have internalized behavioral disorders (Vogel et al., 2012) and males to have externalized behavioral disorders (Intersection, 2017). And each type of disorder comes with a unique set of risks.

Youths with externalized behavioral disorders are more likely to report a history of serious delinquency, making them more likely to be at risk of receiving formal sanctions by Stakeholders (Haney-Caron et al., 2019). Youths with a record of conduct problems such as violence and aggression issues (externalized behavioral disorders) are also more likely to be formally processed in the system. In addition, they are more likely to receive formal rehabilitation and time in secure placement facilities (Haney-Caron et al., 2019). This is not to say that those with internalized disorders do not enter secure placement. Haney-Caron et al. (2019) studied secondary data from a randomized controlled trial that sampled court-involved, non-incarcerated adolescents and their parents to explore the relationship between offense severity and internalizing and externalizing symptoms. Their analysis revealed that lower severity levels for delinquency were not associated with internalizing behavioral disorders. Instead, internalizing symptoms were equally high across all adolescents committing minor, moderate, and severe delinquent acts. In other words, though externalizing disorders are easier to screen, assess, and diagnose; and may appear to be more critical for the community's safety to treat, internalized disorders are just as serious. Further, Haney-Caron et al. (2019) cautioned that not addressing those with internalized disorders the way externalized disorders could lead to just as serious a threat to the community. Benner and colleagues (2010), underscore this argument with their study.

Benner et al. (2010) aimed to confirm sex-related differences in mental health symptoms for juveniles using the MYSI-2 screening tool. Like Haney-Caron et al. (2019), they also sought to examine sex-related differences in the frequency and nature of juvenile court contacts. Like previous research on the subject, their findings revealed that

girls were less likely to offend compared to boys. Furthermore, they found that girls with prior histories of maltreatment (e.g., child abuse or sexual assault) are more likely to offend than girls without such narratives, thereby suggesting that childhood victimization and trauma are added risk factors in becoming delinquent and committing crimes.

Childhood Victimization & Trauma. Hurt people, hurt people; many juvenile offenders have been victims of a crime. Research indicates that abuse (sexual, emotional, or physical) is the most significant underlying cause of risky behaviors that leads to delinquency. This is especially true for young girls (Prescott, 1997). Extensive empirical findings reveal that on average female offenders are more likely to be exposed to victimization than male offenders (Bender, 2010). Moreover, recent reports indicate that females experience more extreme and repeat victimization than their male counterparts, especially pertaining to sexually demeaning assaults which increases their stress response, which increases their likelihood of becoming deviant (Bender, 2010).

Victimization is one of the leading causes of substance abuse which, unfortunately, is one of the leading causes of delinquency (Miller, 2010). The victim-blaming culture makes it difficult for survivors to come forward and receive the help they need. This culture is especially true for instances of sexual assault or rape. Many remain silent despite movements such as “me too,” which encouraged victims to come forward. Reform movements and new policies are not encouraging victims to come forward as intended (Clay-Warner & Burt, 2005). Perhaps this is because some victims will not even see themselves as victims due to the nature of their victimization (e.g., being raped by a father, other family members, or significant other) (Spohn & Horney, 1996). No matter the reason, individuals who have been victimized often do not get

access to the resources they need and instead rely on other forms of coping that lead to delinquency (Bender, 2010).

Family Life & Schooling. Difficulty at home or in school can increase the risk of juveniles becoming delinquent (Prescott, 1997; Thompson, 2008; Miller, 2010).

Stains at home such as parental rejection, erratic and excessive parental punishment/abuse, and poor disciplinary techniques are among the strongest predictors of crime (Agnew, 2006). Further, strains at school such as poor grades, poor relations with teachers, and perceived unfair treatment by peers or school officials, also act as a strain that encourages deviance (Agnew, 2006). Sometimes, youths will even opt out of going to school to avoid such stressors. Or should their home environment not feel safe to them, some will choose to cope by running away or relying on peers who might act as a stand in for the family - which contributes to gang involvement (Miller, 2010).

Gender Differences in Substance Use & Crime

The next section of this review will explore existing empirical research on mental health and substance use. Further, it will discuss how substance use and gender interact to explain differences in criminality. Unfortunately, similar to the gap in research regarding the interplay between gender and mental health, there is also a gap in research regarding gender differences in the relationship between mental health problems and substance abuse. Therefore, more research must explain how these factors overlap to create disparities in offending and rehabilitation efforts (Vaughn et al., 2007). According to researchers, substance abuse is one of the most predominant coping mechanisms (Bender et al., 2010) and often leads to higher incarceration and recidivism rates. One study by Drerup et al., found that 29% of males and 55% of females exhibited substance

dependency (Drerup et al., 2008). They also found that 46% of males and 59% of females exhibited symptoms of anxiety and depression (Drerup et al., 2008). From this, they concluded that not only are juveniles turning to drugs and alcohol as a means of self-medicating (or coping) with their life stressors, but females are especially likely to turn to such coping techniques.

As Agnew (2006), explains, adolescents are more likely than any other demographic age range to cope in a criminal manner. They not only have poorer problem-solving and social skills, but they also lack key coping resources like power and money that can better enable them to escape negative treatment or get others to end their negative treatment for them (for example, by hiring a lawyer). Unlike other demographics, adolescents also often lack the power to leave their negative environment. One study conducted by Prescott (1997) on adolescent girls with co-occurring disorders in the juvenile justice system found that one in four girls wanted to leave home because of violence and 58 percent of abused girls said they had wanted to leave home because of violence. Substance use and abuse or dependence also looks different for this demographic than it does for others (Ruiz, 2009). For example, compared to adults, adolescents' access to drugs and alcohol is limited and often contingent on the help of those who are older and or have connections to dealers willing to sell to them (Ruiz, 2009). Despite this obstacle, youths turning to substance use to cope with negative emotions and at times negative environments, make them more susceptible to abuse (Agnew, 2006). Substance use has been found to increase the risk of juvenile delinquency in many research studies (Prescott, 1997; Hirschfield et al., 2006). Even when not considering how mental health mediates this relationship, those who use illegal

substances recreationally are statistically at a higher risk of becoming delinquent and interacting with law enforcement (Prescott, 1997). As Hirschfield et al., 2006 explain, those with mental health disorders might present more incoherently around officers when they use drugs and alcohol, which could increase their likelihood of being arrested over those without those co-occurring disorders (meaning having more than one disorder at a time).

Gender Differences in Treatment Options & Crime

The types of treatment for mental health-related issues and substance-related issues broadly vary by individual and jurisdiction. Yet, some researchers have found patterns in treatment options provided to males versus those provided to females. For example, Maschi et al. (2009) found that boys are more likely to be treated with drug therapy than girls. Specifically, they found that boys are more likely to be symptomatic of attention deficit disorder (ADD) and require drug-related intervention. Conversely, they found that girls were more likely to be treated with talk therapy for mental health-related issues. Their findings suggest that girls face higher rates of depression, anxiety, and family-related traumas and therefore require this type of intervention over others. Despite girls being more likely to receive talk therapy than boys, reports indicate that self-medicating is the most common pathway to delinquency found in offending female youths (Bender, 2010). Gender-specific interventions, though necessary, must therefore be better advised by research.

Gender differences are apparent regarding mental health concerns and mental illnesses. Therefore, the patterns Maschi et al. (2009) found for treatment options make sense. Treatment providers are not at fault for prescribing ADD medication over talk

therapy to someone suffering from ADD-related symptoms. However, more research is necessary to determine what practices practitioners should follow when deciding who gets what treatment. Gender-specific intervention can be advisable if diagnosing is not contingent on gender alone (Ruiz, 2009). In other words, just because females commit less crime than males, and are less likely to present externalized behavior issues (e.g., conduct disorder), does not mean that all females should be screened, assessed, and treated with lesser concern (Ruiz, 2009).

Similarly, not all males should be prescribed medication to deal with their behavioral issues (Screening & Assessment, 2012). When referral and treatment methods become overly contingent on gender instead of individualized needs, adolescents will likely turn to illegal coping mechanisms (Cauffman et al., 2005), which increases their chances of being incarcerated (Cauffman et al., 2005). Further research is, therefore, critical when it comes to determining whether screening and assessment tools currently used are capable of gauging risk levels for all youths, not just placing the higher risk on youths exhibiting externalized behavioral issues (Ruiz, 2009; Screening & Assessment, 2012). Proper assessment of risk is especially important for insurance-related purposes (Drerup et al., 2008). Should individuals not be accurately diagnosed, insurance companies may not pay for the necessary treatment, and youths could go without care because their families cannot afford it (Drerup et al., 2008).

Limitations & Gaps in Extant Literature

Though complicated, research indicates that there is a relationship between gender, depression, substance use, and criminal activity (Loeber, 1990; Hirschfield, 2006; Thompson, 2008; Drerup et al., 2008; Ruiz, 2009; Benner et al., 2010; Haney- Caron et

al., 2019). Furthermore, existing research suggests that screening and assessment tools are critical when determining the type of intervention, a youth needs (Ruiz, 2009; Screening & Assessment, 2012). Therefore, youths will not be given the proper assistance to rehabilitate if such tools do not consider gender-related differences and mental health risks when influenced by gender (Ruiz, 2009). The literature in this area indicates that risk factors for becoming delinquent affect males and females differently, especially with mental health factors considered (Thompson, 2008).

Furthermore, extant literature finds that coping techniques such as drug and alcohol use vary by gender (Drerup et al., 2008); therefore, treatment and its effect on crime should be investigated, especially regarding gender-related differences. Research on the association between gender-related differences and treatment and policy effectiveness is also limited (Thompson, 2008). Similarly, research on the relationship between mental health and crime when influenced by gender is limited (Thompson, 2008). With all these gaps in the literature, further investigation is critical, especially if we are ever to understand the effect of gender, mental health, and substance use on treatment outcomes and criminality.

Outside of the literature gaps found in the present review, the methodology used by most researchers in this area is another limitation that needs discussion. For example, most mental health research relies on self-reported measures, which is problematic. The present review finds evidence that self-reported data, though rich in substance, can present drawbacks to researchers for two reasons. The first is that the reliability and validity of responses are difficult parameters to control. This parameter is especially an issue when dealing with samples that involve subjects with mental health issues. The

second is that those with mental health issues are more likely to rely on coping mechanisms such as drugs and alcohol, both known for creating recall and memory-related issues (Drerup et al., 2008).

Another limitation when studying this issue concerns the lack of available data. Researchers are often unable to access large samples of offending mentally ill juveniles. Many studies have attempted to investigate the relationship between mental health and delinquency but have generalizability issues due to small sample sizes. Due to low reporting rates, and lack of publicly available information regarding youth's mental health issues, researchers have been unable to access large enough sample sizes to investigate this issue properly. Therefore, many researchers have turned to available secondary datasets (Thompson, 2008). Secondary datasets are useful because they allow researchers to access samples they may not have otherwise. They also are cost-effective and can be more time-efficient to use. The present study will utilize secondary data for these reasons.

CHAPTER 3

METHODS

This analysis examines whether there are gender differences in self-reported mental illness and substance abuse. Further, it examines whether self-reported mental illness, substance use, and treatment affect self-reported criminal activity and whether these factors vary by gender. The data for this study comes from the 2004 National Survey on Drug Use and Health (NSDUH, U.S. Department of Health & Human Services, 2006). These data were originally collected to measure the prevalence of drug use in the United States. The primary purpose of the data was to measure the prevalence and correlates of drug use in the United States. Respondents were provided with a \$30 incentive to partake in the survey. And stratified random sampling was used to determine who would be eligible to partake in the study. This sample was drawn from a population of noninstitutionalized United States civilians aged 12 or older at the time of the survey. Those in the age range of 12-17 were considered youths. The response rate for the survey was high (91%). Computer-assisted interviewing (CAI) (interviews conducted by computers and not another person in the room) allowed respondents to feel more secure about honestly speaking on personal issues. Also, due to the lack of interviewers present during questioning, respondents could feel more inclined to answer honestly. Demographic information on respondents was also collected, along with self-reports of depression, criminality, and illegal drug use.

Key Dependent Variables

The 2004 NSDUH asked respondents many questions regarding their history of criminality. This study examined three offense categories Theft (\$50.00->), Sold drugs,

and Assault. Additionally, the present study examined an overall indicator of criminal activity (Any crime) to address the research questions regarding the effects of mental illness, substance use, and treatment on involvement in crime (see Table 1 for the frequencies of the key-dependent variables). This study also attempted to control for temporal ordering-related issues and the accuracy of responses by utilizing dependent variables that occurred within the past year or occurred within the youth's lifetime. For example, when asking youths if they had committed offenses under the categories of theft, assault, and any crime, youths were to reply "yes" or "no," depending on whether it applied to them in general (in their lifetime). However, in the instance of selling drugs, unlike the other dependent variables, youths were asked if it applied to them within the past year (not lifetime). Also, substance treatment and mental health treatment also have differences in timeframe that should be noted. The dependent variable substance treatment is a lifetime measure whereas the mental health treatment variable is within the past 12 months. This distinction is important because memory can be affected when it comes to drug use and mental strain. Speaking to short-term occurrence (recent memories) could allow for more accurate responses (Deitzer et al., 2019). Alternatively, using official records to verify self-reported responses could be beneficial.

Key Independent & Control Variables

In addition to questions regarding crime, the NSDUH asked respondents many questions related to mental health (e.g., Major Depressive Episode – Lifetime; "depression"), substance use (e.g., drug use, marijuana use, alcohol use - in the past year), treatment for mental illness (in the past year) and substance abuse (lifetime), and history of violence (e.g., fighting at school). These variables, along with gender

(female/male), comprise the primary independent variables of interest. The analysis also includes several control variables: whether the respondent's mother/father lives at home, race, education status, and health insurance. See Table 1 for the frequency distributions.

Analytic Strategy

Binary logistic regression models are utilized for this study. The first step in the analysis was to examine the effects of gender, mental illness (depression), substance use, and treatment on involvement in various types of criminality (Any crime, Assault, Theft, and Sold drugs) using the entire sample. Next, the data were partitioned by gender, and separate linear probability models were estimated for males and females; the Wald Chi-Square tests then were used to assess whether the regression coefficients for the independent variables differed significantly across gender (Male/Female). Interaction variables were also created and then used for further analysis. For example, both treatments for mental health and substance use were interacted with the independent variable "gender" (1=Male; 0=Female) to create the interaction terms (Substance treatment * Gender) and (Mental health treatment * Gender). Also, an interaction term for the independent variables: depression and drug use (Depressed * Drug use), was generated. This interaction allowed for a better understanding of depression and drug use's effect on crime when mediated by gender. Finally, another interaction term, "depressed female," was created to see if depressed female respondents were more likely to commit crimes. All of which will allow for a more thorough examination of how gender, mental health, and substance use interact in their relationship to criminality in the juvenile sample.

CHAPTER 4

RESULTS

Descriptive Statistics

Participants. The sample for this study is made up of all youths between the ages of 12 and 17. The total number of youths in the sample is 18,294. Of these respondents, 9,330 (51%) are male and 8,964 (49%) are female. The majority of the sample of youths are White (63.9%), but Hispanics make up the second-largest demographic in the youth sample (14.33%), followed by African Americans, who comprise 13.5% of the sample; the remainder of the youth are categorized as “other” (8.28%). It should also be noted that the majority of the youths in the sample attend school (98%). And while most youth’s mothers lived at home (90%), youth’s fathers were less likely to be reported as living at home (72%). Furthermore, 24% of the youths in the sample are covered by health insurance. Descriptive statistics are presented in Table 1. Missing data in the sample was handled through listwise deletion. If any individual had a missing regressor, that person would be dropped from the regression analysis. The statistical software program Stata 17.0 was used to analyze the data.

Dependent Variables. Dependent variables in the present study previously discussed were whether the respondent engaged in “any crime,” “theft” (anything stolen within a \$50.00 or more value), “assault”, or “sold drugs” (the distribution of any illicit substances for monetary value within the past year). About 13% of the sample reported having committed some type of crime (any crime) in the past. The most common crime type was assault, at just over 8%. The second most common was theft (4%), followed by selling drugs (3%) (see Table 1).

Independent Variables. Independent variables in the present study, as exemplified in Table 1, are “gender”, “depression” (lifetime), “substance treatment” (lifetime), “mental health treatment” (in the past year), “serious fight”, “drug use” (in the past year), “marijuana use” (in the past year), and “alcohol use” (in the past year). Of the 18,294 youths in the sample, 2,619 (14.5%) reported having had a major depressive episode in their lifetime (depression). Ten percent of the youths in the sample reported having received mental health treatment, while only 2.5% reported receiving substance abuse treatment. Of the youths in the sample, only 4% reported using drugs (other than marijuana), while 14.8% reported using marijuana, and 34.5% reported drinking alcohol. Furthermore, 23.5 % of the youths in the sample reported being involved in a serious fight at work or school.

Logistic Regression Models Explaining Crimes and Delinquency

The present study aimed to determine whether there are gender differences in self-reported mental illness and substance abuse. Further, it investigated whether self-reported mental illness, substance use, and treatment affect self-reported criminal activity and whether these factors vary by gender. The resulting models can be found in Table 2.

As indicated in Table 2, females were significantly less likely than males to engage in all types of criminal activity, as demonstrated by the four models (Odds Ratio (OR) between .415 and .528). Similarly, those who reported depression were more likely to commit all types of crime. The association between depression and the outcome is significant for three of the four models (any crime, assault, and theft) (OR between 1.440 and 1.771). Mental illness was further examined through the interaction variable

“Depressed * Female” and “Depressed * Drug use.” Both interaction terms were non-significant for all outcomes.

The effects of the independent variables used to measure the influence of substance use on criminality— “drug use,” “marijuana use,” and “alcohol use”—can also be found in the results shown in Table 2. Those who reported using drugs were more likely than those who did not report using drugs to report all types of criminality (OR between 1.211 and 2.972), but the relationship between using drugs and theft was not statistically significant. The results in Table 2 similarly reveal that those who reported using marijuana were significantly more likely than those who did not report using marijuana to indicate that they had engaged in all types of crime (OR between 1.895 and 13.838). The same pattern of results was found for alcohol use. Those who said that they had used alcohol were significantly more likely than those who said they had not to report having been involved in all types of crime (OR between 1.621 and 3.935).

Table 2 also presents the relationships between treatment for substance abuse and mental health issues and crime. These variables when included in the models indicate whether treatment affects one’s criminality. Results indicate that those who had received substance treatment were more likely than those who had not received treatment to be involved in all types of crime (OR between 1.112 and 2.572). These findings are significant for Models 3 (Theft) and 4 (Sold Drugs), but not for Models 1 (Any Crime) and 2 (Assault). Those who reported mental health treatment also were more likely than those who did not report this type of treatment to be involved in all types of crime across each of the four models (OR between 1.025 and 1.737). Statistical significance is found in Models 1-3 (OR between 1.737 and 1.620).

Gender (“Female” *see* Table 1) was also interacted with these key independent treatment variables to determine how gender mediates the relationship between treatment and crime (*see* Table 2. “Substance treatment * Female” and “Mental health treatment * Female”). The association between Substance treatment * Female and Assault and Substance treatment * Female and Theft was weaker for females than for males (OR=.961; OR=.817). Conversely, the association between Substance treatment* Female and Any crime and Substance treatment* Female and Sold drugs was stronger for females than for males (OR=1.592; OR=1.190). Significance was found only in the association between Substance treatment * Female and Any crime (OR=1.592). The association between Mental health treatment * Female showed similar patterns as Substance treatment* Female, however significance was not found in any of the Models.

“Serious fight”, though not directly a control variable nor a key independent variable that falls under the explicit category of mental health, substance use, or treatment, was used to determine how externalized behaviors influenced criminality. With depression being an internalized behavior that was to be used in the present analysis, the use of an externalized behavior was necessary to fully examine the importance of mental health and gender along with its impact on crime. As indicated in Table 2, those who reported having been involved in a serious fight were more likely than those who indicated that they had not been in a serious fight to also report having engaged in each of the four types of criminality. These results were significant (OR between 2.778 and 5.761). Outside of key independent variables, were control variables in the Models: “School”, “Mother in home”, “Father in home”, “health insurance” and race (African American, Hispanic, and Other; White was used as the comparison

variable). As shown in Table 2, those who reported that they were enrolled in school were significantly less likely to report having been involved in all types of crime (OR between 0.501 and 0.665). Although those who reported that their mother was living at home were also less likely to report having been involved in all types of crime, the effects were not statistically significant. By contrast, those who reported their father was living at home were significantly less likely to report having been involved in any crime, theft, and selling drugs (OR =.839; OR=.809; OR =.758). Findings from the analysis in Table 2, also indicate that those with health insurance were less likely to be involved in selling drugs (OR =.714).

It should also be noted that African American (“Black” *see* Table 1) respondents were significantly more likely than White respondents to report all types of crime (OR between 1.292 and 2.228). Hispanic respondents were also significantly more likely than Whites to report having engaged in crimes of theft (OR = 1.258). Lastly, those who fell under the race category of “Other,” were significantly more likely than White respondents to report having been involved in any crime and theft (OR =1.24; OR=1.568).

Comparison of Coefficients Between Gender-specific Models

The second part of the present study’s analysis examines whether the effects of self-reported mental illness, substance use, and treatment on self-reported criminal activity vary by gender. The key independent variables “Depressed,” “Drug use,” “Depressed – Drug use,” “Marijuana use,” “Alcohol use,” “Substance treatment,” and “Mental health treatment” were used to investigate this question. As indicated in Table 3, the data were partitioned by gender, and separate linear probability models were

estimated for males and females; the Wald Chi-Square tests were used to assess whether the regression coefficients for the independent variables differed significantly by gender. The dependent variables for this part of the analysis remained the same (Model 1 = Any crime, Model 2 = Assault, Model 3 = Theft, and Model 4 = Sold drugs).

Overall findings from the gender-specific Models indicated that most coefficients were not significantly different between genders. Further, results were largely consistent with those found in the logistic models thereby verifying its accuracy. The interaction term “Depressed * Drug use” and its association to the dependent variables was also not found to be significantly different between genders. Significance was found however when examining the association between alcohol use and crime, marijuana use and crime, and serious fighting and crime. Results (*see* Table 3) indicate that the effect of alcohol use on all crime is significantly stronger for males than for females. Further, the effect of using marijuana and any crime is significantly stronger for males than for females. For males, marijuana use is associated with a 23.6 percentage point higher risk for any crime. Also, the association between serious fight and any crime is also significantly stronger for males than for females. For males, serious fighting at school or work is associated with a 19.4 percentage point higher risk for involvement in any crime. However, it is only associated with a 16.5 percentage point higher risk for involvement in any crime for females.

CHAPTER 5

DISCUSSION

The present study focused on answering two research questions. The first was, do mental illness, substance use, and treatment influence criminal activity? The second was how does gender influence these relationships? The present study's findings suggest that those who report having a mental illness (presenting behavioral issues both externally- "Serious fight" and or internally – "Major Depressive Episode") are more likely to engage in criminal activity than those who do not.

The present study also found that gender affects the likelihood of criminal activity. Findings suggest that males are significantly more likely than females to engage in all types of crime. Further, results from the gender-specific models indicate that the association between "Serious fight" and "Any crime" is significantly stronger for males. This finding fits with existing literature that shows males are more likely than females to externalize their mental health issues through violence (Vogel et al., 2012; Hirschfield et al., 2006; Intersection, 2017).

This study also found that those who used substances (e.g., alcohol and marijuana) were more likely to engage in criminal activity than those who did not. This finding is consistent with existing research findings (Benner, 2010). Substance use is one of the most common forms of coping amongst youths. Due to their age, such coping behaviors are often illegal and elevate their risk of criminality (Benner, 2010).

The present study found that males are more likely to engage in substance use and act criminally than females. This finding, however, is not supported by existing research. Instead, existing research suggests females are more likely to cope with mental health

issues through substance use (e.g., alcohol and marijuana) and act criminally (Hirschfield et al., 2006). A better way to determine whether gender differences are present when investigating risk factors such as mental health, substance use, and treatment would be to study delinquency instead of criminal acts. Alternatively, instead of using the variable “Major depressive episode - lifetime,” mental health symptomology could be investigated. For example, questions could ask whether the individual has experienced specific symptoms like loneliness, anger, or sadness in the past month. The present study also suggested that those receiving treatment either for substance use or mental health were more likely to engage in illegal activity. Existing research does not validate this finding either, as such, further research is necessary. Correlation does not mean causation, so further research should examine if treatment inadequately rehabilitates youths or if youths receiving treatment are receiving it because of their history of criminal activity, which can explain the correlation.

While the present study shed light on the relationships between mental illness, substance use, treatment, and crime and illustrated that some of these relationships are influenced by gender. There were a few limitations that should be addressed. For example, there are gaps in the existing literature due to the lack of research. The lack of existing research on the subject presents challenges because access to data is limited, and the scope of the study must remain generalized to reduce credibility issues. Also, secondary data were used, which created problems because the data were not collected to answer the present study’s chosen research questions. Furthermore, the existing codebook did little to organize its 34,000 plus variables or explain how each of the variables was created. Also, the questions being asked of participants were not displayed with the

codebook. The lack of consistency and clarity created temporal ordering issues that made analysis in the present study more difficult. For example, while some variables were defined with a specific time frame (e.g., lifetime or within the past 12 months), other variables were not provided with such details and were labeled without one. The dependent variables “any crime,” “assault,” and “theft” are examples of this. Only “sold drugs” was provided with a timeframe. This temporal ordering was especially problematic when determining the effect that treatment had on crime. Table 2 indicates that those who received both forms of treatment (substance use and mental health) were more likely to commit all types of crime. However, we cannot decipher if that means treatment is not working or if it means that youths who committed crimes were more likely to be then provided treatment. And though the dependent variable “Sold drugs” came with the timeframe of “the past 12 months”, and “substance treatment” included a timescale of “lifetime,” the lack of consistency in time measures makes it difficult to discern what came first.

Future researchers must continue to examine the gender-related differences in criminality and deviancy. The present study results seem to imply that youths would benefit from additional treatment for depression to prevent crime. This finding is problematic because the results of this study indicate that treatment for substance use and depression has little impact on reducing crime and may instead increase crime rates for juveniles. This finding may have to do with the fact that health insurance may not cover all forms of treatment (Cauffman et al., 2005; Drerup et al., 2008). However, more research needs to assess the disparities created by health insurance companies and providers to know what causes such findings. Much more research is also needed

regarding the gendered relationships between mental illness, substance use, and crime. Furthermore, research is necessary to determine which forms of intervention work the best for male and female juveniles. After all, though females commit considerably less crime than males, as demonstrated by this study and existing research, if Stakeholders (e.g., therapists and justice officials) continue to screen, assess, and treat females the same way they do males, this “one size fits all” model will not recognize the high risk of crime associated with drug use and depression specifically among female youths. Insufficient treatment will be provided to them as a result. For this reason, policy should be in place that requires Stakeholders (e.g., therapists and counselors) to learn how to work with high-risk individuals with gender related differences in mind. Policy researchers should also consider age-appropriate and gender-specific treatment plans that could be used for those dealing with mental health and substance use problems.

Outside of recommendations for future research and policy, this study’s findings should be conveyed to parents, guardians, teachers, or mentors of youths aged 12-17. The present study's findings indicate elevated risks of criminal involvement for youths using alcohol and marijuana, especially for males. Further, there are higher risk factors for becoming criminally- involved for males who get into a serious fight at school or work. Therefore, those caring for youths, especially male youths, need to pay attention to any signs of alcohol and or marijuana use. They should also be prepared to intervene should their youth get into a serious fight. Early intervention could significantly reduce the risk of later criminal involvement. Similarly, those responsible for the care of females aged 12-17 should also be prepared to intervene should they notice negative self-talk and

isolation or sleep patterns and diet changes. Such patterns indicate internalized behavioral disorders that elevate the risk of later involvement in crime.

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APPENDIX A

DESCRIPTIVE STATISTICS

Table 1. Descriptive Statistics

Variable	Description	Obs.	Mean/<i>SD</i>	Freq.
<i>Any Crime</i>	1=Crime;	18,265	0.13	2,381
	0= <i>No</i> crime		0.337	
<i>Assault</i>	1=Assault;	18,249	0.084	1,529
	0= <i>No</i> Assault		0.277	
<i>Theft</i>	1=Theft;	18,249	0.047	852
	0= <i>No</i> Theft		0.211	
<i>Sold Drugs</i>	1=Sold drugs;	18,246	0.039	712
	0= Did <i>not</i> sell		0.194	
<i>Female</i>	1=Female;	18,294	0.49	8,964
	0=Male		0.499	
<i>Depressed</i>	1=Depressed;	18,064	0.145	2,619
	0= <i>Not</i> Depressed		0.352	
<i>Substance Treatment</i>	1=Substance Treatment;	18,294	0.025	463
	0= <i>No</i> Substance Treatment		0.157	
<i>Mental Health Treatment</i>	1=MH Treatment;	18,176	0.105	1,906
	0= <i>No</i> MH Treatment		0.306	
<i>Serious Fight</i>	1= Serious Fight;	18,229	0.235	4,275
	0= <i>No</i> Serious Fight		0.424	
<i>Drug Use (Not Marijuana)</i>	1=Drug Use;	18,294	0.04	727
	0= <i>No</i> Drug Use		0.195	
<i>Marijuana Use</i>	1=Marijuana Use;	18,294	0.148	2,712
	0= <i>No</i> Marijuana Use		0.355	
<i>Alcohol Use</i>	1= Alcohol Use;	18,294	0.345	6,313
	0= <i>No</i> Alcohol Use		0.475	
<i>Race</i>	1=White	18,294	0.639	11,695
			0.475	
	2=Black	18,294	0.135	2,463
			0.329	

	3=Hispanic	18,294	0.143	2,621
			<i>0.347</i>	
	4=Other	18,294	0.0828	1,515
			<i>0.268</i>	
<i>Mother in home</i>	1= Mother in home;	18,284	0.909	16,617
	0=Mother <i>not</i> in home		<i>0.288</i>	
<i>Father in home</i>	1= Father in home;	18,278	0.72	13,158
	0=Father <i>not</i> in home		<i>0.45</i>	
<i>Youth in school</i>	1= In School;	18,294	0.983	17,980
	0= <i>Not</i> in School		<i>0.129</i>	
<i>Youth is insured</i>	1= Youth is Insured;	18,008	0.24	4,326
	0=Youth <i>not</i> Insured		<i>0.427</i>	

Table 1. Descriptive Statistics continued.

APPENDIX B
LOGISTIC REGRESSION MODELS

Table 2. Logistic Regression Models

VARIABLES	(1) Any Crime	(2) Assault	(3) Theft	(4) Sold Drugs
Female	0.476*** (0.031)	0.528*** (0.041)	0.484*** (0.050)	0.415*** (0.051)
Depressed	1.653*** (0.164)	1.771*** (0.192)	1.440** (0.199)	1.172 (0.196)
Drug use	1.546** (0.222)	1.593** (0.248)	1.211 (0.322)	2.972** (1.080)
Depressed * Female	1.239 (0.161)	1.197 (0.174)	1.164 (0.218)	1.316 (0.296)
Depressed * Drug use	1.290 (0.359)	1.072 (0.323)	0.897 (0.482)	0.427 (0.456)
Marijuana use	3.666*** (0.232)	1.895*** (0.146)	2.644*** (0.237)	13.838*** (1.667)
Alcohol use	2.094*** (0.128)	1.621*** (0.115)	2.641*** (0.254)	3.935*** (0.585)
Substance treatment	1.393 (0.241)	1.112 (0.228)	2.088*** (0.420)	2.572*** (0.517)
Mental health treatment	1.662*** (0.164)	1.620*** (0.184)	1.737*** (0.243)	1.025 (0.177)
Substance treatment * Female	1.592* (0.368)	0.961 (0.262)	0.817 (0.219)	1.190 (0.315)
Mental health treatment *Female	1.103 (0.156)	1.179 (0.186)	0.824 (0.166)	1.194 (0.293)
Serious fight	4.246*** (0.217)	5.761*** (0.348)	3.063*** (0.235)	2.778*** (0.249)
School	0.586*** (0.090)	0.634** (0.111)	0.665* (0.128)	0.501*** (0.097)
Mother in home	0.910 (0.073)	0.851 (0.078)	0.852 (0.097)	0.848 (0.110)
Father in home	0.839** (0.048)	0.884 (0.058)	0.809* (0.067)	0.758** (0.073)
Health insurance	0.841 (0.083)	0.840 (0.095)	0.919 (0.133)	0.714* (0.117)
Black	2.041*** (0.149)	2.228*** (0.180)	1.292* (0.150)	1.349* (0.189)
Hispanic	1.058 (0.081)	1.048 (0.094)	1.258* (0.136)	1.040 (0.138)
Other	1.214* (0.113)	1.169 (0.129)	1.568*** (0.200)	1.147 (0.184)
Observations	17,702	17,695	17,691	17,686

seEform in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Table 2.

APPENDIX C

GENDER SPECIFIC LINEAR REGRESSION MODELS

Table 3. Gender Specific Linear Regression Models

VARIABLES	Any Crime			Assault			Theft			Sold Drugs		
	Male	Female	Prob > chi2	Male	Female	Prob > chi2	Male	Female	Prob > chi2	Male	Female	Prob > chi2
Depressed	0.069	0.073	0.8324	0.066	0.054	0.495	0.027	0.024	0.7978	0.008	0.013	0.6795
Drug use	0.032	0.03	0.9401	0.028	0.03	0.934	0.002	0.001	0.9215	0.01	0.008	0.8525
Depressed* Drug use	0.066	0.003	0.4705	0.033	0.008	0.7614	-	-0.023	0.9174	-	-0.029	0.5602
Marijuana use	0.236	0.172	0.0022*	0.081	0.055	0.1171	0.084	0.074	0.5225	0.216	0.127	<0.001*
Alcohol use	0.087	0.026	<0.001*	0.042	0.009	0.001*	0.046	0.016	0.0001*	0.028	0.008	<0.001*
Substance Treatment	0.149	0.082	0.1256	0.01	0.031	0.5556	0.076	0.086	0.7862	0.176	0.112	0.1163
Mental treatment	0.08	0.058	0.2594	0.07	0.042	0.1111	0.022	0.029	0.5953	0.007	0.000	0.577
Serious Fight	0.194	0.165	0.0491*	0.182	0.146	0.007	0.069	0.052	0.0818	0.04	0.043	0.7117
Observatio	9,005	8,697		9,002	8,693		9,001	8,690		8,993	8,627	

* p<0.05

Table 3.

Note: All constant variables were used in the above models.