

PATTERNS OF OFFENDING: BEHAVIORAL HEALTH AND  
CRIMINOGENIC INFLUENCES

A thesis presented to the faculty of the Graduate School of  
Western Carolina University in partial fulfillment of the  
requirements for the degree of Master of Art in Psychology

By  
Kaitlin Alyssa Guston

Chair: Dr. L. Alvin Malesky  
Professor of Psychology  
Department of Psychology

Committee Members: Dr. Norman G. Hoffmann, Psychology  
W. David Scales, Psychology

## ACKNOWLEDGEMENTS

I would like to thank my committee members and director for their support and encouragement through this project. Particularly, I would like to thank Dr. Norman Hoffmann for providing me this opportunity. Additionally, I would like Cullen Shay for his mad writing/editing skills, and my family for their support through this arduous process.

## TABLE OF CONTENTS

ABSTRACT.....	0
CHAPTER ONE: INTRODUCTION.....	1
CHAPTER TWO: LITERATURE REVIEW.....	5
Behavioral Health Conditions and Recidivism Risk.....	5
Risk and Protective Factors.....	6
Risk Assessment Approaches and Models.....	8
Measures of Risk Assessment.....	13
Level of Service Inventory-Revised (LSI-R).....	14
Historical-Clinical-Risk Management-20 (HCR-20).....	17
Psychopathy Check List-Revised (PCL-R).....	19
Comprehensive Addictions and Psychological Evaluation (CAAPE-5).....	21
Offending Patterns of Individuals with Behavioral Health Conditions.....	23
Statement of Problem.....	29
Hypotheses.....	30
CHAPTER THREE: METHODOLOGY.....	34
Participants.....	34
Measures.....	35
Procedure.....	35
CHAPTER FOUR: RESULTS.....	37
CHAPTER FIVE: DISCUSSION.....	45
REFERENCES.....	49

LIST OF TABLES

Table 1: Results of Chi-square Test for frequency of booking and Indication of ASPD ..... 39

Table 2: Results of Chi-square Test for frequency of property crimes and Indication of Severe SUD..... 41

Table 3: Results of Chi-square Test for Comorbidity between SUD and ASPD ..... 42

Table 4: Results of Chi-square Test for Frequency of Possession Offenses and Severe SUD..... 43

Table 5: Results of Chi-square Test for Frequency of Nuisance Offenses and Severe SUD ..... 43

Table 6: Results of Chi-square Test for Rate of Recidivism and 2 or more Sever SUDs ..... 44

## ABSTRACT

### PATTERNS OF OFFENDING: BEHAVIORAL HEALTH AND CRIMINOGENIC INFLUENCES

Kaitlin Alyssa Guston

Western Carolina University (April 2018)

Director: Dr. L. Alvin Malesky

Due to the higher arrest and recidivism rates of offenders with behavioral health conditions (BHCs), it is often assumed that BHCs are a direct risk factor for engaging in criminal behavior. This assumption, however, has been proven incorrect by numerous studies. As a result, predicting recidivism for offenders with BHCs would be best achieved through the examination of general risk factors, clinical factors, and patterns of offending. Most contemporary risk assessments consider BHCs in their models by examining clinical risk factors, such as diagnoses or symptoms of conditions. Unfortunately, the poor definition of BHCs by most risk assessments negatively impacts their predictive accuracy and represents a caveat to their overall effectiveness. To negate this weakness, the current study seeks to validate the Comprehensive Addiction and Psychological Assessment – 5 (CAAPE – 5), as both a diagnostic and risk assessment for offenders with BHCs by examining the associations between specific BHCs and types of offending.

## CHAPTER ONE: INTRODUCTION

There are more than 2.3 million individuals imprisoned in the United States (Prison Policy Initiative, 2016). Of these individuals, approximately 646,000 are held in local jails. This does not include those that go to jail each year but are released on bail; that figure has recently surpassed 11 million (Prison Policy Initiative, 2016). Within the jail population, 64% of inmates are affected with various behavioral health conditions (James & Glaze, 2006).

The prevalence of behavioral health conditions (i.e. mental health disorders as defined in the Diagnostic and Statistical Manual of mental disorders) in incarcerated offenders has been extensively documented and is receiving widespread attention. Much of this attention has been focused on state and federal prisons but not local jails. The most recent federal prevalence report available for the jail population was conducted in 2004 (James & Glaze, 2006) and was not only limited in the breadth of disorders it examined but was also limited to symptoms and not formal diagnoses. A more recent and detailed prevalence study was conducted in 2016 with a rural jail population and found high indications of Substance Use Disorder (85.5%), Post-Traumatic Stress Disorder (48.1%), Major Depressive Episodes (34.6%), Panic Attacks (29.3%), Positive Personality Disorders; Antisocial (35%), Obsessive compulsive (29.7%), and Borderline (12.4%), Bipolar Disorder (11%), and Psychotic Disorders (8.5%) (Raggio, Hoffman & Kopak, 2017).

This influx of behavioral health conditions in U.S. jails and prisons coincides with the deinstitutionalization of psychiatric hospitals in the 1970's, and the implementation of more stringent drug and crime prevention policies in the 1980's (Lurigio, 2016; Lamb & Weinberger, 1998). Deinstitutionalization was intended to reduce human rights violations and provide

treatment to those with behavioral health conditions in communities instead of hospitals.

However, due to the lack of community mental health facilities and the scarcity of mental health resources, many behavioral health conditions are left undiagnosed, and untreated (Sheth, 2009; The Sentencing Project, 2002). This has led to a higher risk for individuals with mental health conditions to be arrested (Lamb & Weinberger, 1998; Schuerman & Kobrin, 1984), largely for infractions that could be attributed to symptoms of their condition (Etter, Birzer, & Fields, 2008).

An increased rate of recidivism has also become problematic. Reoffending perpetuates the incarcerated population and overcrowding in correctional institutions (Adams & Farrandino, 2008; Bender, 2003). By comparison to the general population, people with behavioral health conditions have a higher rate of recidivism (Gagliardi, Lovell, Peterson, & Jamelka, 2004). These elevated rates of arrest and recidivism could be attributed to behavioral health conditions being poorly defined and identified in jail and prison populations (Birmingham, 2003). The screening tools used by correctional institutions have been extensively criticized for their numerous flaws including the misidentification of offenders as having a condition when they do not, failing to identify offenders who do have a condition, and inadequately assessing for current mental state, among others (Hayes, Senior, Fahy, & Shaw, 2014). Even more alarming, when screening tools do correctly identify behavioral health conditions in an inmate, the inmate is seldom followed up with and often left untreated (Hayes, Senior, Fahy, & Shaw, 2014).

Failure to identify behavioral health conditions in incarcerated populations during the booking process creates problems for penal institutions and offenders. It also hinders the ability to predict recidivism for offenders with behavioral health conditions. A possible solution to this problem is to conduct empirically supported risk assessments on inmates in addition to current screening protocols. Risk assessments used with jail populations focus on clinical and

demographic factors that are directly related to criminal behavior (Austin, 2004). Therefore, these assessments can identify the presence of behavioral health conditions in offenders and predict their likelihood to reoffend (Taxman, Cropsey, Young, & Wexler, 2008). The abundant utility of risk assessments notwithstanding, there are drawbacks regarding the identification of behavioral health conditions and predictive accuracy for offenders with such conditions (Ferguson, Ogloff, & Thomson, 2008). One weakness of risk assessments is the identification of comorbid behavioral health disorders, that is, two or more conditions affecting an individual at the same time (Ferguson, Ogloff, & Thomson, 2008). These weaknesses are concerning for the same reason weaknesses in screening protocols are concerning. If a risk assessment cannot properly identify behavioral health conditions, it cannot properly predict recidivism for offenders who are affected by them.

The use of diagnostic risk assessments could mediate the weaknesses of general risk assessments. Structured diagnostic instruments provide accurate determinations for which behavioral health conditions are affecting an individual at a given time (First, Williams, Karg, & Spitzer, 2015). Combining diagnostic factors with demographic and clinical risk factors present in general risk assessments, provides a tool that predicts recidivism for offenders with behavioral health conditions - without the weaknesses of general risk assessments. Another benefit of using a diagnostic risk assessment is the ability to examine patterns of offending based upon specific behavioral health conditions, which could assist in predicting recidivism.

Identifying patterns of offenses committed by individuals with behavioral health conditions would provide a more detailed understanding of which offenders have a higher risk to reoffend and what their future offenses are most likely to be. Few studies have examined this type

of association, and those that have are limited to severe behavioral health conditions and violent offending (Cochrane, Grisso & Frederick, 2001; Morgan et al., 2013).

The weaknesses prevalent in screening protocols and contemporary risk assessments suggest a need for diagnostic instruments that can identify the presence of behavioral health conditions, and predict recidivism based on patterns of offending. Additionally, using a risk assessment that allows for diagnosis will also fill the large gap in knowledge regarding types of behavioral health conditions and types offenses they are most likely to commit. The Comprehensive Addictions and Psychological Evaluation – 5 is a diagnostic assessment that could meet this need.

## CHAPTER TWO: LITERATURE REVIEW

### **Behavioral Health Conditions and Recidivism Risk**

Recidivism exacerbates the incarceration rate in U.S. jails. According to a study on recidivism rates between 2005 and 2010, two thirds of offenders that are released from incarceration were rearrested within three years, a that figure jumps to three-fourths after five years (Durose, Cooper, & Snyder, 2014). Of the offending population, individuals with severe behavioral health condition are 53% more likely to reoffend than individuals without severe behavioral health conditions (Louden, & Skeem, 2011). This rate continues to increase for offenders with comorbid behavioral health conditions, who have a 68% higher rate of recidivism in comparison to the general offender population (Wilson, Draineb, Hadley, Metraux & Evans, 2011).

The disproportionately high prevalence of behavioral health conditions in U.S. jails, coupled with higher recidivism rates has resulted in the assumption that behavioral health conditions are significant risk factors for the continuation of criminal behavior. However, researchers have largely dispelled this assumption and have concluded that simply having a behavioral health condition alone does not increase the likelihood of offense, or reoffence (Skeem, Winter, Kennealy, Loudon & Tatar, 2014; Bonta, Law & Hanson, 1998). Therefore, to predict future offending in individuals with behavioral health conditions it is best to also examine the general risk factors for engaging in criminal behavior.

The prediction of criminal activity for behavioral health conditions is best examined through risk factors that examine clinical factors of risk as well as the risk factors that affect the general population. The clinical aspects are specific to the behavioral health condition subgroup, such as symptoms and diagnoses. The general aspects include static and dynamic risk factors of

criminal behavior. The large body of research attending to these concepts has led to the identification of key principles for predicting future offending and identifying which offenders require the most intense treatment. The most established of these principles lie within the Risk-Needs-Responsivity model. The risk principle focuses on who is most at risk for offending, which is determined by assessing their criminogenic needs (the needs principle), and the responsivity (or treatment) principle identifies how best to reduce likelihood of reoffending (Andrews & Bonta, 2006).

Criminogenic needs encompass some of the clinical and general risk factors mentioned above, and directly relate to one's likelihood of engaging in criminal behavior. Individuals with behavioral health conditions are therefore at an increased risk for offending and reoffending, due to possessing the same broad risk factors as the general population, as well as more intense clinical factors specific their diagnosis and symptoms (Skeem, Winter, Kennealy, Louden & Tatar, 2013). By themselves, behavioral health conditions are not significant risk factors. But when combined with other general risk factors, they have a greater likelihood of becoming catalysts for criminal behavior. Thus, it is especially important to incorporate the risk factors specific to behavioral health conditions, along with risk factors such as past criminal record, employment, education, etc., into risk prediction models. Paying close attention to the patterns of risk factors possessed by offenders with behavioral health conditions can assist in accurately predicting who is most at risk for reoffending.

### **Risk and Protective Factors**

Risk factors for engaging in criminal activity are often categorized as static or dynamic. Static risk factors are factors that cannot be changed (e.g. age, criminal history). Dynamic risk factors come and go (e.g. employment, antisocial behavior) and are often the primary factors

targeted in risk and treatment models. Dynamic factors can be further broken down into stable factors, which are more difficult to change (e.g. substance use, antisocial attitudes); and acute factors, which are more susceptible to change (e.g. mood, cooperation with authority) (Hanson & Harris, 2001). Andrews & Bonta (2010), identified eight primary dynamic factors that carry the most risk for criminal behavior, four moderate and four major. The former are family structure, years of education, leisure/recreation activities, and substance use; the latter are history of antisocial behavior, antisocial personality patterns, antisocial cognition, and antisocial associates. These factors are the most prominently validated risk factors to date and have been adapted to an extent in numerous forensic assessments (van der Knaap, Alberda, Oosterveld & Born, 2012) such as, the Level of Service Inventory-Revised, Historical Clinical and Risk Management 20, and the Psychopathy Check List-Revised.

Protective factors serve as a buffer to risk factors and lessen the likelihood that one will commit criminal offenses (Rutter, 1987). An ongoing argument among researchers is whether protective factors are separate from risk factors, or if they are simply the absence of major risk factors (Office of the Surgeon General, 2001). Rutter (1987) characterizes the protective factors as separate from risk factors and describes them with four processes: responding to risk conventionally, lessening negative chain reactions, building self-esteem, and taking part in conventional opportunities. These protective factors revolve around coping mechanisms taught to children by their parents, maintaining secure and conventional personal relationships, academic success, positively navigating conflict, and taking advantage of opportunities to break from adverse circumstances (Rutter, 1987). Another school of thought, advocated by the Office of the Surgeon General, defines protective factors as “characteristics or conditions that interact with risk factors to reduce their influence on violent behavior” (Office of the Surgeon General, 2001 (chapter 4)). An example of this

type of protective factor would be tutoring programs which can mitigate the risk factor of low academic success.

Risk and protective factors are cumulative, meaning the sum of the factors affecting an individual determines the likelihood of their engaging in criminal activity (Andrews & Bonta, 2003). These factors are also collaborative; a risk factor can be cancelled out by a protective factor (American Psychiatric Association, 2015). Understanding these factors is imperative to understanding the models which utilize them.

### **Risk Assessment Approaches and Models**

Contemporary risk assessments fall into two broad categories, actuarial and structured professional judgment (SPJ). Actuarial methods are a formal statistical approach to estimating the risk of future criminal behavior (Douglas & Reeves, 2010). The actuarial approach uses fixed algorithms to predict recidivism, built upon data collected on groups of reoffending and non-reoffending populations (Hart, Michie, & Cooke, 2007). Due to the rigid statistical processes this method is built upon, it promotes interrater reliability, and the accuracy of prediction (Douglas & Reeves, 2010). Additionally, the actuarial approach blatantly discounts the use of clinical judgement, viewing it as devoid of empirical support and biased on part of the clinician (Douglas & Reeves, 2010). The Actuarial approach has garnered wide support as the more accurate method to predict recidivism (Ægisdóttir et al., 2006; Hilton, Harris, Rawson, & Beach, 2005; Hanson, & Morton-Bourgon, 2004; Grove, Zale, Lebow, Snitz, and Nelson, 2000). Though this method is praised for its empirical and statistical rigidity, these qualities result in considerable weaknesses. Approaches using this method are based solely upon samples and the statistics originally used on that sample. This practice weakens actuarial approaches in several ways. First, the initial estimations based upon the population the assessment was normed on, may not apply outside of this norming sample. Second,

once strong predictions may weaken with new samples. Finally, some initial findings from norming samples may have simply occurred through chance (Douglas & Reeves, 2010). Therefore, unless assessments are statistically proven to be stable over time, and over a variety of sample populations, the accuracy of these assessments should be taken with caution.

Structured professional judgment (SPJ) approaches seek to bridge the gap between clinical judgment, and actuarial methods (Douglas, Yeomans, & Boer, 2005). Assessments using this approach structure theoretically based risk factors (generally between 10-30 factors), and provide guidelines and scoring protocols to dictate the level of risk in an offender (Heilbrun, Douglas, & Yasuhara, 2009). SPJ uses actuarial and operationally defined clinical items in their assessments, largely due to the knowledge that many individuals without extensive clinical expertise must assess for risk in crisis situations (e.g. police officers) (Kropp & Hart, 2000). By identifying dynamic risk factors for offenders, a management strategy can be adapted to them quickly and efficiently in order to prevent violent situations from occurring (Douglas & Kropp, 2002). This method has been praised for allowing a logical and distinguishable link between risk and intervention, furthermore this method allows the severity of risk in an offender to be identified (Kropp, & Hart, 2004). A further strength lies within rational item selection (APA, 2015), which minimizes the probability of excluding essential items by choosing the risk factors with the most empirical connection to criminal behavior. Given their inclusion of clinical factors, SPJ methods are subject to some of the same weaknesses as clinical judgment alone. With this perceived excess of clinical judgment, researchers argue that the SPJ approach has lower reliability and validity than actuarial approaches to risk assessment (Bonta & Wormith, 2007). Moreover, many SPJ assessments lack a quantitative scoring scheme which leads this method to be viewed as a regressive step in risk assessment (Craig, Dixon, & Gannon, 2013).

By far the most prominent model of offending is Andrews, Bonta & Hoge's Risk-Needs-Responsivity (RNR) model (1990). The RNR model is based on the authors' observations that criminal behavior is predictable, risk for engaging in criminal activities can be mediated with treatment, and treatment ultimately decreases recidivism (Andrews & Bonta, 2003). As mentioned previously, the risk principle suggests that the treatment an offender group (e.g. individuals with behavioral health conditions, sexual offenders, etc.) receives should be based upon their risk for future offending, ranging from minimal or no treatment (low risk), to intense treatment (high risk). The needs principle refers to a group's rehabilitative needs, often referred to as their criminogenic needs, which are used to determine the level of treatment. The factors that have the strongest predictive power in this model are the eight dynamic criminogenic needs (i.e. family structure, years of education, leisure/recreation activities, substance use, history of antisocial behavior, antisocial personality patterns, antisocial cognition, and antisocial associates) identified by Andrews and Bonta (1990). The responsivity principle pertains to the response an offender might have to treatment, and the factors that impact their response, such as: motivation and learning style (Andrews & Bonta, 1998, 2003). Per the RNR model, the treatment must be tailored to the offender group. If it is not, reducing the risk of recidivism using this model is largely ineffective (Andrews & Bonta, 1998, 2003). The risk and need principle are used to target the most prominent criminogenic factors for an offender group, and then devise a treatment plan that will be the most beneficial, the three principles together guide the treatment method which is utilized (Blanchette & Brown, 2006). The theoretical groundwork for this model stems largely from the social learning, psychodynamic, and cognitive behavioral theories.

The Personal Interpersonal Community Reinforcement (PIC-R) is especially noteworthy as it is the theory which directly stems from the RNR model. This theory, founded by Andrews and Bonta

(2003, 2006, 2010) is an amalgamation of their Psychology of Criminal Conduct (PCC) and General Personality and Social Psychological Perspective (GPSPP); both have strong ties to social learning and control theories. PIC-R focuses on the four major criminogenic risk factors: history of antisocial behavior, antisocial personality patterns, antisocial cognition, and antisocial associates, of which Andrews and Bonta describe as ties to crime or ties to convention (2003). The central assumption of PIC-R follows the theories of classical and operant conditioning if the rewards for committing an antisocial act outweigh the costs, the act is more likely be committed (Andrews & Bonta, 2003, 2006, 2010). Within this theory there are four categories which influence the costs and benefits of committing antisocial behaviors: personal, which can be described as antisocial behaviors, thought patterns and self-reinforcement; interpersonal, of which could include antisocial peer groups, or other social influences; community, which encompasses environmental factors; and situational, such as instances of high stress or anxiety (as cited in APA, 2015). Andrews and Bonta (2003, 2006, 2010) claim that interactions between these factors significantly increase the likelihood of an individual engaging in criminal activity. Although the PIC-R theory is rather new, its relation to the principles in the RNR theory have influenced not only correctional practices but tools for risk assessment as well (Ward, Melsner & Yates, 2007).

A substantial problem with the cost vs. benefit theory of offending, particularly for offenders with behavioral health conditions, is that it assumes that the individual is capable of making such rational determinations. Conditions such as substance use disorders, compulsive disorders, and gambling disorders, oppose an individual's ability to employ a rational weighing of costs vs. benefits. As an illustration, persons with severe substance use disorders continue to use substances regardless of the extent of negative consequences.

The RNR model has been deemed one of the only empirically validated intervention that reduces recidivism (Polaschek, 2012). The strengths of the RNR model begin with its potent theoretical grounding in social learning, and psychodynamic perspectives (i.e. control theories), due to its wide theoretical berth, the principles of this model have strong generalizability (Polaschek, 2012). Due to this strength, previously inefficient models of rehabilitation can adapt RNR principles and successfully reduce rates of recidivism (Paparozzi & Gendreau, 2005). A meta-analysis examining the effectiveness of the RNR principles analyzed 80 studies and found statistically significant relationships between treatment programs that followed the RNR principles and a reduction in recidivism. Furthermore, the treatment programs that did not use the principles had an increase in recidivism rate (Andrews, Bonta & Hoge, 1990). A larger metanalysis conducted in 2006 using 374 studies that analyzed the effects of treatment and criminal justice sanctions on recidivism found that not only do RNR principles for treatment fare better than other punitive principles, they are even more effective in the community than in correctional facilities (Andrews & Bonta, 2006). The RNR principles have also influenced the way in which clinicians provide treatment and how the correctional staff behave toward inmates (Dowden & Andrews, 2004). Aside from treatment, the RNR risk principles (criminogenic needs) have been incorporated into number of well-known risk assessment measures such as the Level of Service Inventory-Revised (LSI-R) (Andrews & Bonta, 1995).

Criminogenic factors have had a substantial impact on the identification of individuals who are at risk for future offending. However, there are some limitations that bring into question whether a one size fits all model, such as RNR, is fitting for groups with unique conditions. Some weaknesses that have surfaced recently is the poor predictive accuracy for offenses related to substance use, (Prendergast, Pearson, Podus, Hamilton & Greenwell, 2013); addictions defy the

logical rewards and costs aspect of risk assessments, and therefore substance use offenses are not adequately taken into consideration by them. This weakness impacts predictive accuracy for individuals with behavioral health conditions in particular, since it has been found that 62% of offenders with behavioral health conditions also have a comorbid substance use disorder (Skeem, Steadman & Manchak, 2015; James & Glaze, 2006). Another critical weakness is the misconception that the RNR model places focus on the individual offender, in actuality the RNR model focuses on individual groups of offenders. This is a weakness that stems from the “one size fits all” aspect of the RNR model, which does not accommodate for the individual differences that are critical for individuals with behavioral health conditions. In summation, the RNR model has illuminated the process of how offenders who are at risk for recidivism are identified, it has presented a treatment model that has been found to reduce recidivism, however, it lacks some of the clinical risk factors that are salient for offenders with behavioral health conditions.

### **Measures of Risk Assessment**

Taking behavioral health conditions into consideration when assessing risk in offenders is imperative. The three most popular risk assessments that are generally associated with accurate predictions of recidivism in offenders with behavioral health conditions are: The Level of Service Inventory-Revised (LSI-R), the Historical Clinical Risk Management-20 (HCR-20), and the Psychopathy Check List-Revised (PCL-R). Their strengths and weaknesses pertaining to offenders with behavioral health condition are discussed. Additionally, this section will introduce the Comprehensive Addictions and Psychological Evaluation-5 (CAAPE-5), a diagnostic assessment which shows promise for predicting recidivism specifically among offenders with behavioral health conditions.

## **Level of Service Inventory-Revised (LSI-R)**

The Level of Service Inventory-Revised (LSI-R), although based in the actuarial model of assessment, has some considerations for behavioral health conditions. Developed by Andrews and Bonta (1995a), the LSI-R centers around the eight primary criminogenic factors. The internal consistency for the 54 item total score ranges from .64 to .94 with a mean Cronbach alpha of .84 (Andrews & Bonta, 1995a; Cronbach, 1951). The 10 subscales measure one static domain - criminal history - and nine dynamic domains: level of education, employment history, financial situation, family and spousal circumstances, place of residence, leisure and recreational activities, substance use, companion/peer group, emotional and personality features, and attitudes/orientations (Andrews & Bonta, 2003b). The internal consistency for the subscales are variable: criminal history, level of education and substance use have a mean coefficient of .75; but the internal consistency for leisure and recreational activities, companion/peer group, emotional and personality features, and attitudes/orientations are approximately .60 and above; and lastly finances, residence, and family/spousal situation have the poorest internal consistency with alpha's as low as .45 (Andrews & Bonta, 2003b; Cronbach, 1951). The total score represents the number of risk factors an offender maintains and can be used to determine risk for criminal behavior within correctional institutions and the community (Andrews & Bonta, 2003b). The scores are classified as Low Risk (0-13), Low/Moderate risk (14-23), Moderate risk (24-33), Moderate/High risk (34-40), and High risk (41+) (Skilling, 2010). The 10 subscales offer further insight into which areas the offender poses the most risk (Andrews & Bonta, 2003b).

The validity of the family of LSI instruments and their subscales have been studied extensively at each revision. The original version was presented in 1982 and was subsequently revised in 1995 which brought the LSI-R and its short version, LSI-R:SV (Andrews & Bonta, 1995a,

1995b). These versions were followed by a fourth-generation assessment scale, Level of Service/Case Management Inventory (LSI/CMI) (Andrews, Bonta & Wormith, 2004). The changes included eliminating redundant items, reorganizing items to coincide with the eight primary criminogenic needs, adding a protocol for progress notes that refer to the offender risk factors, and the assessment was extended to include responsivity issues, and the strengthening of non-criminogenic and protective factors (Andrews, Bonta & Wormith, 2004). Though these changes seem substantial, the authors believe that these factors were already present, but were too informal for practitioner use (Andrews, Bonta & Wormith, 2004). Despite this revision, the LSI-R remains the most extensively utilized version of the LSI instruments.

The LSI-R is currently the gold standard for predicting recidivism among a wide range of offender groups, such as individuals who engage in general offending (e.g. property offenses, theft, etc.) (Oklahoma Department of Corrections, 2009), long term inmates (Manchak, Skeem & Douglas, 2008), parolees and probationers (Andrews, 1982), offenders placed in halfway house programs (Bonta & Montiuk, 1985), and sexual offending (Barnoski, 2005), among others. According to Ferguson & Thomson (2008), the LSI instruments are exemplary assessments for predicting recidivism in populations with behavioral health conditions. That notwithstanding, their study conducted with 208 mentally ill offenders did uncover a weakness in the LSI tools in that they lack predictive accuracy for comorbid disorders (Ferguson & Thomson, 2008). As previously mentioned, the LSI scales have high predictive accuracy for general recidivism; however, some researchers have observed only low to moderate predictive accuracy for violent recidivism (Gendreau, Goggin & Smith, 2002). Despite this apparent weakness, a meta-analysis compared LSI scales with the Psychopathy Check List-Revised, which is reputed for its prediction of violent recidivism, and concluded that both scales had similar degrees of predictive accuracy for violent

offenses (Yang, Wong & Coid, 2010). A more recent meta-analysis (Olver & Stockdale, 2014), analyzed the predictive accuracy of the LS instruments using 128 studies. This analysis found that LSI scores predicted general community recidivism and institutional misconduct. The results also suggested that the LSI scales predict violent recidivism more significantly than other studies have reported. However, their sample of violent recidivists lacked the size and magnitude that was present in the general recidivist sample (Olver & Stockdale, 2014). A weakness of meta-analyses is worth noting here. The quality of meta-analytic research is dependent upon the quality of the studies analyzed. Case in point, the meta-analysis previously discussed is limited in its studies that pertain to violent recidivism which resulted in an inflation of their findings on the predictive accuracy of violent recidivism using the LSI-R.

The limitations of the LSI scales regarding behavioral health conditions, (i.e. emotional/personal scale, substance use, and attitudes/orientations) begin with the norming research for the predictive accuracy of this assessment and the model it is based on. The samples used to norm the instruments for offenders with behavioral health conditions were inadequately sized and poorly proportioned. As a result, behavioral health conditions within these samples did not represent the wide range of conditions found in jails and prisons (Andrews & Bonta, 2010), and they neglected to properly examine the impacts of comorbid behavioral health conditions on offending and reoffending (Bonta, Law & Hanson, 1998). Contemporary studies have acknowledged the comorbidity of behavioral health conditions, but they often employ overly broad criteria for inclusion to this subgroup. The norming study used for the LSI-OR (Ontario Revised), which limited the criteria for inclusion in the behavioral health condition subgroup to symptoms of depression, psychosis, suicidality, or evidence of emotional distress (Girard & Wormith, 2004), is one such example. Furthermore, although substance use is included in the eight primary

criminogenic needs of which this instrument was built upon, the predictive accuracy of offenses stemming from substance use disorders is poor when comorbid with a behavioral health condition (Ferguson & Thomson, 2008). This may be related to the unsophisticated and ambiguous verbiage used by the LSI instruments to measure substance use disorders.

### **Historical-Clinical-Risk Management-20 (HCR-20)**

The Historical-Clinical-Risk Management-20 (HCR-20) is an instrument which uses structured professional (clinical) judgement (SPJ). Currently in its third version (Douglas, Hart, Webster, & Belfrage, 2013), the HCR-20 contains history, clinical, and risk scales (Webster, Douglas, Eaves & Hart, 1997). The history scale encompasses previous violence (H1), antisocial behavior (H2), interpersonal relationship problems (H3), problems with employment (H4), substance use (H5), behavioral health diagnoses (H6), personality disorder (H7), trauma (H8), violent attitudes (H9), and noncompliance with treatment or supervision (H10) (Webster, Douglas, Eaves & Hart, 1997). The clinical scale encompasses recent issues, including problems with insight (e.g. insight regarding behavioral health conditions) (C1), violent intentions/attitudes (C2), symptoms of behavioral health conditions (C3), instability (C4), and problems with treatment (C5) (Webster, Douglas, Eaves & Hart, 1997). Lastly, the risk scale encompasses the prediction of future violence or other criminal behavior, including the lack of future goals/plans (R1), housing problems (R2), personal support (R3), problems responding to treatment or supervision (R4), and a lack of adequate coping mechanisms (R5) (Webster, Douglas, Eaves & Hart, 1997). Each item can be scored as 0, 1, or 2, depending on how close an offender's characteristics match the item, resulting in a maximum possible score of 40 (Douglas, Hart, Webster, & Belfrage, 2013). The higher an offenders score, the more likely they are to commit violent acts within the next year (Douglas, Hart, Webster, & Belfrage, 2013).

The strengths of the HCR-20 begins with the overwhelming empirical evaluations the measure has undergone (Douglas, Shaffer, et al., 2014). It has shown to be especially useful for evaluating the risk of recidivism in offenders with behavioral health conditions (Douglas, Hart, Webster, Belfrage, Guy & Wilson, 2014), which is of particular interest to the current study. A study conducted with 887 patients, discharged from four separate medium security facilities in the United Kingdom, tested the predictive accuracy of the HCR-20 on forensic psychiatric populations (Gray, Taylor, Snowden, 2008). The patients were followed for two years, and the HCR-20 was completed using only information provided upon the patients' discharge from their institution. Their findings concluded that total scores on the HCR-20 are predictive of general criminal behavior, as well as violent behavior up to five years after discharge (Gray, Taylor, Snowden, 2008).

The weaknesses of the HCR-20, regarding behavioral health conditions, become evident when individual scales and items are examined. In a number of studies, past behavioral health diagnoses (H6) and current symptoms of behavioral health conditions (C3) lacked generalizability (Liu, Yang, Ramsay, Li, & Coid, 2011; Coid, Yang, Ullrich, Zhang, Sizmur, Farrington, & Rogers, 2011; Gray, Taylor, Snowden, 2008). These studies concluded that due to this poor generalizability, the HCR-20 consistently fell short when predicting recidivism for offenders with behavioral health conditions. Additionally, a study examining within-individual changes in forensic in-patients, found that the clinical and risk scales of the HCR-20, although predictive of violence in the short-term (i.e. one year), did not accurately predict violence in the long-term (i.e. five years) (Wilson, Desmarais, Nicholls, Hart, & Brink, 2013). Furthermore, a study conducted on long-term offenders in maximum security institutions tested the predictive validity of the HCR-20 scales and found that the clinical and risk scales had high predictive validity, but that nearly none of the historical items could accurately predict institutional violence (Belfrage, Fansson, & Strand, 2000). Most strengths and

limitations of the HCR-20 are contradictory and are another limitation for this assessment. Until studies can provide clear cut strengths and limitations, HCR-20 results should be interpreted with caution.

#### Psychopathy Check List-Revised (PCL-R)

The Psychopathy Check List- Revised (PCL-R) is an assessment based on detailed semi-structured interviews along with collateral information from the offender's criminal record (PCL-R; Hare, 1991). The PCL-R seeks to assess criminality in the form of psychopathy which is described as a lack of empathy or conscience in addition to impulsive and manipulative behavior (Skeem, Polaschek, Patrick, & Lilienfield, 2011). Hare's PCL-R is based on four broad factors: interpersonal, affective, lifestyle, and antisocial; within each broad factor is four specific factors. The interpersonal factor includes: glib/superficial, grandiose self-worth, pathological lying, and conning/manipulative. The affect factor includes: lacking remorse or guilt, shallow affect, callous/unempathetic, and failure to accept responsibility for actions. The lifestyle factor encompasses: stimulation seeking, impulsivity, irresponsibility, parasitic orientation, and lack of realistic goals. Lastly, the antisocial factor encompasses: poor behavioral controls, early behavioral problems, juvenile delinquency, and criminal versatility (Hare, 2003). The PCL-R consists of 20 items, each item can be scored as 0, 1, or 2, providing a maximum score of 40. The higher the score, the more psychopathic traits an individual possesses, thus making that individual more likely to engage in criminal activity (Hare, 2003).

The discrepancy between psychopathy and Antisocial Personality Disorder (APD) is important to note when discussing the PCL-R. APD is two to three times more prevalent in forensic populations than psychopathy when measured by the PCL-R. Most offenders who have higher scores on the PCL-R have APD; however, most offenders who meet the criteria for an APD diagnosis do

not score high on the PCL-R (Patrick, 2005). Furthermore, of the association between APD and psychopathy, APD is only strongly associated with factor two items (affect), but minimally associated with all other items (Patrick, 2005).

The PCL-R is the single most studied assessment of psychopathy and antisocial behavior, it has been associated with recidivism, violence, and different types of aggression among a myriad of offenders and psychiatric patients (Zwets et al., 2015; Cima, & Raine, 2009; Walters, Knight, Grann, & Dahle, 2008). Additionally, it is empirically validated for both males and females, using samples from several countries across Europe, North America, and South America (Forth, Bo, & Kongerslev, 2013). However, a major downfall is its lack of research examining its utility with the DSM – 5. Given the PCL-R’s distinct precision for predicting recidivism and institutional misconduct, all Dutch forensic psychiatric hospitals require the assessment to be administered to psychiatric inpatients (Zwets et al., 2015). A study connecting behavioral health conditions to scores on the PCL-R in the Netherlands stands out in accordance with the interests of the current study (Hildebrand, & de Ruiter, 2004). Using PCL-R scores from psychiatric inpatients and diagnostic information, Hildebrand and Ruiter found that higher scores on the PCL-R were associated with a myriad of AXIS I disorders from the DSM-IV including: substance related (48%), paraphilia (20.4%), schizophrenia/psychotic disorders (17.3%) (2004). Axis II disorders were prevalent to an even greater extent with 89.3% meeting the criteria for a Personality Disorder (PD), primarily antisocial (47.8%), narcissistic (27.7%), borderline (25.5%), and paranoid (19.1%). Moreover, 72.4% of this study’s population met the criteria for more than one behavioral health condition (Hildebrand, & de Ruiter, 2004). This study demonstrates a substantial association between PCL-R results, offending, and behavioral health conditions. Of even more importance, this study examined comorbid behavioral health conditions as well, with results producing a similar prevalence rate as is

found in U.S. jails and prisons. Another study using PCL-R scores examined motivational interventions for individuals placed in jail diversion programs for substance use offenses (Swogger et al., 2016). Participants completed the PCL-R and took part in a motivational intervention substance use treatment. During a 6-month follow-up, it was discovered that participants that scored high in the core psychopathy scales, especially factor 2 (affective), did not adhere to treatment and experienced significant relapse (Swogger et al., 2016). These results suggest that the PCL-R scales also have strong associations and predictive abilities for substance use disorders, as well as individual and comorbid behavioral health disorders as discussed in the previous study.

The limitations of the PCL-R begin with the process on which it must be administered and scored. The PCL-R requires a trained examiner, a semi-structured clinical interview, and a review of institutional records this process is time intensive and costly (Edens Skeem, Cruise, & Cauffman, 2001). Additionally, it has been argued that the antisocial characteristics found in factors 2 (affect factor) and 4 (antisocial factor) are not inherent to psychopathy itself, and instead are behavioral manifestations. This would mean that it is possible that criminality is not an essential component of psychopathy at all (Cooke, Michie, & Hart, 2006; Walters, Knight, Grann, & Dahle, 2008) this is problematic for the PCL-R in that its primary predictive accuracy is within the antisocial facets in factor 2. This means that psychopathy is being predicted based on the characteristics of a factor that may be not even be associated with the construct of psychopathy.

#### Comprehensive Addictions and Psychological Evaluation (CAAPE-5)

The risk assessments discussed above are the most prominent in the field. Unfortunately, they are somewhat limited in either utility or precision regarding individuals with behavioral health conditions. The LSI-R is predictive of recidivism for general offending, but falls short if substance use is involved. The HCR-20 is useful in predicting recidivism, especially for violent

offenses, however, its historical and clinical scales fall short in terms of behavioral health conditions. The PCL-R is especially adept at predicting both general and violent recidivism for behavioral health conditions. However, it requires considerable time from a mental health professional to complete.

The Comprehensive Addictions and Psychological Evaluation – 5 (CAAPE – 5; Hoffmann, 2000, 2013) sidesteps many of these failings. The CAAPE – 5 is a structured clinical assessment that was originally developed to diagnose co-occurring disorders. However, it possesses all the components of an SPJ risk assessment. This instrument assesses behavioral health conditions with clinical diagnostic items compatible with the DSM-5 (American Psychiatric Association, 2013); while also collecting personal information, such as marital status, employment prior to arrest, education level, etc. (Hoffman, 2013). The scales on the CAAPE-5 have internal consistencies ranging from 0.74 to 0.90 (Cronbach, 1951) with the well-defined scales, such as substance use, anxiety, and depressive disorder, holding the highest reliability (Proctor & Hoffmann, 2012). The CAAPE-5 also has strong content validity (Cureton, 1951) due to its items aligning with the diagnostic criteria for behavioral health conditions, including substance use disorders, in the DSM-5 (APA, 2013). Additionally, the CAAPE-5 preserves construct validity (Cronbach & Meehl, 1955) by allowing administrators to quantify responses to items, which enables administrators to determine whether the criteria for a behavioral health condition has been met.

The utility of the CAAPE-5 as a diagnostic assessment is demonstrated through a 95% agreement between the Structured Clinical Interview for the DSM (SCID), which is the gold standard of diagnostic interviews, and the CAAPE-5 (Gallager, Penn, Brooks, & Feldman, 2006). The CAAPE-5 is also useful in that it can be completed in approximately 30 minutes, and can be

administered by untrained professionals. The emphasis the CAAPE-5 places on comorbid behavioral health conditions and substance use disorders are aspects that most popular risk assessments do not emphasize enough. Moreover, the diagnostic element of the CAAPE-5 has implications for research in that it would allow researchers to make connections between specific behavioral health conditions and types of offenses they are most likely to commit. These associations would be useful in predicting recidivism of offenders with behavioral health conditions. Unfortunately, research regarding this topic is either absent or narrow in scope.

Although the CAAPE – 5 has been demonstrated to accurately assess offenders for behavioral health conditions, this tool has a few weaknesses. The first of which is a limitation for many forensic diagnostic assessments, and that is its lack of research using female participants. Another sample related limitation is the underrepresentation of ethnically diverse samples, the CAAPE – 5 has largely only been tested on samples of predominately white offenders (Proctor & Hoffmann, 2012). Furthermore, when examining results procured by the CAAPE – 5 not all diagnostic criteria are used, and the results do not provide an actual diagnosis. The CAAPE – 5 provides positive identifications of which can be used to guide treatment planning (Proctor & Hoffmann, 2012).

### **Offending Patterns of Individuals with Behavioral Health Conditions**

Examining the types of crime that are associated with specific behavioral health conditions, as mentioned above, would greatly assist in predicting recidivism among offenders with such conditions. Up to this date, the vast majority of studies on this topic have only examined associations between specific behavioral health conditions and violent crime. The information examining the link between type of offense and type of behavioral health condition are limited primarily to severe behavioral health conditions. This is detrimental since less severe

behavioral health conditions affect a much larger portion of the population. Neglecting other types of offense and less severe behavioral health conditions significantly limits the understanding of behavioral health conditions within the criminal justice system.

Personality disorders (PD) have long been associated with criminal activity (Davidson, & Janca, 2012). A study conducted with 391 offenders using the Structured Clinical Interview for Axis-II Disorders (SCID-II) examined the associations between personality disorders and specific offenses (Roberts & Coid, 2010). Cluster A disorders, characterized by odd and/or eccentric features, were found to have significant positive and negative associations with specific offenses (Roberts & Coid, 2010). Paranoid PD's had negative associations with driving offense, but significant positive associations with robbery and blackmail. Schizotypal PD's, on the other hand, had significant negative associations with robbery and blackmail, but were positively associated with arson. Lastly, Schizoid PD's were positively associated with burglary, theft, and kidnapping such as antisocial disorders were unsurprisingly associated with all categories of offense including, firearm offenses, robbery, burglary/theft, obstruction of justice, blackmail, fraud, escape and breach, and violence (Roberts & Coid, 2010). Cluster B disorders with dramatic, emotional, or erratic features, especially Narcissistic PD, were associated with fraud and forgery. Shockingly, Borderline PD was not associated with any specific offense, and is only associated with a high prevalence rate in prison and jail populations. This high prevalence of Borderline PD is largely attributed to its high comorbidity with Antisocial PD (Roberts & Coid, 2010). Cluster C PD's generally typified by anxiety and fearfulness were associated with offending as well. This cluster is associated with property damage (Davison & Janca, 2012), firearm offenses and child sexual assault (National Offender Management Service, 2015). Sexual offenders had overall higher rates of cluster B and C disorders (Eher et al., 2010). Rapists, specifically, had higher rates

of Antisocial and Borderline PD's than nonsexual offenders, and individuals with pedophilia had higher overall rates of cluster C disorders (Eher et al., 2010).

Disorders stemming from trauma, such as Post Traumatic Stress Disorder (PTSD), have a significant impact on criminal behavior. Individuals who are victims of violence and trauma are vulnerable to many adverse outcomes, such as substance use, depression, and PTSD (Foa, Ehlers, Clark, Tolin & Orsillo, 1999). PTSD often has negative effects on personality characteristics by manifesting as impulsivity, aggression, and negative emotions (Teiner et al., 1997). Due to this negative affect on personality characteristics, it is unsurprising that violent offences are often associated with PTSD (Elbogen, et al., 2014). More specifically, PTSD is highly associated with intimate partner violence (IPV) in a study conducted with 585 Vietnam-era veterans with spouses found that veterans who had PTSD had significantly higher rates of marital problems and IPV than those without PTSD (Jordan, et al., 1992). Furthermore, individuals with PTSD have a high comorbidity rate with substance, use which exacerbates violent behavior. A more recent study conducted with 1,090 U.S. veterans who served in Iraq and Afghanistan sought to predict violent behavior based on a diagnosis of PTSD and other risk factors, primarily substance misuse (Elbogen, et al., 2014). The study found that overall 35.9% of the sample who had a PTSD diagnosis and a history of substance misuse were substantially more likely to commit severe violent offences. However, that number sharply decreased to 10% with just a PTSD diagnosis and no history of substance misuse (Elbogen, et al., 2014). Based on such results, it is safe to say that PTSD and comorbid substance misuse is highly predictive of future violent behavior both inside and outside of the home.

Emotional disorders have been largely overlooked in forensic research. A recent Swedish study followed 47,158 individuals with depression diagnoses for 3.2 years and after controlling

for substance misuse, it was found that these individuals were three times more likely to engage in violent criminal offenses, specifically assault, sexual assault and robbery, than those without depression diagnoses (Fazel et al., 2015). This association could be due to the wide misdiagnosis of unipolar depression among individuals with bipolar disorder (Hirschfeld, Lewis & Vornik, 2003). Bipolar Disorder consists of cycles of depressive and manic episodes and has also been found to have significant associations with criminal behavior. In a study of 1,561 patients with either bipolar, manic, or major depressive disorder it was found that a large portion of the sample committed violent crimes, with the most prominent being physical assault, and non-violent crimes, with the most prominent being defalcation, theft, and fraud (Graz, Etschel, Schoech, Soyka, 2008). There have also been a number of studies associating Bipolar Disorder with unspecified violent offenses on other persons, as well as conflict with authority (Fovet, et al., 2015; Daff & Thomas, 2014; Fazel, et al., 2010).

For emotional conditions, such as anxiety disorders, associations with driving offenses have recently been discovered. A 2013 study examining trait anxiety and driving behavior concluded that trait anxiety has a destructive effect on memory and driving performance, resulting in an increase of driving offenses (Pourabdian & Azmoon, 2013). Anxiety disorders have been found to decrease an individual's threshold for aggressive responses to stress while driving. This in turn increases the risk of collisions and dangerous driving behavior (Clapp, Baker, Litwack, Sloan & Beck, 2014). Similarly, Generalized Anxiety Disorder (GAD), depressive disorders, and PTSD were found to be associated with substance misuse and convictions of driving while impaired (Lapham, Smith, Baca, et al., 2001).

Conditions involving psychotic and/or delusional symptoms have long been associated with criminal behavior. Despite this fact, the wealth of research associating disorders such as

schizophrenia, with criminal behavior have produced mixed results. For instance, a 1998 meta-analysis found psychosis to be inversely related to offending and similarly, some risk assessments have even listed psychotic disorders as protective factors (Bonta, Law & Hanson, 1998; Harris, Rice & Quincey, 1993). However, these findings have largely been discounted due to more recent studies concluding that symptoms of psychosis not only have a higher association to offending than the general population, but they have a high association with recidivism as well (Baillargeon, Binswanger, Williams & Murray, 2009). In fact, recent research supports associations between psychotic disorders, violent assault, and homicide (Putkonen et al., 2003), especially when present with comorbid personality and substance use disorders (Alden, Brennan, Hodges & Mednick, 2007).

Violent offenses are particularly well documented for offenders with psychotic disorders. However, there are discrepancies across studies about whether violent behavior is precipitated due to the symptoms of these disorders, or if other risk factors are the cause. To resolve this discrepancy, an extensive meta-analysis collected all studies within the past 40 years that associated psychotic disorders with violent offending (Fazel et al., 2009). Results of this study found that psychotic disorders only have a small association with violent offenses when substance use is controlled for (Fazel et al., 2009). Fazel et al. (2009) concluded that comorbid substance use disorders substantially increase the risk for violent behavior by individuals affected who have psychotic disorders. This conclusion sheds light on fundamental flaws within the wide assumption that psychotic disorders increase the likelihood of an individual engaging in violent behavior. Instead, these findings suggest that psychotic disorders are indicative of violent behavior when comorbid with other disorders, especially those related to substance use.

Substance use is widely known to increase the risk of engaging in criminal behavior. Recent forensic studies have found causal relationships between comorbid substance use disorder and behavioral health conditions in 50-80% of forensic cases (Palijan, Muzinic & Radeljak, 2009; Fortuna, 2009; Davies, 2009). Research indicates that having a behavioral health condition alone is minimally predictive of criminal behavior. However, when they are coupled with other risk factors, especially comorbid substance misuse, the predictive accuracy of criminal behavior rises significantly (Vaughn et al., 2008; Compton et al., 2005; Bladn & Orn, 1986).

Alcohol is a factor in 40% of violent crime and 37% of convicted offenders report to have been intoxicated at the time of their arrest (National Council on Alcoholism and Drug Dependence, 2015). It is also, strongly linked to driving offenses with approximately 30% of traffic fatalities attributed to driving while under the influence of alcohol in 2014 alone (U.S. Department of Transportation, 2015). Alcohol misuse has also been found to significantly increase instances of sexual assault, domestic violence, and nuisance crimes (Carpenter, 2007; Abbey, 2002; Bennett, 1998).

Similarly, illicit drug use, particularly heroin, narcotics, opiates, and cocaine, are used in higher proportions by offenders compared to the general population (Pierce, et al., 2015; Nurco, Hanlon & Kinlock, 1991). A recent study on illicit drug use and offending, examined 139,925 individuals who had been arrested for cocaine and opiate use from 2005 to 2009 (Pierce, et al., 2009). Their results demonstrated an elevated rate of prior offending and a significantly higher rate of acquisitive crimes relating to opiate use. A meta-analysis of 20 studies focused on opiate use and crack-cocaine also examined types of offending related to drug use (Hayhurts, et al., 2016). The findings underline the previously mentioned study by demonstrating that users of opiates and crack-cocaine have a strong relationship with prior offences, particularly theft,

burglary, and property crimes (Hayhurts, et al., 2016). Comparatively, another study examined property (e.g. theft, burglary), violent (e.g. physical or sexual assault), and versatile (property and violent) offenses committed by individuals with behavioral health conditions. Three quarters of the sample (N = 245), met criteria for a substance misuse disorder, with marijuana being most prominent (Colins, Vermeiren, Schuyten, & Broekaert, 2009). Upon examining the association between substance use and the offenses of interest, it was discovered that substance use disorders were present in the majority (86%) of property offenses (Colins, Vermeiren, Schuyten, & Broekaert, 2009). Past literature strongly supports the association between substance misuse and crimes of acquisition. This association could be due to persons engaging in burglary, theft, etc. to supplement their addiction.

### **Statement of Problem**

The contemporary risk assessments that are most widely used for individuals with behavioral health conditions are inadequate in many ways. In general, previous literature suggests that behavioral health conditions are poorly defined and thus poorly identified in jail and prison populations. Popular risk assessments perpetuate this by broadly defining behavioral health conditions in their various scales, especially those concerning comorbid conditions. Additionally, the administration of these assessments is often costly and requires large amounts of time from behavior health professionals. Another issue with the field of risk assessment is the lack of general knowledge about which offenses are associated with behavioral health conditions. It would be beneficial to have a risk assessment that is both diagnostic and predictive of recidivism. Such a risk assessment would allow not only the prediction of reoffence, but would also provide further predictive insight into which offenses individuals with certain behavioral health conditions are most prone to commit. The present study seeks to improve risk assessment for individuals

with behavioral health conditions by introducing a diagnostic assessment (CAAPE-5) that will pinpoint which disorders an individual is most likely to have, integrated with recent background information, which will enable professionals within the criminal justice system to assess risks for future offending behavior.

### **Hypotheses**

Previous literature examining the patterns of behavioral health conditions and their association with types of offending is scattered, with no one study examining overarching patterns of multiple behavioral health conditions and criminal behavior. The current study's hypotheses reflect this expanse of past research but are subject to whether the sample provides sufficient cases which meet the criteria of the hypotheses.

Hypothesis 1: It is hypothesized that participants who meet the criteria for a Personality Disorder will have a higher number of offenses than those without a behavioral health condition.

1a: It is hypothesized that participants who meet the criteria for Antisocial Personality Disorder will be associated with most offenses, especially violent offenses, such as assault. Past literature has found that Antisocial Personality Disorder is not only the most prevalent personality disorder among offenders, but also that most offenders who commit serious crimes (felony offenses and, violent offenses) often meet the criteria for Antisocial Personality Disorder (Davidson, & Janca, 2012).

1b: It is hypothesized that participants who meet the criteria for Paranoid Personality Disorder will be associated with robbery. This hypothesis is based upon the previous research conducted by Roberts and Coid (2010) which found significant positive associations between Paranoid Personality Disorder and robbery.

1c: It is hypothesized that participants who meet the criteria for Schizoid Personality Disorder will be associated with burglary, theft (changed to larceny), and kidnapping offences. This hypothesis is founded on the grounds of previous literature finding significant positive associations between Schizoid Personality Disorder and offenses involving the theft of property and kidnapping (Roberts & Coid, 2010).

1d: It is hypothesized that participants who meet the criteria for Cluster B (Antisocial, Borderline, Narcissistic, and Histrionic) and cluster C (Avoidant, Dependent, and Obsessive-Compulsive) disorders will be associated with sexual offenses. This predicted association is based off previous literature finding that most offenders who commit sexual assault seem to also meet the criteria for a personality disorder in either the cluster B or C domains (Roberts & Coid, 2010).

Hypothesis 2: It is hypothesized that participants who meet the criteria for a comorbid Post Traumatic Stress Disorder and substance use diagnosis will be associated with assault on a female. This prediction is bolstered by research studies finding that individuals with PTSD and a comorbid SUD have a higher likelihood of committing violent offenses, especially towards their partner (Elbogen, et al., 2014).

Hypothesis 3: It is hypothesized that participants who meet the criteria for an affective disorder such as Bipolar or Depression, will be associated with assault offenses. Affective disorders have largely been overlooked in offender populations. However, recent studies have found that when controlling for substance misuse, those with depressive or bipolar disorders are three times more likely to commit violent offenses than those without such disorders (Fazel et al., 2015).

Hypothesis 4: It is hypothesized that participants who meet the criteria for any anxiety disorder will be associated with driving offenses. Recent research has discovered that anxiety has a

destructive effect on memory and driving performance, resulting in an increase of driving offenses (Pourabdian & Azmoon, 2013).

Hypothesis 5: Psychotic disorders will be associated with violence.

5a: According to Putkonen and colleagues (2003), psychotic disorders have a higher likelihood of committing violent offenses, such as homicide, than offenders with other disorders. Therefore, it is hypothesized that participants who meet the criteria for any psychotic disorder will be associated with any type of violent offense.

5b: Recent research has discovered that although offenders with psychotic disorders already have a high association with violent offending, when such a disorder is comorbid with substance use the likelihood increases even more significantly (Alden, Brennan, Hodges & Mednick, 2007). It is hypothesized that participants who meet the criteria for any psychotic disorder and a comorbid substance use disorder will be more associated with any type of violent offense than participants who meet the criteria for just a psychotic disorder.

Hypothesis 6: It is hypothesized that participants who meet the criteria for an alcohol use disorder will be associated with sexual assault, domestic violence assault, nuisance crimes, and driving offenses. This hypothesis is supported by previous alcohol research finding significant associations between alcohol use and driving offenses, domestic violence, date rape, and nuisance crimes (e.g., drunk in public) (National Council on Alcoholism and Drug Dependence, 2015).

Hypothesis 7: It is hypothesized that participants who meet the criteria for an illicit drug use disorder will be associated with crimes of acquisition.

Hypothesis 8: It is hypothesized that the participants who meet the criteria for a comorbid behavioral health condition will involve either Antisocial Personality Disorder or a Substance Use Disorder. These two disorders are both extremely widespread in offender populations, and thus stands to reason that these two disorders could possibly have the highest rate of comorbidity.

Hypothesis 9a: Understandably, research has found that most offenders who meet the criteria for a severe substance use disorder are most likely to have more substance related offences (Pierce, et al., 2015; Nurco, Hanlon & Kinlock, 1991). Therefore, it is hypothesized that those with a severe substance use diagnosis will be more likely to have substances involved in subsequent arrests (e.g., DWI, disorderly conduct, appeared intoxicated or under the influence at the time of the arrest).

9b: Research indicates that having a behavioral health condition alone is minimally predictive of criminal behavior. However, when they are coupled with other risk factors, especially comorbid substance misuse, the predictive accuracy of criminal behavior rises significantly (Vaughn et al., 2008; Compton et al., 2005; Bladn & Orn, 1986). Due to these findings, it is hypothesized that participants who meet the criteria for persons with two or more severe substance use diagnoses will have more repeated offenses of any kind based on the retrospective findings.

## CHAPTER THREE: METHODOLOGY

### **Participants**

The participants for the current study are 283 randomly selected inmates from the Haywood County Detention Center in Waynesville, North Carolina. These participants were admitted to the facility within the four days before the CAAPE-5 interview. Due to the fact that most inmates do not stay in jail for more than four days, inmates that had been booked for longer than that time period were not representative of the overall sample within Haywood County Detention Center and were therefore not interviewed. Participants were randomly selected for retrospective data collection by drawing names of inmates who met the required window of time after booking (24 to 96 hours).

Participants ranged in age from 18 to 66 years, with an average age of 33 years. Most participants reported their ethnicity as White (84.5%), with the second highest ethnicity reported as Native American (9.9%), and lastly African American (2.8%). Half of the participants described themselves as never having been married (50.5%), with the remaining portion of the sample describing themselves as either married or living as married (20.2%) and divorced or separated (27.9%). Nearly half of the sample reported receiving a high school diploma (49.8%), the remainder reported either an education level less than high school (34.2%), or some education beyond high school (17%). Approximately half of the participants were unemployed at the time of the interview (48%), 35% were employed part-time, 7% reported full time employment, and 10% were disabled. The typical type of employment reported by participants was labor (46%), and the average income for 45% of the sample was reportedly less than \$10,000 for the 12 months leading up to the interview, with the remaining 28% reporting income ranging from \$10,000 to \$20,000.

## **Measures**

The CAAPE-5 was used to measure behavioral health conditions affecting participants. The CAAPE-5 structured interview takes approximately 30 minutes to complete, this measure includes demographic information, questions about mental health disorders, and questions about substance use disorders. As discussed previously, the CAAPE-5 has appropriate reliability and validity for correctional environments (Proctor & Hoffmann, 2012). The results from the CAAPE-5 interview were used to predict types of offense for the year after the interview.

In addition to CAAPE-5 data, extraction data were also obtained for the participants. Extraction data included information from the medical questionnaire that was completed at the time of booking, along with arrest records for the previous year. The information acquired from the arrest records included the number of previous charges, and types of offense during the year before the CAAPE-5 interview, as well as the number and type of charge they were being booked for at that time. Prospective extraction data is identical to the retrospective data and was collected for the year after the CAAPE-5 interview. Extraction data was collected from the Haywood County Detention Center computer system, which is referred to as the Jail Management System (JMS).

## **Procedure**

Retrospective data was collected in 2016, via extraction forms completed separately for each participant. Extraction data entailed information recorded by the arresting officer for the type of offense and charge at the time of the interview. The same information was also recorded for any arrests within 12 months prior to their booking. Further information was obtained from the medical questionnaire which is completed by each inmate upon booking, such information

includes: mental state at the time of arrest, self-report of substance use, and information regarding previous mental health treatment.

Prospective data collection included participants who were rearrested during the year after their completion of the CAAPE-5 interview. Extraction data were obtained from JMS and included any instance of arrest that year, types of offense, and types of charge.

## CHAPTER FOUR: RESULTS

Participants for the current study consisted of a randomly selected sample of 200 male inmates and 83 female inmates from the Haywood County Detention Center in Waynesville, North Carolina. Retrospective data was collected from 10 December 2015 to 21 November 2016. The facility was visited eighty-two times within this period (Raggio, Hoffmann, & Kopak, 2017). Prospective extraction data was collected from 06 October 2017 to 07 December 2017. Data collection was completed after fifteen visits to the facility.

Per the CAAPE – 5 assessment of inmates conducted during retrospective data collection, the most common behavioral health condition among the sample were SUDs (substance use disorders) (Raggio, Hoffmann, & Kopak, 2017). According to diagnostic criteria outlined in the DSM – 5, 85.5% of the sample met criteria for at least one SUD, with 67.5% meeting criteria for at least one severe SUD, which is detailed in the DSM – 5 as meeting six or more criteria for an SUD (APA, 2013). The most prevalent serious SUDs among the sample include: methamphetamine or other stimulants (38.2%), heroin or other opioids (29.7%), alcohol (24.4%), marijuana (12%), and cocaine (5.3%) (Raggio, Hoffmann, & Kopak, 2017). Second to SUDs, the most common behavioral health condition was Post Traumatic Stress Disorder (PTSD) (48.1%), with 29.3% of the sample reportedly experiencing panic attacks related to past trauma. PTSD is followed by reported major depressive episodes occurring within two months prior to the interview (35%), with 14.1% reporting episodes previous to the two-month time frame. Manic episodes were reported for 18% of the samples, with 11% meeting criteria for possible bipolar disorder. Various Personality Disorders were indicated. The majority of these conditions were Antisocial Personality Disorder (ASPD) (35%), Obsessive – Compulsive Disorder (OCPD) (29.7%), Schizoid Personality Disorder (21%), and Borderline Personality Disorder (BPD)

(12.4%). Seven percent of participants reported possible delusions or hallucinations, and small portion of the sample (1.4%) demonstrated indications of possible psychosis (Raggio, Hoffmann, & Kopak, 2017).

Due to the nature of the CAAPE – 5 as a clinical tool, it was found that the data procured from the current study does not lend itself to strict parametric analysis. To remedy this issue  $\chi^2$  tests of independence (TOI) (Pearson, 1900) were conducted. Effect sizes were measured using Cramér's  $V$  (Cramér, 1946) and can be characterized as small (.01), moderate (.09), or large (.25). Additionally, variables analyzed in some hypotheses were adjusted due to inconsistent verbiage used in the jail management system (JMS). Some analyses were unable to be completed due to insufficient reported experiences of psychoticism (hypotheses 5a and 5b), and sexual offenses (hypothesis 1d).

Hypothesis 1 analyzed the effect of Personality Disorders, specifically Antisocial Personality Disorder (ASPD) on recidivism. This hypothesis predicted that ASPD were associated with higher instances of offending, especially violent offenses. Based upon the analyses, the frequency of being booked within a year post interview is dependent upon whether a diagnosis of ASPD was given ( $\chi^2 (2) = 11.612, p = .003$ ). This finding was true for both felony ( $\chi^2 (2) = 15.209, p = .000$ ) and misdemeanor ( $\chi^2 (2) = 10.6589, p = .005$ ) arrests. Moderate effects sizes were found for overall post-booking ( $V = .2134$ ), felony booking ( $V = .2447$ ), and misdemeanor booking ( $V = .2049$ ). However, post-booking for violent offenses appears to be independent of ASPD diagnosis ( $\chi^2 (2) = 1.4190, p = .492$ ).

Table 1: Results of Chi-square Test for frequency of booking and Indication of ASPD

ASPD	Booked 1 Year Post Interview		
	0	1	2+
No diagnosis	76 (56.30%)	28 (20.74%)	31 (22.96%)
Diagnosis	42 (35%)	36 (30%)	42 (35%)

*Note.*  $\chi^2 = 11.612$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

Hypothesis 1b predicted that robbery offenses would be dependent upon screening positively for Paranoid Personality Disorder (PPD). Due to formerly mentioned inconsistencies in recording type of offense in the JMS, larceny had to be substituted for robbery. Per the analyses, no dependency was found between larceny and PPD ( $p = .480$ ).

Hypothesis 1c, which predicted an association between burglary, theft, and kidnapping offenses and Schizoid Personality Disorder, also had to be altered due to zero recorded charges of kidnapping in the JMS, and inconsistent recordings of burglary and theft charges. Therefore, analyses were not able to be run for kidnapping offenses, and burglary/theft offenses were condensed and changed to larceny offenses. No dependence was found between larceny offenses and Schizoid Personality Disorder ( $p = .873$ ).

The second hypothesis predicted an association between meeting criteria for a comorbid PTSD and SUD and assault on a female. Three separate analyses were conducted, one for both males and females, one for males only, and one for females only. The variables were independent of each other, larceny and comorbid PTSD and SUD for both genders together ( $p = .379$ ), males only ( $p = .458$ ), or females only ( $p = .529$ ) did not reach significance.

Committing assault offenses was predicted to be associated with positive findings for either a Bipolar Disorder, or a depressive disorder in hypothesis three. Analysis concluded that

assault offenses were independent of inmates who screened positive for a Bipolar Disorder ( $p = .191$ ) or a depressive disorder ( $p = .431$ ).

Hypothesis four proposed that committing any driving offense, would depend upon whether diagnostic criteria for any anxiety disorder/s was met. The variables were independent of each other due to not being statistically supported in the sample, however, a trend toward significance was found ( $p = .069$ ).

Due to the absence of reported psychotic symptomology, hypotheses 5a and 5b could not be analyzed. Hypothesis 6 posited that post-bookings due to assault, sexual assault, domestic violence, nuisance crimes, and driving offenses would be associated with meeting the criteria for alcohol use disorder. This hypothesis was altered as a result of either inconsistent recording in the JMS, or insufficient data for type of offense. Therefore, sexual assault was eliminated from analysis, and domestic violence and assault were collapsed into one variable. However, the predicted association was not found for assault ( $p = .167$ ), nuisance crimes ( $p = .972$ ), or driving offenses ( $p = .491$ ) in this sample.

Hypothesis 7 also required alterations because of inconsistent recording in the JMS system. To ensure that the content of this hypothesis is fully addressed, crimes of acquisition were analyzed as property crimes and larceny. Results concluded that post-booking for larceny is independent of whether or not an inmate meets criteria for a severe SUD ( $p = .089$ ). However, an association was found between property crimes and meeting criteria for a severe SUD ( $\chi^2 (2) = 6.236, p = .044$ ). A small effect size was observed for this finding ( $V = .157$ ).

Table 2: Results of Chi-square Test for frequency of property crimes and Indication of Severe SUD

Severe SUD	Rearrest for Property Crime		
	0	1	2+
No diagnosis	91 (81.98%)	10 (9.01%)	10 (9.01%)
Diagnosis	101 (70.63%)	13 (9.09%)	29 (20.28%)

*Note.*  $\chi^2 = 6.2360$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

Hypothesis 8 predicted that of the participants who have more than one behavioral health condition (i.e. comorbid conditions), at least one of the behavioral health conditions would be ASPD, or an SUD. The analyses concluded that there is an association between meeting criteria for a comorbid behavioral health condition involving a single SUD, ASPD, or both, and the number of behavioral health conditions diagnosed ( $\chi^2 (9) = 106.275$ ,  $p < .001$ ), and a large effect size was observed ( $V=.354$ ). As the number of behavioral health condition's increase, the number of participants who meet criteria for only one SUD remains consistent, however, the number of those diagnosed with ASPD only increases at a moderate rate. Most importantly, as the number of behavioral health condition's increase, the number of those comorbid with one SUD and ASPD increases at a dramatic rate.

Table 3: Results of Chi-square Test for Comorbidity between SUD and ASPD

Number of BHCs	Comorbidity Between SUD and ASPD			
	none	SUD only	ASPD only	Comorbid
0	35 (58.33%)	25 (41.67%)	10 (9.01%)	0 (0.0%)
1	12 (20.69%)	19 (32.76)	8 (13.79%)	19 (32.76)
2	11 (19.64%)	20 (35.71%)	7 (12.50%)	18 (32.14)
3	6 (5.50%)	21 (19.27%)	13 (11.93%)	69 (63.30%)

*Note.*  $\chi^2 = 106.2748$ ,  $df = 9$ . Numbers in parentheses indicate column percentages.

Participants meeting criteria for a SUD consisting of only marijuana use were removed from the analysis of hypotheses 9 and 9a due to the low rate of offending by individuals with this type of SUD. The prediction that offenses involving substances (e.g. driving offenses – while under the influence, disorderly conduct, nuisance crimes, paraphernalia, possession, etc.) would be dependent upon meeting criteria for a severe SUD was supported by the data ( $\chi^2 (2) = 9.863$ ,  $p = .007$ ), with a small to moderate effect size ( $V = .197$ ). An association was also observed between possession offenses and meeting criteria for a severe SUD ( $\chi^2 (2) = 8.819$ ,  $p = .012$ ), with a small to moderate effect size ( $V = .187$ ). Additionally, being charged with a nuisance crime is dependent upon meeting criteria for a severe SUD ( $\chi^2 (2) = 10.700$ ,  $p = .005$ ), with a moderate effect size ( $V = .206$ ). However, an association was not found between driving offenses ( $p = .286$ ), disorderly conduct ( $p = .679$ ) and meeting criteria for a severe SUD.

Table 4: Results of Chi-square Test for Frequency of Possession Offenses and Severe SUD

Severe SUD	Possession Offenses		
	0	1	2
0	95 (86.36%)	5 (4.55%)	10 (9.09%)
1	101 (70.63%)	14 (9.79%)	28 (19.58%)

*Note.*  $\chi^2 = 8.8188$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

Table 5: Results of Chi-square Test for Frequency of Nuisance Offenses and Severe SUD

Severe SUD	Possession Offenses		
	0	1	2
0	81 (74.13%)	11 (10.09%)	17 (15.60%)
1	78 (54.55%)	30 (20.98%)	35 (24.48%)

*Note.*  $\chi^2 = 10.6997$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

Lastly, the current study predicted that repeated offenses of any kind would depend upon meeting criteria for two or more severe SUDs. This association was supported ( $\chi^2 (2) = 9.712$ ,  $p = .008$ ) with a small to moderate observed effect size ( $V = .195$ ).

Table 6: Results of Chi-square Test for Rate of Recidivism and 2 or more Severe SUDs

2 or more Severe SUDs	Rate of Recidivism		
	0	1	2+
Less than 2	44 (53.66%)	25 (30.49%)	13 (15.85%)
More than 2	74 (42.77%)	39 (22.54%)	60 (34.68%)

*Note.*  $\chi^2 = 9.7122$ ,  $df = 2$ . Numbers in parentheses indicate column percentages.

## CHAPTER FIVE: DISCUSSION

Approximately 70% offenders in U.S. jails and prisons are documented as having at least one behavioral health condition (James & Glaze, 2007). This disparate proportion of offenders with behavioral health conditions versus those without warrants a closer examination of the possible effects specific behavioral health conditions may have on offending. Historically, risk assessments have been used to examine these potential effects. However, although there are a variety of risk assessment instruments available, many are either cumbersome and require extensive training to use correctly, or they fall short when predicting risk for those with behavioral health conditions and Substance Use Disorders (SUDs), especially when comorbid. The goal of the current study was to test the potential utility of the Comprehensive Addiction and Psychological Evaluation – 5 (CAAPE – 5) for use with offenders who have behavioral health conditions. The CAAPE - 5 is both easy to administer by non-professionals and specializes in identifying SUDs as well as the most common behavioral health conditions found in correctional populations.

Per our results, the CAAPE – 5 was able to accurately predict the frequency of offending and types of offending in individuals screening positive for one or more SUDs, ASPD alone, or comorbid SUD and ASPD. The significance of the predictions for these two types of behavioral health conditions in particular is likely due to the fact that these are two of the most prevalent conditions found in forensic populations.

A positive finding for Antisocial Personality Disorder (ASPD), by the CAAPE -5 accurately predicted the frequency of reoffending and type of charge. This result was significant for both misdemeanor and felonious charges, however violent offending could not be predicted. This could be due to the few violent offenses recorded for the year after the CAAPE – 5

interviews. Additionally, the CAAPE – 5 results were very successful in predicting the patterns of comorbidity between SUDs and ASPD diagnoses. This finding supports the widespread prevalence of SUDs and ASPD in offenders, and the utility of the CAAPE – 5 to examine the impact comorbid behavioral health conditions have on criminal offending.

Results for SUDs specifically were significant in predicting rearrest for property and substance related crimes. This supports the hypothesis that offenders who suffer from an addiction are most likely to commit offenses that help perpetuate their addiction, such as selling stolen property to purchase more drugs or carrying paraphernalia. Additionally, the CAAPE – 5 findings accurately predicted that offenders with two or more severe SUDs were associated with an offense of any type, further bolstering the interconnection between SUDs and law-breaking behaviors.

These findings are important not only for the sake of expanding our current knowledge concerning recidivism and behavioral health conditions, but also for real world clinical implications. For instance, the retrospective CAAPE – 5 findings were compiled into a report and presented to the Haywood County Sheriff. This report was illuminating with respect to just how many of the inmates had behavioral health conditions, and the extent to which most of the inmates suffer from severe SUDs. Findings such as these came as a shock to police and custody staff and are currently influencing policy regarding the screening and treatment of offenders specifically with SUDs. Furthermore, the CAAPE – 5 results demonstrate how poorly widely used behavioral health screenings are at accurately identify mental health issues among offenders. Implementation of a more thorough screening process, in which the CAAPE – 5 provides, could potentially revolutionize how behavioral health conditions are recognized and treated in U.S. jails. Another example of the impacts the CAAPE – 5 report has had on the

treatment of behavioral health conditions in jails are the discussions of potential community treatment options for newly released inmates. Some of the ideas include transportation directly from jails to in-patient or out-patient treatment facilities, along with bringing community mental health professionals into the jails to hold consultations with inmates about to release. With proper screening protocols in our nations jails, the possibility of increasing the frequency and quality of treatment for offenders with behavioral health conditions is not an impossible goal to reach.

The current study has a few limitations, some of which are residual from retrospective data collection. One which should be considered when drawing conclusions is that the data on behavioral health conditions and SUDs were collected using only the CAAPE – 5 and results were not verified by an expert clinician. Additionally, with regard to both retrospective and prospective data, data was only collected at one detention center, rather than a variety of such facilities.

Limitations specific to prospective data collection largely center around inconsistencies between verbiage used in the current study's hypotheses, and verbiage used by police officers in the Jail Management System (JMS) to detail the specifics of each inmate's crime (e.g. labelling robbery as a property crime). Furthermore, several hypotheses were either unable to be tested, or were negatively impacted by small sample sizes due to the absence of certain types of offenses (e.g. sexual assault, kidnapping, violent assault, etc.), and low prevalence rates of some severe behavioral health conditions (e.g. psychoticism, Schizoid Personality Disorder, etc.). This may be due to an unexpected limitation that caused an overall decrease in sample size for the prospective phase of this study. Some participants were sent directly to the Department of Corrections after the CAAPE – 5 interview to serve prison sentences therefore, these participants

did not have any opportunity to reoffend in the year after the interview due to imprisonment.

Despite the limitations of the study, meaningful conclusions can still be drawn from the results.

The CAAPE – 5 seems to be able to adequately assess and predict future offending when an inmate meets the criteria for at least one SUD. This assessment also demonstrates the capability to accurately screen for comorbid disorders and predict reoffending based on the diagnoses. These two areas have been especially difficult for many risk assessments to accurately assess. Although the current study failed to successfully predict types of reoffending based upon the various behavioral health conditions included in the measure, previous research using the CAAPE – 5 has proven its ability to accurately identify these disorders (Proctor & Hoffmann, 2012).

Building from the current study, future research with the CAAPE – 5 should continue to be utilized with larger behavioral health samples. One avenue that could prove beneficial would be to assess groups with one specific behavioral health condition (e.g. Schizoid Personality Disorder, Panic Disorder, etc.) and examine their offense patterns. Doing so would assist in standardizing the CAAPE – 5 for use in predicting patterns of offending for a wide variety of disorders. Additionally, testing the CAAPE – 5's utility with a more robust offender sample would increase the likelihood of examining the predictive ability of the CAAPE – 5 with more diverse offenses. The Haywood County area is inundated with substance use related offenses due to the increasingly high prevalence of SUDs. By examining a larger, more diverse, sample the predictive abilities of the CAAPE – 5 would be more thoroughly tested.

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